

Mobile radio network services

Provisional Decision

19 October 2022

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The Competition and Markets Authority has excluded from this published version of the report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [X] Some numbers have been replaced by a range. These are shown in square brackets.

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Summary

Background

1. Being able to communicate effectively in the field with each other, with staff at base and with other organisations involved in tackling an emergency, is critical for emergency services staff. It is essential for them to do their job and to protect the safety of the general public and that of the emergency services.
2. To meet those needs, the emergency services require communication network services that are reliable 24 hours a day, 365 days a year; that enable them to communicate across regional boundaries and organisations; that provide coverage even in remote and hard to reach locations; and that include specialist features such as high speed call set up, emergency buttons, encryption, group calls and ambient listening.
3. In Great Britain, those communication services are provided through a bespoke integrated network called the Airwave Network. It uses Land Mobile Radio (LMR) technology developed specifically for public safety and is fully dedicated to serving the emergency services and other organisations which need to communicate with them.
4. The Airwave Network's users belong to one of five customer groups, each with its own specific set of requirements. They are: 44 police forces; 50 fire and rescue services; 14 ambulance trusts; the National Police Air Services; and 165 other organisations (described as 'Sharer' organisations), such as the Maritime and Coastguard Agency, who need to communicate with the emergency services in emergencies.
5. The Airwave Network was set up and operates under a Public Finance Initiative (PFI) Agreement made with the Police Information Technology Organisation (subsequently replaced by Home Office) in 2000 following a public procurement exercise. That agreement was originally set to end after 19 years, around 2019. Services are provided under the terms of separate agreements that were entered into with individual emergency services user groups in subsequent years. The network is owned and operated by Airwave Solutions (which was acquired by Motorola in 2016).
6. As a bespoke integrated network fully dedicated to emergency services communications covering the whole of Great Britain, the Airwave Network is operated by a single supplier. No alternative network providing similar services exists.
7. In 2014/15, the Home Office conducted a further procurement exercise for the provision of a new network to replace the Airwave Network, called the Emergency

Services Network (ESN). That replacement was originally intended to be implemented in or around 2020, but it has not yet taken place.

Our market investigation

8. Market investigations are about whether competition is working effectively in the market as a whole.¹ Even where, as in this case, there is a single monopoly supplier and a single entity (the Home Office) representing a group of buyers, the focus is on the functioning of the market, not just the conduct of particular firms or participants within it.
9. The aim of an investigation is to examine whether there is a competition problem caused by features of the market and, if so, to remedy them and/or their detrimental effects. We can intervene and impose remedies even where no specific law has been broken if we identify anti-competitive features in a market. That does not mean that firms or market participants have acted unlawfully.²
10. In this case, we have provisionally identified the relevant market as the supply of communications network services for public safety and ancillary services in Great Britain. We refer to it in this provisional decision report as the market for ‘the supply of communications network services for public safety.’
11. We have considered how competition can occur in that market. The decision to build a bespoke integrated network of the kind required meant that a single supplier would be best placed to meet the emergency services’ needs under long term contracts. Those contracts included a PFI Agreement and, under them, the large upfront investment required to build the network could be recouped, and an estimated rate of return earned, by the supplier over the life of the contracts.
12. An important source of competitive constraints on suppliers in this market,³ therefore, is ‘competition for the market’. It can occur when long term contracts are first tendered and when they expire (or, more specifically, in anticipation of their expiry when a replacement network is competed for).
13. In a well-functioning market, we would expect one set of competitive arrangements to be replaced by another when such long term contracts come to an end. That could, for example, be the replacement of the existing arrangements by:

¹ [Guidelines for market investigations: Their role, procedures, assessment and remedies \(CC3 \(Revised\)\)](#), paragraph 18.

² CC3 (Revised), paragraph 21.

³ But not the only one – see section 3 of this provisional decision report.

- (a) a competitively priced continuation of the operation of the existing network infrastructure (for example, under a retendering process facilitated by the transfer of the assets to the Home Office, or the threat of such a process); or
 - (b) a competitively priced new network (for example, one tendered under a new process), that could use new technology and offer enhanced functionality.
14. We have therefore assessed whether this has occurred and, if not, why not.

Our provisional assessment

15. In our provisional assessment, the terms of the PFI Agreement under which the Airwave Network is provided resulted from a process – tendering under public procurement rules – that can broadly be characterised as competition for the market. It appears to us that, in relation to the original period of the PFI Agreement, the Home Office had the opportunity to run an open competition for a supplier and, as a result, to agree terms that constrained the price of the provision of the network.⁴ In such a competition, the winning supplier would reasonably have been expected to set the price at a level that would enable it to cover its expected costs and earn a reasonable return for the period of the contract.
16. The PFI Agreement⁵ that resulted from the original procurement exercise was for a fixed term ending in 2019.⁶ It provided for a contract price designed to recoup the supplier's investment and offer it the possibility of an estimated rate of return over that period, but not beyond. It contained provisions which sought to deal with the end of the contract and the transfer of assets to the Home Office (or a third party), with no terms relating to or contemplating its extension.
17. The relevant provisions therefore appear to us to be consistent with terms we might expect to find in a well-functioning market up to 2019. They were consistent with the possibility of, for example, either a retendering process at that point, after the transfer of the network assets to the Home Office, or the replacement of the existing network in 2019/20 with a competitively procured and priced new one offering enhanced functions (and the latter is what the Home Office sought to achieve through the procurement exercise it conducted in 2014/15 for the provision of ESN).
18. The position now that the original period of the PFI Agreement has ended, however, is, in our provisional view, materially different. Our provisional assessment is that the terms on which the Airwave Network is provided after 2019 are better characterised as reflecting a virtually unconstrained monopoly position

⁴ Although, as described in Appendix B, there were some limitations on the extent of the competition that applied and the National Audit Office reported on these.

⁵ And associated service contracts.

⁶ Once all related contract end dates were aligned.

on the supplier's part rather than the result of a competitive process. Prices are established through bilateral negotiations between Airwave Solutions and its owner, Motorola (the monopoly supplier), and the Home Office (acting on behalf of all emergency services). In those negotiations the Home Office has no meaningful alternative option in terms of its choice of supplier.

19. We think it is significant that the terms on which the network is supplied, particularly the price, have not materially changed as we would expect in a competitive market to reflect that: (i) the original fixed period of the PFI Agreement has ended; and (ii) the incremental cost of providing the Airwave Network will have fallen significantly compared with the previous period where the supplier had to incur the substantial set-up costs of building the network.⁷ This is despite:
 - (a) The original terms of the PFI Agreement not contemplating their continued application after 2019;
 - (b) the expectation that the supplier's capital expenditure associated with the provision of the network and services to the end of 2019 should have been fully accounted for in its successful bid for the original contract; and
 - (c) the risk borne by the supplier being much reduced after 2019 because the network is built and is operating as a reliable income stream.
20. In other words, the terms of the PFI Agreement do not appear reliably to constrain the price at which the Airwave Network is provided after 2019, and do not result in a price or a level of profitability that would be expected in a well-functioning market. This is reflected in the generation of supernormal profits after the original period of the contract.⁸
21. Key reasons for the present position, in our provisional assessment, are that:
 - (a) the contractual provisions put in place under the PFI Agreement to enable competition for the provision of services using the underlying infrastructure at the end of the original fixed period of that agreement have not resulted in the transfer of network assets to the Home Office and Airwave Solutions continues to own them; and
 - (b) the fact that the government's chosen replacement for the Airwave Network, ESN, is taking considerably longer to implement than was contemplated: (i) when it was procured; and (ii) in 2016 when Motorola and the Home Office

⁷ This remains the case [§<] (see section 4 of this provisional decision report in particular).

⁸ Supernormal profits are profits which take into account all costs including a market-based return to the providers of capital on their investment. They are also called economic profits. Very broadly, these are the element of profits over and above the normal amount we might expect to be made in a well-functioning market.

negotiated terms that relate to the provision of the Airwave Network after 2019.

22. As a result, the Home Office and the emergency services in Great Britain appear to be 'locked in' with a monopoly provider, Airwave Solutions, well beyond the duration originally set under the PFI Agreement. They have no other choice but to use the Airwave Network for their key communications needs in critical situations, and are likely to be in that position until at least 2026 and possibly for a period beyond.
23. Our provisional view is that Airwave Solutions and its owner, Motorola, now have considerable market power in this market. The available evidence indicates that in the negotiations between Airwave Solutions and the Home Office relating to the continued provision of the Airwave Network beyond 2019, the Home Office is in a particularly weak bargaining position. That weakness results primarily from the absence of any alternative option at the Home Office's disposal for as long as ESN is not operational.
24. Other factors, in our provisional assessment, reinforce Airwave Solutions' and Motorola's market power and the weakness of the Home Office's bargaining position:
 - (a) The criticality of the service provided and concerns about the impact of any service disruption on the emergency services;
 - (b) the likely ineffectiveness of the original contractual provisions relating to benchmarking (and the lack of reliable comparators that make any benchmarking exercise practically very difficult (if possible at all)); and
 - (c) the asymmetry of information between the parties.
25. The first additional factor means that the Home Office and emergency services are dependent on the continued provision of the network, without disruption or degradation. The risks to public safety in the event of reduced or discontinuous network service are so serious that this is likely to limit very substantially the Home Office's ability to challenge the terms Airwave Solutions / Motorola propose.
26. The other two affect the Home Office's ability to assess and challenge the profitability and reasonableness of any price offer Airwave Solutions / Motorola make. As a result, in our provisional assessment, not only does the Home Office lack bargaining power in the negotiations, but it is unable to determine reliably whether Airwave Solutions is charging (or seeking to charge) prices that result in supernormal returns.
27. Two further issues relating to Airwave Solutions' and Motorola's roles in the delivery of ESN and the transition to it from the Airwave Network are also relevant. Our

provisional assessment is that these add to the competitive distortions in the market.

28. The first of those further issues is Motorola's dual role as both one of the key suppliers involved in the roll-out of ESN and, from 2016, the owner of Airwave Solutions. It has controlled both the Airwave Network (the current network) and key aspects of the delivery of ESN (the replacement network) since 2016 and continues to do so.⁹ Our provisional view is that Motorola's dual role gives it both the incentive and the ability to delay the delivery of ESN and to prolong the highly profitable monopoly position of Airwave Solutions.¹⁰
29. Our analysis is that the profits Motorola derives from the Airwave Network significantly outweigh any profits it can expect to derive from the delivery of its ESN obligations, directly or indirectly. As such, it can, in our provisional assessment, be expected to dull its incentive to deliver those obligations in a timely and efficient manner. Motorola's central role in delivering ESN also appears to us to enable it to delay the delivery and to prolong its position in relation to the Airwave Network. Some of the outcomes we can observe relating to the delivery of ESN – especially those delaying its replacement of the Airwave Network – are consistent with the actions of a supplier having the incentives and ability we have identified.
30. The second of the further issues that adds to the competitive distortions (in our provisional view) is that during the period (estimated to be at least 27 months) in which the transition between them will gradually occur, the Airwave Network and ESN will need to be linked.¹¹ This will occur through 'interworking', which will support communications between users as they switch networks at different times. The current interworking solution that Airwave Solutions / Motorola have developed involves proprietary interfaces and the Home Office has indicated that it is contemplating changes to ESN which would require the development of an alternative interworking solution.
31. The development of any such alternative interworking solution appears to rely on Airwave Solutions', and potentially Motorola's, active cooperation. Consequently, in our provisional assessment, they have an ability to delay, hamper and/or make more costly the development of any such solution and the transition process, if they choose. The competition issues described in paragraphs 12 to 22 above in particular, and the related high profits they can generate if the transition from the

⁹ [§<].

¹⁰ Which accounted for 7-8% of Motorola's global revenue but between 21 and 26% of its global pre-tax profits in 2018, 2019 and 2020.

¹¹ Because of the critical nature of network communication services for public safety and the length of the transition period.

Airwave Network is delayed, may dull their incentives effectively and efficiently to deliver an alternative solution.¹²

32. Taking all of the above points into account, it appears to us that the current situation, in which charges for Airwave Solutions' provision of LMR network services for public safety are not subject to meaningful constraints, is the result of a market that is not functioning well.

Adverse effect on competition (AEC) in the relevant market

33. Based on our analysis, we provisionally find that features of the market for the supply of communications network services for public safety, individually or in combination, prevent, restrict or distort competition in connection with the supply of LMR network services for public safety in Great Britain. There is, in our provisional view, an AEC in that market.
34. Our provisional assessment is that the following features mean Airwave Solutions, and its owner, Motorola, have unilateral market power and are able, as described further below, to charge prices above the level we might expect in a competitive market and to make supernormal profits:
- (a) The Airwave Network is a critical piece of infrastructure on which the emergency services in Great Britain, and ultimately lives, depend.
 - (b) The Airwave Network is the only network of its kind in Great Britain and is provided by a monopolist. No other such networks exist nor are they likely to be constructed and ready for use before ESN is able to replace it.
 - (c) The Airwave Network assets have not transferred to the Home Office under the terms of the PFI Agreement, Airwave Solutions still owns them (and the related business) and the Home Office cannot retender or realistically threaten to retender their provision.
 - (d) The longer than anticipated lead time for the delivery of ESN and its replacement of the Airwave Network: it will not be ready to replace the Airwave Network until at least 2026 and possibly later.
 - (e) The Home Office and the emergency services in Great Britain are locked in with the incumbent supplier of communications network services – Airwave Solutions (and Motorola) – beyond the period over which its prices were, or should have been, constrained by the terms of the PFI Agreement (and Airwave Solutions should have recouped its investment and a reasonable return).

¹² [38].

- (f) The Home Office has very weak bargaining power.
 - (g) The asymmetry of information between the parties.
 - (h) The lack of effective constraints provided by the terms of the PFI Agreement on the price of the provision of the network after 2019, including the benchmarking provisions which are likely to be ineffective.
35. Two further features strengthen and have the potential to prolong the unilateral market power described above:
- (a) The dual role of Motorola which dulls its incentive to perform its part in the delivery of ESN effectively and efficiently, and which gives it the ability to prolong the operation of the Airwave Network by delaying the delivery of ESN.
 - (b) The role of interworking in strengthening Airwave Solutions' and Motorola's market power, by enabling them to delay, hamper and/or make more costly the transition of users from the Airwave Network to ESN.
36. In our provisional assessment, these two additional features add to the AEC we have provisionally found but they are not determinative of it. We would be minded to find an AEC even in the absence of these two additional features.

Customer detriment and remedies

37. Our provisional estimate is that the AEC we are minded to find means that Airwave Solutions, and Motorola, can be expected to make total supernormal profits from the operation of the Airwave Network of around £1.1 billion between 1 January 2020 and 31 December 2026. That is the element of profit over and above the amount we might expect them to make in a well-functioning market. If the delivery of ESN takes longer, our estimate is that they could be expected to make around another £160 million of such supernormal profits each year after 2026. Supernormal profits Airwave Solutions and Motorola would be able to generate by making interworking more costly would be additional to this.
38. We are minded to regard these supernormal profits as a reflection of Airwave Solutions' and Motorola's ability to set prices very substantially above the competitive level such that the Home Office and the emergency services in Great Britain are paying a much higher price than they should for provision of the relevant services.
39. The supernormal profits are, in our provisional view, a reasonable measure of the transfer of welfare from the emergency services, and the taxpayers who fund them, to Motorola shareholders that can be expected to result from the AEC we have

provisionally identified. They indicate that a significant detrimental effect on customers results from that AEC.

40. We have considered the remedies that are effective and proportionate to address our concerns about Airwave Solutions' and Motorola's unilateral market power. Our preference in market investigations is normally to seek to identify remedies that address or remove the features giving rise to the AEC.¹³ In this case, however, our provisional view is that such remedies are limited where a number of the features of the market, such as the criticality of the Airwave Network and its provision by a single supplier, and the Home Office's dependence on it until ESN (or any alternative network) is ready, will continue to exist.
41. Our main remedy proposals therefore focus on mitigating the detrimental effects of the AEC we provisionally identify. To do that, we propose to impose:
- (a) A charge control on the price for which Airwave Solutions provides the Airwave Network and services; and
 - (b) obligations on Airwave Solutions and Motorola to deliver, and/or facilitate the development and delivery of, an alternative interworking solution in a timely and effective manner, and to provide the services involved in doing so on a cost-plus basis.
42. We also propose to make a recommendation to the Home Office that would supplement those remedies. It should, as soon as possible, implement a plan to ensure that the supply of communications network services for public safety in Great Britain is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029.
43. The charge control relating to the Airwave Network and services would set the price at a level that would apply in a competitive market. That would, in our provisional view, mitigate the detrimental effects on customers (the emergency services and ultimately taxpayers) from Airwave Solutions' and Motorola's unilateral market power. To the extent they would no longer be earning supernormal profits, that would also reduce Motorola's incentive to delay the delivery of ESN and thereby prolong the operation of the Airwave Network.
44. The charge control would commence in 2023. It would be subject to a review in 2026 that may result in its continuation, variation or removal, and, subject to that review, it would continue until 31 December 2029.
45. The obligations as to the delivery of any new interworking solution Airwave Solutions and Motorola are required to provide (or assist a third party in providing) would relate, for example, to the extent of the action they must take and its timing.

¹³ CC3 (Revised), paragraph 330.

Those obligations would address the ability and incentive to hamper the transition between networks that we provisionally find results from the position on interworking. Requiring Airwave Solutions and Motorola to provide the services required on a cost-plus basis would prevent them charging a price above a competitive level and constrain their ability to generate additional supernormal profits.

46. The plan that we propose the Home Office put in place should ensure that, after the period that would be covered by measures imposed by the CMA as a result of this investigation, the supply of communications network services for public safety is subject to competitive pricing arrangements or alternative measures that result in price levels that would be expected in a competitive market. That could involve, for example, one or more of the following:
- (a) A new network offering enhanced functionality replacing the Airwave Network;
 - (b) a competitive process that may result in changes to the ownership and operation of the Airwave Network and/or its assets taking place; or
 - (c) putting in place a regulatory function to safeguard against the risk of anti-competitive outcomes resulting from a continuing monopoly position in the provision of all or part of the Airwave Network beyond 2029.
47. The Home Office's plan should direct appropriate focus and resources to the ESN programme (or any alternative programme) and seek to ensure that the replacement network or other arrangements operate on competitive terms and in competitive circumstances (or to equivalent effect). Doing so would address the market feature relating to the delayed provision of ESN in particular and those relating to the Home Office's dependence on the Airwave Network and its provision by Airwave Solutions / Motorola.

Provisional Findings

1. OUR TASK

Introduction

- 1.1 On 25 October 2021, following a consultation opened on 8 July 2021, the Competition and Markets Authority (CMA), in exercise of its powers under sections 131 and 133 of the Enterprise Act 2002 (the Act),¹⁴ made a reference for a market investigation into the supply of Land Mobile Radio (LMR) network services for public safety (including all relevant ancillary services) in Great Britain.
- 1.2 On 25 October 2021, the CMA appointed from its panel a group of four independent members to lead the investigation (the Group).¹⁵
- 1.3 This report sets out the provisional findings of our investigation and our provisional decision on remedies. We are required to publish our final report by 24 April 2023.¹⁶

Our statutory duty

- 1.4 We are required to decide whether ‘any feature, or combination of features, of each relevant market prevents, restricts or distorts competition in connection with the supply or acquisition of any goods or services in the United Kingdom or a part of the United Kingdom’.¹⁷ If we decide that there are such features or combination of features, then there is an adverse effect on competition (AEC).¹⁸ A ‘feature’ of the market refers to:
- (a) the structure of the market concerned or any aspect of that structure;
 - (b) any conduct (whether or not in the market concerned) of one or more than one person who supplies or acquires goods or services in the market concerned; or
 - (c) any conduct relating to the market concerned of customers of any person who supplies or acquires goods or services.¹⁹

¹⁴ [The Act](#), sections [131](#) and [133](#).

¹⁵ Details of the members of the Group are on our [website](#).

¹⁶ We are required to publish our final report within 18 months beginning with the date of the reference, and we may extend that period for special reasons only once and by no more than six months ([the Act](#), section [137](#)).

¹⁷ [The Act](#), section [134\(1\)](#). For present purposes, ‘relevant market’ means a market in the United Kingdom for goods or services of a description specified in the reference ([the Act](#), section [134\(3\)\(b\)](#)).

¹⁸ [The Act](#), section [134\(2\)](#).

¹⁹ [The Act](#), section [131\(2\)](#).

- 1.5 If we find that there is an AEC, we are required to decide:
- (a) whether action should be taken by us, or whether we should recommend the taking of action by others, for the purpose of remedying, mitigating or preventing the AEC concerned or any detrimental effect on customers²⁰ so far as it has resulted from, or may be expected to result from, the AEC;
 - (b) and, if so, what action should be taken and what is to be remedied, mitigated or prevented.²¹
- 1.6 In deciding the above questions on remedies, we must, in particular, have regard to 'the need to achieve as comprehensive a solution as is reasonable and practicable to the adverse effect on competition and any detrimental effects on customers so far as resulting from the adverse effect on competition';²² and we may, in particular, have regard to the effect of any action on any relevant customer benefits of the feature or features of the market(s) concerned.²³

Background to the reference

- 1.7 Prior to making the reference, the CMA consulted on whether to launch a market investigation reference (MIR) into the mobile radio network for emergency services.²⁴ The consultation provisionally considered that the market for the supply of the Airwave Network (a secure private mobile radio communications network used by personnel involved in public safety operated by Airwave Solutions Limited (Airwave Solutions)) in Great Britain was not working well. During the consultation period, the CMA gathered and assessed evidence received from Motorola and the Home Office.
- 1.8 Further to its consideration of the consultation responses, the CMA concluded that it had reasonable grounds to suspect that one or more features (alone or in combination) in relation to the supply of LMR network services for public safety (and ancillary services) in Great Britain was preventing, restricting or distorting competition. It considered, amongst other factors, that there was a reasonable chance that appropriate remedies would be available, if an AEC was found.

²⁰ [The Act](#), section [134\(5\)](#): there is a detrimental effect on customers if there is a detrimental effect on customers or future customers in the form of: (a) higher prices, lower quality or less choice of goods or services in any market in the United Kingdom (whether or not the market(s) to which the feature or features concerned relate); or (b) less innovation in relation to such goods or services.

²¹ [The Act](#), section [134\(4\)](#).

²² [The Act](#), section [134\(6\)](#).

²³ [The Act](#), section [134\(7\)](#).

²⁴ For more details see CMA (2021), [Consultation on the proposal to make a market investigation reference into the mobile radio network for emergency services](#).

- 1.9 Consequently, on 25 October 2021, the CMA referred the supply of LMR network services for public safety (and ancillary services) in Great Britain for a market investigation.²⁵
- 1.10 On 22 December 2021, Airwave Solutions, Motorola Solutions UK and Motorola Solutions, Inc. made an application for judicial review under section 179 of the Act challenging the CMA's decision to make the MIR and the timetable by which the reference was to be determined. On 2 February 2022, the Competition Appeal Tribunal rejected the two challenges brought by the applicants.²⁶

Conduct of the investigation

Terms of reference

- 1.11 As set out in the terms of reference,²⁷ for the purposes of the MIR:
- (a) 'LMR network services for public safety' means – services provided through a secure private communications network, based on land mobile radio technology, that is used by personnel involved in public safety (namely the police, emergency and fire services, and those who need to communicate with such services) when in the field; and
 - (b) 'ancillary services' means – services that are interlinked with the provision of LMR network services for public safety and for which customers have limited alternative suppliers including for example services such as those provided at the testing facilities for radio terminals used by LMR network public safety users.

Focus of the investigation

- 1.12 The CMA's Supplemental Guidance on market studies and market investigations states that, in addition to drafting the formal terms of reference for the market investigation, the CMA Board may append an advisory steer to the MIR decision setting out its expectations regarding the scope of the market investigation and the issues that could be the focus of it.²⁸
- 1.13 The CMA Board's advisory steer to the Group in this case summarised features of the market that the CMA had reasonable grounds to suspect may prevent, restrict or distort competition. It said that the central concern arising from the work carried out in advance of the market investigation was that Motorola could have a

²⁵ CMA (2021), [Final report and decision on a market investigation reference](#).

²⁶ [Airwave Solutions Limited & Others v CMA \[2022\] CAT 4](#).

²⁷ [Terms of Reference](#), 25 October 2021.

²⁸ [Market studies and market investigations: supplemental guidance on the CMA's approach \(CMA3\)](#), revised July 2017, paragraph 3.39.

significant level of market power, and that, as long as the Airwave Network was in operation, it might be able to derive significant levels of excess profits from the exercise of its market power. The burden of any excess profits made by Motorola ultimately fell on the taxpayer.²⁹ While the Group would be expected to take this steer into account, the Group will, as required by the legislation, make its statutory decisions independently of the CMA Board.

Evidence gathering

1.14 We gathered evidence in a variety of ways, including through:

- ‘First Day Letters’ issued to Motorola and the Home Office.
- Formal and informal written requests for information to Motorola, the Home Office and other parties (including the Ambulance Radio Programme, EE, the National Fire Chiefs Council, Police Scotland, the Scottish Ambulance Service, the Scottish Fire and Rescue Service, the Senior user for Firelink and Emergency Services Mobile Communication Programme (ESMCP) for Wales, and the Metropolitan Police Service).
- Video conference calls with parties (including Actica Consulting (Actica), Ericsson, IBM, ThoughtWorks and a former Motorola Programme Director) to understand the context of reports, submissions and statements they had made in relation to ESN, and with the Home Office to discuss its interworking submission.³⁰

1.15 We obtained a large number of internal documents and data from both Motorola and the Home Office covering a range of areas, including in relation to:

- Financial information including information on revenue streams, operating expenditure (opex), transfer charges, capital expenditure (capex), modern equivalent asset valuation, and cost of capital.
- Negotiations between the Home Office and Motorola including detailed records of meetings, email exchanges, internal assessments of negotiating positions, and strategy documents.
- ESN, including emails setting out Motorola’s business strategy, rationale and incentives at the time of Motorola’s acquisition of Airwave Solutions, ESN delays and re-planning, interworking, and the Home Office’s calculations on the cost of ESN.

²⁹ [CMA Board Advisory Steer](#), 25 October 2021, paragraph 6.

³⁰ [Interworking submission on behalf of the Home Office](#), 28 April 2022.

Specialist advice and evidence

- 1.16 Following a competitive tender process, we appointed the following organisations to assist us in our market investigation:
- Real Wireless, an advisory firm specialising in providing advice in relation to wireless spectrum, infrastructure and technology equipment, provided assistance in relation to our understanding of technical issues regarding telecoms technology, as well as in relation to the capex and cost programmes being considered as part of the market investigation.
 - Kroll, a consultancy providing proprietary data and technology insights, provided assistance in relation to our understanding of tax and transfer pricing matters being considered as part of the investigation.
- 1.17 During the course of the investigation the following persons were also asked to assist our investigation in an advisory capacity:
- Professor Alan Gregory, who provided advice on our profitability and cost of capital analysis.
 - John Earwaker, Director at First Economics, who provided advice on the potential design of a price control remedy.
- 1.18 The Independent Assessment Panel (IAP), a body established in February 2019 to provide assurance and advice to the Home Office Permanent Under-Secretary of State, the Infrastructure and Projects Authority, the National Audit Office, and the Senior Responsible Officer of the ESMCP programme, provided evidence to the CMA on the technological context of the programme.

Consultation on our emerging analysis

- 1.19 In December 2021, we published an issues statement³¹ outlining our initial theories concerning which features, if any, may be adversely affecting competition and which potential remedies may be suitable to address any AEC that we may find or any detrimental effect resulting from any such AEC. We invited parties to provide submissions commenting on the issues and possible remedies. We published non-confidential versions of the responses to the issues statement that we received on our case page.³²
- 1.20 In December 2021, we published a profitability methodology approach working paper. The purpose of this paper was to set out our proposed methodology in relation to financial and profitability analysis, and to set out illustrative analysis and

³¹ [Issues Statement](#), 13 December 2022.

³² See [Mobile radio network services](#).

results adopting this approach using the financial information we had collected at the time.

- 1.21 In May 2022 we published five working papers and an overview of unpublished working papers (which explained that some working papers, due to the potential commercial sensitivity of the analysis within them, were being disclosed to Motorola or to Motorola and the Home Office only, rather than being published on our case page). The working papers set out the CMA's understanding of relevant factual matters and some emerging views. They gave parties an opportunity to comment upon that understanding and also invited parties' comments and any further evidence for consideration by the Group conducting the investigation. We published non-confidential versions of the responses we received to some of these working papers on our case page and produced and published an aggregated response for the papers that were disclosed to Motorola and the Home Office.³³

Engagement with stakeholders

- 1.22 We have engaged with various stakeholders during the investigation to seek factual material and evidence, as well as their input and views on relevant issues. These are important parts of the investigation designed to enable the CMA to form views on the basis of correct facts and in light of relevant evidence.
- 1.23 We held hearings with the Cabinet Office, Deloitte, the Home Office, the IAP and Motorola. Summaries of these hearings are published on our case page.³⁴
- 1.24 In addition, we attended a site visit and presentation at the premises of Airwave Solutions and also attended a presentation provided by the Home Office.

Specific engagement with Motorola and the Home Office

- 1.25 Motorola and the Home Office are parties in possession of key factual knowledge, material and evidence relevant to this market investigation:
- (a) In Motorola's case, it owns Airwave Solutions, the operator of the Airwave Network, and were we to find an AEC and impose remedies these could adversely, and potentially significantly, affect Motorola's business.
 - (b) Since 2016, the Home Office has negotiated changes to contract terms, on behalf of the key groups of customers, with Motorola and Airwave Solutions for access to a piece of critical infrastructure for the emergency services in Great Britain.

³³ See [Mobile radio network services](#).

³⁴ See [Mobile radio network services](#).

- 1.26 Given these facts, we have taken a number of steps to ensure that Motorola and the Home Office had the opportunity to present all material facts to the Panel and that they were both able to make submissions in support of their respective positions. Those opportunities included:
- (a) With regard to Motorola, the request for an initial submission (in response to the CMA's Decision on MIR).³⁵
 - (b) With regard to Motorola and the Home Office, an invitation to respond to our issues statement, and an opportunity for Motorola to provide a supplementary submission on remedies (to address Motorola's lack of engagement with this aspect of our issues statement).
 - (c) With regard to Motorola and the Home Office, a first hearing with each party in which we explored the range of issues that we had highlighted in our issues statement.
 - (d) With regard to Motorola, a second hearing, which it requested, for which it had set the agenda and at which its staff provided evidence of their personal commitment to the delivery of the ESN project.
 - (e) With regard to Motorola and the Home Office, the opportunity to respond to our working papers as described above.
- 1.27 As is our standard practice, our working papers set out our understanding of relevant facts, thereby providing parties with an opportunity to make detailed submissions on specific facts and our assessment of them. While both Motorola and the Home Office made submissions in relation to the working papers, we note that in a number of its responses, Motorola provided minimal or no engagement with the specific facts and our understanding of them as set out in those papers.³⁶ It has often neither disputed specific facts nor offered alternative understandings and has instead submitted that failure to comment on facts does not signify acceptance of them.³⁷ We have for the purposes of this provisional decision report proceeded on the basis of the facts as we understand them. Should Motorola, the Home Office or any other interested parties disagree with our understanding and assessment of relevant facts, we invite them to make reasoned submissions in response to this provisional decision report.

³⁵ CMA (2021), [Final report and decision on a market investigation reference](#).

³⁶ Motorola also opted not to respond to the Issues Relating to Benchmarking working paper.

³⁷ For example: [Motorola's response to the Profitability Modelling and Result and Cost of Capital Working Papers](#), 20 May 2022, paragraph 46; Motorola's Response to the Airwave Network Contracts Working Paper, 20 May 2022, paragraph 1; [Motorola's response to the Potential Remedies Working Paper](#), 30 May 2022, paragraph 9.

- 1.28 Further, throughout the market investigation to date, we have seen disagreements between Motorola and the Home Office relating to various material aspects of the evidence that we received from them, including in relation to:
- (a) The interpretation of certain provisions in the Airwave contracts and Motorola's and the Home Office's respective obligations in the delivery of the ESMCP programme.
 - (b) The extent to which the Kodiak MCPTT application meets relevant specifications and/or has been delivered on time.
 - (c) The extent to which the Home Office has significantly changed its requirements in relation to the Lot 2 contract.
- 1.29 In seeking to reconcile at times opposing representations of facts and interpretations of evidence, we have not favoured the views of one interested party over those of any other. As is the case in any investigation, we note that some of the views that we have received may be affected by the incentives of the parties that provided them.
- 1.30 We have in such circumstances sought to establish the correct factual position using other sources or through our own analysis (e.g. our own analysis of contractual terms, reviews of relevant internal documents and testimony from other parties), sought to clarify the differences and understand the significance of different interpretations and the possible motivations behind them and considered the extent to which views provided to us are consistent with other evidence that we have gathered during our investigation.
- 1.31 Given the nature of the issues under consideration, much of the evidence that we have obtained has fallen into one of two categories: (i) financial information; and (ii) internal documents obtained from relevant parties, including emails, memos, strategy documents, expert advice and opinion prepared in the normal course of business (i.e. prepared before we consulted on the market investigation). In this context, we have, where appropriate, placed weight on contemporaneous documents obtained from Motorola and the Home Office to establish the facts that are pertinent to this investigation.
- 1.32 Throughout this provisional decision report, where relevant to the focus of our investigation, we set out the diverging views of Motorola and the Home Office alongside our assessment.

Approach to assessment and our theories of harm

- 1.33 In our issues statement³⁸ we set out two high-level hypotheses (or ‘theories of harm’) to test during our investigation. These represented our early thinking about the issues to consider and test. There were:
- (a) The unilateral market power of Airwave Solutions (as the supplier of the Airwave Network services).
 - (b) The dual role of Motorola (as the owner of the supplier of the Airwave Network services (Airwave Solutions) and a key supplier in the delivery of the intended replacement network, ESN).
- 1.34 These theories of harm provided a useful framework for our evidence gathering and early analysis, and they evolved as we have gathered more evidence and our work has progressed. The structure of this provisional decision report, therefore, reflects our current approach to the assessment of competition in the relevant market.

Structure of this document

- 1.35 The structure of this provisional decision report is as follows. We begin by setting our understanding of the relevant industry background (section 2). In section 3 we set out our assessment of the scope for competition in the supply of relevant services and our proposed approach to market definition. Section 4 contains our assessment of whether there are features of the market which distort competition, focusing on whether there are such features which affect the supply of the Airwave Network and services. In section 5 we consider whether there are also features relating to ESN and Motorola’s dual role, and the transition of users from one network to another, that have a distortive effect. Section 6 sets out our provisional assessment of market outcomes – our profitability analysis. In section 7 we explain our provisional decision that there is an AEC in the relevant market and section 8 sets out our proposed remedies. Supporting material and analysis is in Appendices A-K.

Next steps in the investigation

- 1.36 This document, together with its appendices, constitutes our provisional decision on AEC and on remedies. We invite responses to it by 5pm on 9 November 2022.
- 1.37 Following consideration of responses to this provisional decision report and further hearings with relevant parties, as well as any further evidence that we may

³⁸ [Issues Statement](#), 13 December 2021.

receive, we will publish our final report. If appropriate, we may consult further on relevant matters before that final stage.

2. INDUSTRY BACKGROUND

- 2.1 This section first sets out the characteristics of the demand for, and supply of, communications network services for public safety in Great Britain and how it has developed since 2000, starting with a description of:
- (a) The distinct communication requirements of the emergency services;
 - (b) the business of the single supplier of such services, Airwave Solutions, including its revenues, assets and service obligations.
- 2.2 It then covers how the market has developed since the contract that led to the creation of the Airwave Network was awarded in 2000, including:
- (a) How the procurement was conducted;
 - (b) how other emergency services users became customers of Airwave Solutions;
 - (c) a description of the ensuing contractual relationships;
 - (d) the government's decision to procure a replacement for the Airwave Network;
 - (e) developments since 2015, including negotiations that have taken place; and
 - (f) the evolution of relevant technology.

The characteristics of demand and supply

Overview

- 2.3 This market investigation is concerned with the communications needs of emergency services staff operating in the field in Great Britain.
- 2.4 There are five distinct categories of customers, the first being by far the largest one in terms of numbers of individual users:
- (a) 44 police authorities/services;
 - (b) 50 fire and rescue authorities/services;
 - (c) 14 ambulance trusts;
 - (d) The National Police Air Services; and
 - (e) Organisations that need to communicate with the emergency services in case of an emergency, also referred to as 'Sharer' organisations. There are around 165 such organisations, including Highways England, HM Revenue &

Customs (HMRC), Border Force, local authorities, the Maritime and Coastguard Agency and the Royal National Lifeboat Institute.³⁹

- 2.5 In order to communicate with each other and with staff at base (ie in control rooms), emergency services staff require a telecommunications solution that provides high coverage, high security and high resilience. Broadly speaking, the unique needs of emergency services users can be described as follows:
- (a) Essential communication, on which lives depend, calling for a service that is reliable 24/7, 365 days a year.
 - (b) The need for emergency services staff to be able to communicate across regional boundaries and organisations (eg across different local police forces; ambulance trusts)⁴⁰ in order to respond rapidly, effectively and efficiently to emergency situations.
 - (c) Extensive coverage to include remote and hard to reach locations, such as remote rural areas in Scotland, the London Underground and aircrafts in flight.
 - (d) Unique 'mission critical' communications needs, including high speed call set up, emergency button, encryption,⁴¹ group calls and ambient listening.

- 2.6 There are however some distinctions between the needs, and contracted requirements, of the various customer groups, for example:
- (a) The requirements of users regarding coverage differ. While the police and ambulance services require the network to have a high coverage of major roads, the fire and rescue services also require high coverage of land as they often need to drive off-road.⁴²
 - (b) While the police have contracted just for network services, the ambulance and fire and rescue services have contracted for an end-to-end service which includes provision of terminals, radios and control rooms.⁴³
 - (c) Air to ground coverage is a critical operational need of the ambulance services and police but not the fire and rescue services.⁴⁴

³⁹ As detailed in a list of sharer organisations provided by Motorola.

⁴⁰ This is less the case for fire services, which in principle could satisfy their needs through a local service. See NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730), paragraph 1.30.

⁴¹ Committee of Public Accounts (2002), [Public Private Partnerships: Airwave](#) (HC783), paragraph 26. This is not a requirement of the fire services.

⁴² As referenced by Motorola during the CMA's site visit on 30 November 2021.

⁴³ As referenced by Motorola during the CMA's site visit on 30 November 2021.

⁴⁴ As referenced by Motorola during the CMA's site visit on 30 November 2021.

- 2.7 Given the requirements set out above, which are very distinct from those of other telecoms customers, the decision was made in the early 1990s that the best way to meet customer demand was through a single, national network (which would later be named the Airwave Network).⁴⁵ This would be built under a private finance initiative (PFI) procurement process as a way of engendering innovation by allowing the private sector to develop solutions for the new service. It was also decided to adopt a new technology that had been developed specifically for public safety needs but was still in the early stages of development: LMR technology using digital terrestrial trunked radio (TETRA)⁴⁶ standards.
- 2.8 Following a multi-stage procurement process, BT Telecommunications plc (BT), through its Wireless Division, was awarded the contract (the PFI Agreement), which was expected to be in place for 19 years.
- 2.9 It was anticipated that the cost of the project to the Home Office and police forces over its 19-year term would be £1.47 billion,⁴⁷ and that the cost of building the network would be £500 million. The annual charge to be paid by the Home Office and the police forces who would initially use the network was established through negotiations. This resulted in a price that allowed a return of around 17% over the 19-year period of the PFI Agreement,⁴⁸ to take account of the project risk being taken by BT.⁴⁹
- 2.10 Once built, the network would be used to provide services to customers under separate long term service contracts (discussed further later in this section, and in Appendix C). At the time of the PFI procurement, the fire services and ambulance services were still considering their options. In negotiating a deal, BT assumed that they (and potentially other public safety organisations) would join the network and estimated that additional revenues of between £1.8 million and £5.5 million a year might result (the benefit which was not to be shared with the Home Office, as BT considered that it was taking all the risk on this aspect of the deal).⁵⁰
- 2.11 BT demerged its Wireless Division, including the activities relating to the PFI Agreement, into O2 plc in 2001. Also in 2001, the activities to deliver the PFI Agreement were incorporated into a subsidiary of O2, called Airwave mmO2

⁴⁵ Local and regional options were discounted for various economic and technical reasons. See NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730), paragraph 1.6.

⁴⁶ LMR systems typically consist of handheld portable radios, mobile radios, base stations, a network, and repeaters. The open standard for digital trunked radio technology was developed by public safety and two-way radio industry experts together with the European Telecommunications Standards Institute (ETSI) to provide secure, reliable and instant voice and data communications in mission critical, operations critical and business critical environments (Source: Motorola Solutions webpage, '[What is TETRA](#)' ?)

⁴⁷ NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730), paragraph 3.

⁴⁸ We note that 17% was the figure stated in the evidence before the Public Accounts Committee; the NAO reported that this was pre-finance and tax costs. The model we have seen contains differing rates of return: real, post-tax [3%] [10%-15%], nominal pre-tax [3%] [15%-20%], nominal post-tax [3%] [15%-20%].

⁴⁹ Committee of Public Accounts (2002), [Public Private Partnerships: Airwave](#) (HC783), paragraphs 123-125.

⁵⁰ NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730), paragraph 11.

Limited.⁵¹ In 2006 O2 was sold to Telefonica. In 2007 Telefonica sold Airwave Solutions (the latest name for the company delivering the PFI Agreement) to Guardian Digital Communications Limited (GDCL), a company controlled by Macquarie Communications Infrastructure Group, a Macquarie fund listed on the Australian Stock Exchange, and Macquarie European Infrastructure Fund II, a Macquarie unlisted investment fund (collectively referred to in this provisional decision report as 'Macquarie').⁵²

- 2.12 The company that owns and operates the Airwave Network had a number of name changes after 2001.⁵³ It is now named Airwave Solutions and is ultimately owned by Motorola Solutions, Inc., which acquired it from Macquarie in 2016.
- 2.13 Airwave Solutions provides communications network services to the individual local police services via service contracts with each local police constabulary, while its general obligations are set within the PFI Agreement. Services to the Department of Health and Social Care (DHSC) and the Scottish Ambulance Service Board are provided under two separate agreements. Services to fire and rescue services are provided under one contract that is referred to as Firelink (and in this report we refer collectively to the contracts under which services are provided to the emergency services in Great Britain as the 'Blue Light Contracts'). Each Sharer organisation has its own contract. These contracts are discussed in more detail later in this section and in Appendix C.
- 2.14 Airwave Solutions operates under spectrum licences⁵⁴ issued by the Office of Communications (Ofcom) that restrict it to offering services on the Airwave Network to the emergency services in Great Britain (ie police, fire and ambulances services, referred to as blue light customers).
- 2.15 Airwave Solutions can also offer network services to designated 'Sharer' organisations, ie other organisations that are involved in public safety related activities and have a need to communicate with the blue light customers in emergency situations, but only under certain conditions.
- 2.16 Sharer organisations can only have access to the network if they have been approved by Ofcom and obtained security clearance from the Home Office for a sub-licence. Ofcom may also seek advice and guidance in relation to granting approval to potential Sharer organisations from the Emergency Services Sharer

⁵¹ [Motorola's response to the CMA's market investigation reference](#), paragraph 81.

⁵² Office of Fair Trading (2007), [Completed acquisition by Macquarie European Infrastructure Fund II and Macquarie Communications Infrastructure Group \(via Guardian Digital Communications Limited\) of Airwave Safety Communications Limited](#).

⁵³ [Motorola's response to the CMA's market investigation reference](#), paragraph 81.

⁵⁴ The use of radiocommunications equipment in the UK requires a licence from Ofcom issued under the Wireless Telegraphy Act 2006 (unless the use of such equipment is exempt from the requirement to hold a licence). Airwave Solutions holds various licences which authorise Airwave Solutions to provide electronic communications services over its network using radio frequencies that have been allocated for emergency services applications and assigned to Airwave Solutions by Ofcom.

Advisory Group which is comprised of representatives from the police, fire and ambulance services. The list of sharer organisations is controlled and managed by Ofcom.⁵⁵

2.17 Ofcom sets the following criteria for inclusion on the list.

The Sharer organisation must:

1. respond to emergencies;
2. be involved in emergency situations reasonably frequently;
3. be civilian, or required to respond to civilian emergencies; and
4. require interaction with those who respond to emergencies (the purpose of being on the Airwave service is interaction by way of instant direct communication with the emergency services on the ground).⁵⁶

Airwave Solutions' revenues

Main sources of revenue

2.18 In total Airwave Solutions generated £[X] million in revenue in 2021, £[X] million of which came from a number of sources:⁵⁷

- (a) The majority (£[X] million) came from services provided to the police. These charges are made up of two components. First, £[X] million was paid by the Home Office to provide police constabularies with access to the Airwave Network (referred to as 'core services'). Second, further charges are payable by individual police constabularies if they choose to purchase additional services from Airwave Solutions (referred to as 'menu services'). These totalled £[X] million in 2021.
- (b) Total revenue from ambulance services across Great Britain totalled £[X] million in 2021. £[X] million of this was for access to the Airwave Network (referred to as 'Bundle 1') as core services. Under their contracts, ambulance services receive a managed service, which provides them with control rooms, air-to-ground, vehicle installation, radio terminals and a service desk (referred to as 'Bundle 2'). These services accounted for £[X] million.⁵⁸

⁵⁵ The current list is available on Ofcom's website, here: [List of Sharer Organisations \(updated January 2020\)](#).

⁵⁶ Ofcom's website provides a guide to the [Airwave Sharers List Process](#).

⁵⁷ With the remainder coming from other sources including interworking, Pronto and service credits.

⁵⁸ We understand that Motorola is currently in discussions with DHSC with regard to the ambulance users continuing to require access to the Airwave Network after 2023. This would effectively reduce the existing Bundle 2 service charges, the majority of which the Department of Health wishes to cease. An estimate of

- (c) Total revenue from fire and rescue services was £[X] million.
- (d) The revenue from contracts with Sharer organisations was £[X] million in 2021.⁵⁹

Revenue from product sales and special events

- 2.19 In addition to recurring revenues earned under the core and menu services, Airwave Solutions also earned £[X] million in 2021 from other purchases including for radio terminals, batteries and chargers as well as the purchase of special events, for additional network capacity and coverage (including survey, design, site builds and upgrades), and event support (including labour and testing). £[X] million arose from purchases made by the police, ambulance and fire and rescue services and £[X] million arose from purchases made by Sharer organisations.
- 2.20 Examples of special events include sporting events, royal events, festivals, ceremonies/memorials and other events open to the public (eg the Notting Hill Carnival, the Epsom Derby, Glastonbury, National Armed Forces Day, New Year's Eve in London, Farnborough International Airshow and Silverstone). All the revenue earned from these events is earned under the existing Airwave contracts. Total revenues for special events over the four-year period 2018-2021 amounted to £[X] million, of which £[X] million arose from services provided for the G7 in Cornwall in June 2021 and £[X] million arose from services provided for the COP26 in October/November 2021. With the exception of one small ambulance event in October 2018, all services for the non-repeating events in 2018-2021 were provided to the police.⁶⁰
- 2.21 The most recent example of a special event involving the Airwave Network is the funeral of Her Majesty, Queen Elizabeth II. Motorola has drawn to our attention the role Airwave Solutions played in that event and the gratitude indicated to it by the Home Office.

Airwave Solutions' key assets⁶¹

- 2.22 The assets in Airwave Solutions' business comprise two key types: infrastructure (physical) assets, and licences to use spectrum to deliver the service. Airwave Solutions also has business assets in the form of agreements to lease or access base station sites, switch sites and buildings.

the continuing access fees relating to terminals provided under Bundle 2 is approximately £[X] million per annum from 2024 onwards.

⁵⁹ Motorola's response to RFI on revenue and other financial information dated 26 May 2022.

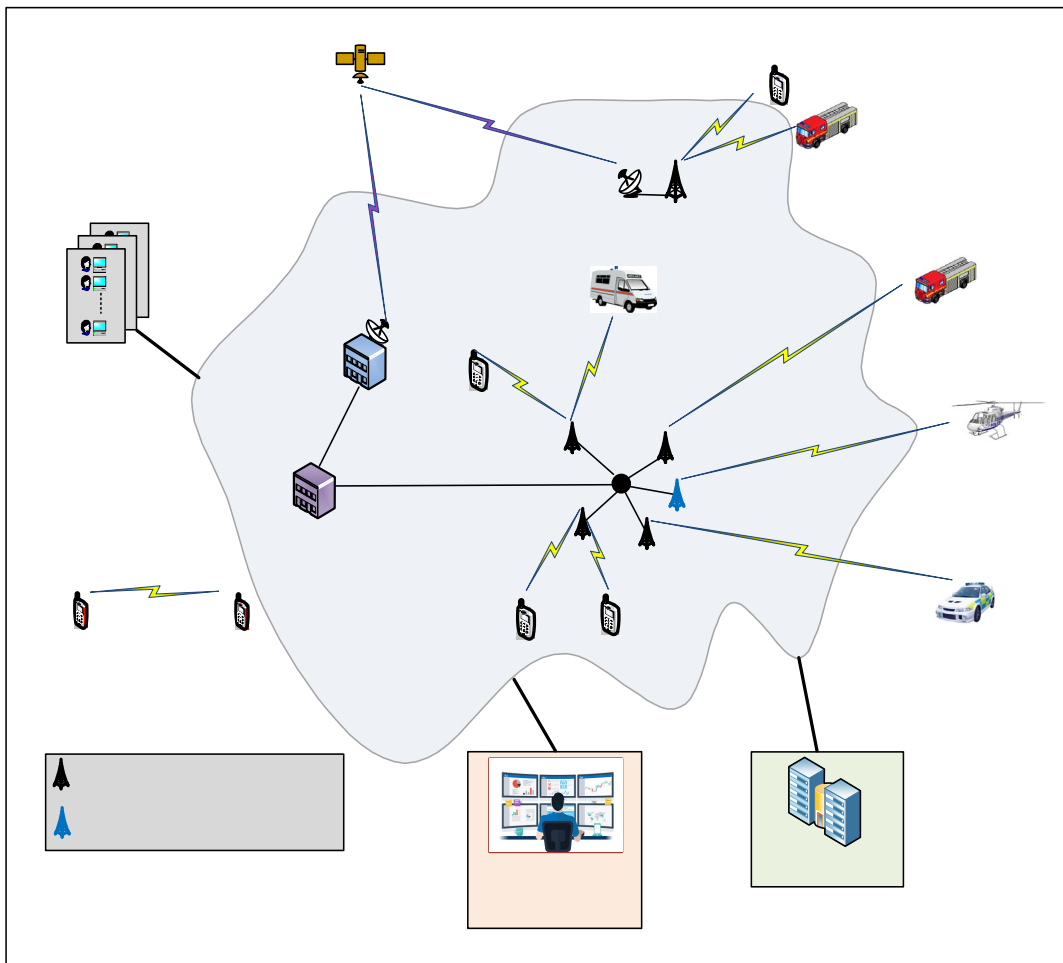
⁶⁰ Motorola's Response to Q12 of the financial RFI dated 16 February 2022.

⁶¹ The main source of this information is a 2015 technical due diligence report commissioned by Motorola before its acquisition of Airwave Solutions ('technical due diligence report').

Physical infrastructure

2.23 The Airwave Network is a closed LMR network with a fully dedicated infrastructure, the main elements of which are depicted in Figure 2.1: below.

Figure 2.1: **Overview of the Airwave Network**



Source: IAP

2.24 The key physical assets making up the Airwave Network include:

- (a) The transmission network;
- (b) nine regional switching centres;
- (c) over 3,800 radio transmitters located across the country that provide the TETRA radio voice and data coverage;
- (d) two live network management centres and a back-up network management centre;
- (e) integrated communications control systems (ICCS), ie software that enables control room personnel to receive urgent phone calls from people in emergency situations (eg 999 calls) and to communicate with staff; and

- (f) communications control interfaces, ie the interfaces that allow the integration of ICCS, private telephony networks and voice recording systems.⁶²

- 2.25 The Airwave Network has been described⁶³ as the only one of its kind in Great Britain with over 3,800 base stations, including 1,200 base stations in difficult to access and remote areas and a fully duplicated network management centre (NMC) with an additional fall-back dark site in place. It delivers a fully redundant and reliable service to its users (24 hours a day, 365 days a year) with an availability of 99.95% and a level of coverage equating to 99% of Great Britain's landmass.
- 2.26 The network has been designed to be unique and resilient by providing an assured level of coverage through back-up generators and resilient design. It includes 1,248 high resilience base stations across the country and eight live switches covering individual geographical locations. The switching infrastructure is required to have full equipment redundancy by replicating each live cluster with a hot standby cluster.
- 2.27 Motorola, as the TETRA equipment developer member of the consortium led by BT,⁶⁴ provided and continues to provide TETRA equipment, and software that enables that equipment to operate as a network, to Airwave Solutions (eg proprietary interfaces to control rooms, switches, and base station equipment⁶⁵). The rest of Motorola's supply of equipment to Airwave Solutions resulted in transfer charges of £[redacted] million, £[redacted] million and £[redacted] million in 2018, 2019 and 2020 respectively.⁶⁶ In 2021, around [redacted]% of Airwave Solutions' capital expenditure on the Airwave Network (or £[redacted] million) was sourced from the rest of Motorola.⁶⁷ Transfer charges between the rest of Motorola and Airwave Solutions are discussed further in Appendix H.
- 2.28 Motorola told us that the Airwave Network was built and set up to last for the duration of the original period of the PFI Agreement and that a significant amount of investment will be needed over the next few years to 'refresh' the network, with some of the equipment now reaching obsolescence. Specific issues that will need to be addressed include that:
- (a) Some spares are no longer available and some components cannot be repaired;

⁶² Draft note from Motorola to service users, 14 August 2018.

⁶³ Technical due diligence report.

⁶⁴ NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730), Figure 9.

⁶⁵ Home Office presentation slides, 1 December 2021 and further information provided by the Home Office on 14 July 2022.

⁶⁶ Motorola's response to Q18 of Transfer Charges RFI dated 12 April 2022.

⁶⁷ Source: Motorola's response to Q18 of Transfer Charges RFI dated 12 April 2022.

- (b) the antivirus technology currently in use will be retired in 2022, and Motorola considers that support for Windows 7 used in the system is also at risk by this time;
- (c) access to spectrum in the 1.4 GHz band will be withdrawn in 2024;
- (d) BT has announced it will cease to offer leased line services (also known as 'megastreams') in November 2025; and ⁶⁸
- (e) [redacted].⁶⁹

Spectrum

2.29 Airwave Solutions uses three separate spectrum blocks to deliver its services (referred to as blocks 1, 2 and 3):

- (a) Block 1 is described as the EU harmonised spectrum for Public Protection and Disaster Relief (PPDR)⁷⁰ and was originally licensed by Ofcom up to 31 December 2020, ie the end date was broadly aligned with the expected end of the last of the police service contracts and therefore the PFI Agreement. The use of the spectrum is restricted to Sharer Organisations and for public safety purposes only.
- (b) Block 2 was granted to Airwave Solutions by way of a trade of spectrum from the DoH on 14 September 2010 and expires on expiry of all of the contracts that Airwave Solutions has with the police, ambulance and fire and rescue services. The spectrum is used for all three emergency services and public safety only and is managed by the DHSC for public protection and disaster relief (PPDR).
- (c) Block 3 is leased from Arqiva and Airwave Solutions' right to use this spectrum continues indefinitely unless revoked by Ofcom or terminated by Airwave Solutions.⁷¹

2.30 In addition, Airwave Solutions holds spectrum licences (in the 1.4 GHz band) for a number of point-to-point links (also referred to as fixed links or microwave links)⁷²

⁶⁸ Presentation from Motorola during the CMA's site visit on 30 November 2021.

⁶⁹ [redacted].

⁷⁰ Emergency services throughout Europe use a part of 380-400MHz spectrum for voice communications. That band is a dedicated and harmonised spectrum band set aside for the exclusive use of the emergency services. (source: the Tetra and Critical Communications Association (TCCA) (2013), '[Harmonised spectrum for Critical Communications: An Executive Summary](#)').

⁷¹ Internal Motorola document, and the financial due diligence report.

⁷² Ofcom, [Fixed terrestrial links](#) and Ofcom (2017), [Fixed Wireless Spectrum Strategy: Consultation on proposed next steps to enable future uses of fixed wireless links](#).

and has gained access to individual channels on a case-by-case basis from [redacted] when covering special events.

- 2.31 In October 2018, following the signing of the Airwave Extension Term Sheet with the Home Office on 21 September 2018, Airwave Solutions applied for the extension of its three key licences to 31 December 2024 (allowing for 24 months of de-commissioning and wind-down activity following the end of the extension). It also noted that Ofcom was starting the process to reallocate use of the 1.4 GHz band, but that existing links could remain operating until further notice and asked Ofcom to confirm that Airwave's licensed use would continue until 31 December 2024 to align with the requested variations to its main licences.⁷³ As part of its approval process, Ofcom sought confirmation from the Home Office that it supported the application.⁷⁴

Service level agreements

- 2.32 Given the criticality of the Airwave Network services, the PFI Agreement specifies 'service availability' requirements for all police services, defined as the percentage of 'successful communications' in the following circumstances:
- (a) within a force area, at least 99.80%;
 - (b) for calls from a user outside the 'home force area' to the home force area, at least 99.96%;
 - (c) in 'fall-back mode', in which users are communicating via a base station with other members of the same Talk Group, at least 99.98%.⁷⁵
- 2.33 In addition, the service contracts with the police, ambulance services and fire and rescue services include detailed provision for levels of service to be delivered, and for 'service credits' (discounts) to be applied in the case of these being missed.⁷⁶
- 2.34 The service contracts set out performance targets for different uses (eg radio voice services, communications control interface services, disaster recovery services). For example, for the police services, voice call availability must be 99.74% or a service credit will be applied. The contracts set out 'severity' ratings for failure to meet each target, and service credits are calculated according to this weighting, and other relevant factors.

⁷³ Letter from Motorola to Ofcom, 11 October 2018.

⁷⁴ Motorola internal email, 17 December 2018.

⁷⁵ The PFI Agreement. [redacted].

⁷⁶ See, for example, [redacted] of Avon and Somerset Police's contract.

- 2.35 In general, the Airwave Network is considered to be a highly resilient network, and when the National Audit Office (NAO) reported in 2016 it noted that availability had averaged 99.9% between 2010 and the date of its review.⁷⁷
- 2.36 Consistent with the NAO's view, over the ten years to the end of 2020, Airwave has paid 0.07% of revenues back to the three main emergency service users in service credits.⁷⁸
- 2.37 The quality of the services Airwave Solutions provides using the Airwave Network is therefore not generally in issue.⁷⁹ More recently though, the Ambulance Radio Programme has expressed some concerns:
- 2.38 With specific regard to Bundle 1 Services, over the full term of the contract the service has been delivered effectively and has provided a secure and broadly consistent level of service. However, in more recent years, compounded in part by delays in the introduction of ESN, this part of the solution has shown increasing signs of fragility. The asset base is arguably beyond 'end-of-life' status.
- 2.39 In terms of Bundle 2 Services, it is a broadly similar picture. Airwave Solutions (and its key subcontractor) has shown an increasing reluctance to maintain the existing infrastructure and has actively sought to dilute the existing liability and service credit regime when negotiating variations or extensions. In some areas, equipment and solutions (and the accompanying skills to maintain these solutions) has become scarce.⁸⁰

Development of the market

Building of the customer base

The police contracts

- 2.40 Before the procurement of the Airwave Network, local emergency services contracted for their own radio communications systems. Reviews in England and Wales, and in Scotland, concluded that the communications network services for both police and fire and rescue services did not meet requirements. Key failings

⁷⁷ NAO (2016), [Upgrading emergency service communications: the Emergency Services Network](#) (HC 627), page 7.

⁷⁸ Motorola's responses to Q4 of the RFI dated 30 July 2021, and Q9 of the RFI dated 13 December 2021.

⁷⁹ And in our provisional assessment of any remedy that we may impose where we provisionally find that there is an AEC, we take into account the quality and safety of the service (see section 8 of this provisional decision report in particular).

⁸⁰ ARP response to Q12 of the RFI dated 17 December 2021.

identified included that the systems were insecure (external parties could 'listen in'), and often became congested so that officers could not make calls.⁸¹

- 2.41 In 1993, the Home Office concluded that a new system was required, and that it should be procured on a national basis.⁸² At this time, it was planned that the new system would also support the fire and rescue services but, in 1996, the fire and rescue services withdrew from the programme on the basis that the requirements being specified were more complex than they needed.⁸³ The ambulance services did not engage in any aspect of the procurement process, on the basis that at that time they had no need for a new radio system.⁸⁴
- 2.42 The Home Office issued a Project for Procurement for the PFI Agreement in the OJEC in January 1996.⁸⁵
- 2.43 Although three consortia formed to bid for the PFI Agreement following publication of the OJEC Notice, by April 1997 only one bidder remained, led by BT.⁸⁶
- 2.44 After considering options, the Home Office (in consultation with HM Treasury, the PFI Panel and the Association of Chief Police Officers) decided to proceed to negotiate the price to be paid with the single bidder.⁸⁷
- 2.45 The PFI Agreement was executed on 29 February 2000⁸⁸ and the roll-out to police services started in September 2001, with the last constabularies to join the services being the Northern Constabulary, which executed a services contract in June 2001 and achieved 'Ready for Service' status in May 2005, and the British Transport Police, which contracted in March 2006 (in this latter case, the contract was 'deemed to have commenced' in August 2002).⁸⁹
- 2.46 The requirements of the police users changed significantly over the course of the PFI Agreement, with changes being implemented through a series of change control notices, as provided for in the original contract. The net effect of the change control notices was estimated by the Home Office to amount to £[<] million and account for [<]% of the projected life cost of the Airwave Network to December 2019 for the Home Office and the police forces (affecting both the 'core'

⁸¹ NAO (2002), [Public Private Partnerships: Airwave \(HC730\)](#), 2002, Figure 1, based on information provided by the Home Office. See Appendix B for more detail on the Airwave and ESN procurements.

⁸² NAO (2002), [Public Private Partnerships: Airwave \(HC730\)](#), 2002, paragraph 1.

⁸³ NAO (2002), [Public Private Partnerships: Airwave \(HC730\)](#), 2002, paragraph 1.

⁸⁴ Committee of Public Accounts (2002), [Public Private Partnerships: Airwave \(HC 783\)](#), Minutes of Evidence, Questions 3 and 4.

⁸⁵ OJEC Notice, 23 January 1996.

⁸⁶ NAO (2002), [Public Private Partnerships: Airwave \(HC730\)](#), Appendix 1.

⁸⁷ NAO (2002), [Public Private Partnerships: Airwave \(HC730\)](#), paragraph 2.15.

⁸⁸ The PFI Agreement.

⁸⁹ Motorola's response to Q3 of the RFI dated 8 November 2021.

deliverables under the PFI Agreement and ‘menu’ deliverables provided for in that arrangement and purchased by individual services).⁹⁰

The ambulance services contract procurements

- 2.47 The Cabinet Office ran a separate competitive tender process for a new communications system for ambulance services in England and Wales. However, competition was limited because of the significant cost of putting in place a second, competing national network and the lack of available radio spectrum.⁹¹ The supplier of the Airwave Network won the contracts for both Lot 1 (the radio network service) and Lot 2 (radio terminals, control room equipment and mobile data services) and an agreement (referred to as the Ambulance Main Agreement) was signed in July 2005.
- 2.48 In July 2006, the Scottish Ambulance Service Board entered into a separate agreement (referred to as the Scottish Ambulance ARRP Agreement) under which the Scottish Ambulance Service Trust may buy services from the supplier of the Airwave Network. Scottish ambulance services started to use the Airwave Network in August 2010.

The Fire and Rescue service procurement

- 2.49 In relation to the procurement of services for the fire and rescue Services, the Department for Communities and Local Government published a Contract Notice in the OJEC on 29 October 2002. Longlisted bidders were invited to submit a proposal on 31 July 2003, and the supplier of the Airwave Network was invited to submit a best and final offer on 18 March 2005.⁹²
- 2.50 After submitting a revised final offer on 31 August 2005, the Department for Communities and Local Government notified the supplier of the Airwave Network that it intended to award the contract to it on 24 February 2006.⁹³

Key characteristics of the various Airwave customer contracts

- 2.51 Appendix [C] describes in detail the various contractual arrangements which underpin the commercial relationships that the various customer groups have entered into with Airwave Solutions. In this section, we first explain the scope of the various contracts, how they relate to each other to the extent that they do and what key commercial terms they cover. Within this analysis we draw out the main differences between these key commercial terms.

⁹⁰ Internal Home Office email dated 3 November 2016.

⁹¹ ARP response to Q3 of the RFI dated 17 December 2021.

⁹² Firelink Main Agreement, Recitals.

⁹³ Firelink Main Agreement, Recitals.

The PFI Agreement

- 2.52 The PFI Agreement sets out the agreed rights and obligations imposed on the parties, while the schedules go into detail on matters such as the services contracted for, the charging structure for those services, benchmarking and termination.
- 2.53 The PFI Agreement was initially envisaged as an overall framework for an estimated period of up to 19 years (driven by the 15-year service contracts, which had different commencement dates, and the time needed to build and decommission the network at the end of the service contracts, with the service being fully operational by 2003). The applicable procurement regulations⁹⁴ had the effect of setting an expectation, by the OJEC notice, that the contract would not be extended.⁹⁵ Unlike the current procurement regulations, the applicable procurement regulations did not specify whether it was necessary for any possibility of an extension to be included in the OJEC notice. However, the OJEC notice specifically provided that the service would be completed after the 15-year period (and what emerged from the procurement process was the PFI Agreement which provided for a fixed-term arrangement that would end at a point to be determined in 2019 or 2020 without terms relating to or contemplating its extension).
- 2.54 No services are directly provided under the PFI Agreement. Rather, the agreement governs the terms that are set out in the customer service contracts ('Services Contracts' or, in this provisional decision report, the 'Police Service Contracts'). The Police Service Contracts are the individual contracts between Airwave Solutions and relevant police forces, concerning access to the Airwave Network, and charges for such access. The PFI Agreement contains a 'Model Services Contract' setting out standard terms for the Services Contracts into which individual police forces enter.
- 2.55 The PFI Agreement sets out the structure of charges as being comprised of a core service charge, which is payable for access to the Airwave Network, and menu service charges which are services users can elect to purchase from Airwave Solutions. The contract specifies the initial level of core service and menu service charges and contains provisions for these to be adjusted annually in line with inflation according to set formulae. Such charges are subject to benchmarking.

⁹⁴ OJEC (1002), [COUNCIL DIRECTIVE 92/50/EEC.pdf \(legislation.gov.uk\)](#); and [The Public Services Contracts Regulations 1993 \(legislation.gov.uk\)](#)

⁹⁵ OJEC Notice, 23 January 1996.

The Police Service Contracts

- 2.56 There are Police Service Contracts in place for each of the various police services in England, Wales and Scotland. These are based on the model terms in the PFI Agreement.
- 2.57 The start dates of the Police Service Contracts vary. The earliest contract in place is understood to be from 29 June 2000, four months after the PFI Agreement became effective.⁹⁶ The duration of the Police Services Contracts was 15 years from the Ready For Service (RFS) date they contain.⁹⁷ The service contract that originally drove the end date of the PFI Agreement⁹⁸ was the Northern Constabulary contract, which was due to end on 9 May 2020.
- 2.58 The core services to be provided to the relevant police force and any menu services that may be selected by it are derived from the PFI Agreement. The terms of the Police Service Contracts are broadly similar to the terms of that agreement. As a result, if the PFI Agreement is terminated (in accordance with the terms set out therein), the Police Service Contracts will automatically be terminated without notice to the parties.
- 2.59 The charging structure of the core services and menu services is that set out in the PFI Agreement. There is an initial charge for the core services and menu services, which is then adjusted on an annual basis, in line with inflation and according to set formulae.

The ambulance services contracts

- 2.60 The Ambulance Main Agreement (Ambulance Contract) was entered into by the DoH and Airwave Solutions on 19 July 2005.⁹⁹ It covers ambulance services in England and Wales.¹⁰⁰ The Scottish Ambulance ARRPP Agreement (SAS Contract) is a separate customer contract to the Ambulance Contract, covering ambulance services in Scotland.¹⁰¹ The SAS Contract was entered into by the Scottish Ambulance Service Board and Airwave Solutions on 18 July 2006, on terms near identical to those of the Ambulance Contract. Where we refer to the 'Authority' in

⁹⁶ However, we understand that contracts signed before March 2001 were considered 'incomplete', so were amended and re-executed after that date. The first 'complete' contracts were signed by West Mercia and Leicestershire police services, on 26 March 2001. Source: information supplied by the Home Office on 14 July 2022.

⁹⁷ The earliest 'Ready for Service' date was September 2001, for Lancashire police service.

⁹⁸ Before the negotiations that took place in early 2016. See Appendices C and D.

⁹⁹ 'AARP Project Agreement', the project agreement between the Secretary of State for Health and Airwave 02 Limited, 19 July 2005.

¹⁰⁰ Albeit that the 'Territory' of the Contract is England whereas Wales is outside the Territory. However, the Ambulance Contract sets out how services may be provided – on request by the Authority – to the Welsh Ambulance Services NHS Trust (WAST) and WAST is included in the definition of Authority Service Recipients.

¹⁰¹ 'ARRP Project Agreement', the project agreement between the Scottish Ambulance Service Board and Airwave 02 Limited, 18 July 2006.

the context of these contracts we mean the DoH and/or the Scottish Ambulance Service Board as the case may be.

- 2.61 The duration of the Ambulance Contract is stated as a period of ten years, with scope for the Authority, at its sole discretion, to extend the contract in any service area for up to five years, with a one-year extension being the minimum extended term. Following an amendment via a Change Control Notice (CCN), 12 months' notice was required if the option to extend was to be exercised.
- 2.62 The Ambulance Contract stipulates that the Authority pays charges for the network services on a monthly basis. Further details regarding the charges are provided in schedules to the contract. The charges under the Ambulance Contract are subject to benchmarking.

The fire and rescue services contract

- 2.63 The Firelink Project Agreement is a contract with the Home Office under which Airwave Solutions agrees to provide, and the Home Office agrees to pay for, Airwave Network services to each 'Qualifying Fire Authority.' Unlike with police forces, there are no separate services contracts with each Qualifying Fire Authority.¹⁰²
- 2.64 The Firelink Project Agreement commenced on 29 March 2006, to continue for a period of ten years and nine months. The Home Office has the capability, at its sole discretion, to extend the contract for up to 36 months (a major extension), subject to such extension being a minimum of 12 months, with at least 24 months' notice. In addition, under the Firelink Project Agreement, the Home Office had the capability at its sole discretion to extend the contract with minor extensions for one or more periods which do not exceed, in the aggregate, 12 months, with at least one months' notice. The Home Office's extension capabilities were amended and extended in 2016 (see Appendix C).
- 2.65 Under the Firelink Project Agreement there are two types of charges payable to Airwave Solutions – capital charges and service fees, which are calculated in accordance with a specified formula. Capital charges include one-off payments relating to the achievement by Airwave Solutions of certain milestones and subsequent service fees are payable after the milestone is achieved, as well as until the Firelink Project Agreement expires or is terminated.

¹⁰² The Firelink Project Agreement contains a number of provisions that reflect this contractual structure. For example, that Qualifying Fire Authorities cannot enter into agreements or vary the contract on the Home Office's behalf. [Firelink Project Agreement](#)

The Sharer contracts

- 2.66 The majority of Sharer organisations access the Airwave Network on standard terms and conditions which are not typically negotiated. Sharer organisations include (but are not limited to) government departments, local authorities, and energy/utility suppliers. Sharer organisations can choose between Airwave Direct, a managed service comprised of network access and provision of a managed terminal service, and Airwave Access where only network access is provided.¹⁰³
- 2.67 The standard-form Sharer contract has a minimum duration of 2.5 years, significantly shorter than the Blue Light Contracts.

Summary of distinctive features and relationships between the contracts

- 2.68 The PFI Agreement contains provisions for the benchmarking of the charges payable by Airwave Network users. These are provisions intended to enable the independent assessment of whether the charges represent value for money and to provide a process for the variation or termination of services which are determined not to be value for money. The PFI Agreement requires the benchmarking exercise take place within an initial six-year period and is then repeated at least every five years, although negotiations have led to this right being waived at various points. The benchmarking provisions have been incorporated into the Police Service Contracts, the Ambulance Contract and the SAS Contract but there are no parallel provisions in the Firelink Project Agreement.
- 2.69 As noted above, the Blue Lights Contracts began with fixed term periods (of between ten and 15 years) with varying ends dates, depending on when the contracts were entered into. Where the contracts were capable of extension, this was also for differing lengths of time, further fragmenting the end of the provision of the Airwave Network. However, the Police Service Contracts allow the Home Office to provide notice extending the original term of the contracts beyond the expiry date and original terms to being the end date in line with other Blue Lights Contracts within the specified region.
- 2.70 The contracts also differ in the circumstances and manner in which they may be terminated. If the PFI Agreement is terminated, all the Police Service Contracts end without notice, but the Firelink Project Agreement, the Ambulance Contract and the SAS Contract are unaffected.
- 2.71 A unique feature of the Ambulance Contract is the provision for profit sharing in the case of delay. Where there is delayed implementation of a formal interim

¹⁰³ Motorola's response to Q3(a) of the RFI dated 27 May 2021.

milestone, for each day from the delay, the Authority will be entitled to a sum equal to a percentage of the cost plus profit margin.

The decision to move away from reliance on the Airwave Network

- 2.72 In 2011, the government formed a project called the Emergency Services Mobile Communications Programme (ESMCP) with the objective of replacing the Airwave Network.¹⁰⁴ The programme conducted extensive industry and market engagement between 2011 and 2014, primarily concerned with technology selection. Many options were considered in terms of radio spectrum, and technology.
- 2.73 It was recognised at the time that the technology and standards to deploy dedicated public safety communications over a commercial network and ensure emergency service pre-emption and prioritisation over private users when necessary, were only just emerging, and might lead a programme to replace the Airwave Network with risk. To help mitigate this the ESMCP worked with the international standards body 3GPP to develop 4G standards for public safety cellular solutions.¹⁰⁵
- 2.74 The strategic drivers for change, as described in the Home Office's 2013 Outline Business Case for pursuing ESN, were threefold:¹⁰⁶
- (a) The expected expiry of the Airwave contracts in the period from 2016 to 2020 as well as the OJEC notice, which led to a common understanding that the PFI Agreement would be effective until 2020 and could not be extended.
 - (b) The significantly higher cost (estimated to be at least 200%)¹⁰⁷ of the Airwave Network and services when compared with similar public safety systems in Europe and price trends for publicly available mobile telephony.
 - (c) The increasing user requirements for mobile broadband data to support operational transformation that could not be fully met by the existing system.
- 2.75 One strategic objective of procuring the design and roll-out of ESN was that ESN would 'be based on a commercial mobile communications network that can be re-competed more regularly to exploit market forces and take advantage of

¹⁰⁴ NAO (2016), [Upgrading emergency service communications: the Emergency Services Network](#) (HC 627), page 5.

¹⁰⁵ NAO (2016), [Upgrading emergency service communications: the Emergency Services Network](#) (HC 627), paragraph 4.6.

¹⁰⁶ We examine other factors in the decision to procure ESN in section 4 of this report. See also Appendix B.

¹⁰⁷ A Gartner Study commissioned by the Home Office in July 2013 calculated the normalised total cost of ownership for Home Office users compared to a European peer average and concluded that 'Gartner concludes that the UK is paying above the market rate for TETRA services by 250%. The tolerance of the UK total cost of ownership calculation is estimated to be 15%; allowing for this tolerance the UK would still be 200% more expensive than European peers'.

technological evolution'. Four requirements were set for the new system, relating to functionality, security, availability and coverage. It was noted that TETRA technology could not meet all these requirements, without the use of additional broadband technology. While there were various options for combining TETRA technology with broadband, the chosen technology, 4G Long Term Evolution (LTE)¹⁰⁸ could meet all the stated requirements.

2.76 The chosen technological option was to make use of commercial 4G LTE services enhanced with extended coverage and public safety service platform and as noted above, one key aim was to avoid the risk of 'lock-in' with a provider (recognised as a key issue in the way in which LMR technology had been implemented) in order to:

- (a) Encourage competition in the commercial mobile services market segment and benefit from commercial rates (even with a premium for emergency services airtime)
- (b) Target best of breed providers in this specialist ESN functionality market segment
- (c) Maintain the ability to compete this separately in the future and as a contingency should there be a delay to open standards.

2.77 The intent to facilitate future competition was further clarified as follows:

Currently the extended coverage required is provided only by the incumbent supplier, and moving to 4G LTE would require re-investment in infrastructure to replicate this coverage for ESN. We need to procure this infrastructure to create a 'neutral host' to avoid the risk of 'lock-in' and support future competition:

- It avoids the mobile service provider having to make this investment
- It can be made available to any future MNO provider, allowing a longer period for recovery of the investment.

2.78 Thus, it was hoped that the long term competitive dynamics would be very different, once the ESN solution was fully implemented.¹⁰⁹

¹⁰⁸ A standard for wireless broadband communication for mobile devices and data terminals, based on the GSM/EDGE and UMTS/HSPA technologies. See [ETSI's webpage](#) for more information.

¹⁰⁹ This paragraph and the two preceding it draw on the Home Office's 'Outline Business Case for the Emergency Services Mobile Communications Programme (ESMCP)'.

- 2.79 On 18 April 2014, the Home Office invited prospective suppliers to submit proposals to supply ESN. Three main lots were issued to provide the relevant services:¹¹⁰
- (a) Lot 1 required a delivery partner to oversee the build-out of ESN; programme manage and report on transition; provide cross-Lot integration; training support; vehicle installation reference design and assurance; and delivery support. The ‘Delivery Partner’ contract was awarded to Kellogg Brown and Root (KBR). We refer to this contract as ‘Lot 1’ in the remainder of this report.
 - (b) Lot 2 required a service provider for: end-to-end systems integration; public safety functionality; account management; network and IT infrastructure; technical interfaces; user device approval and management; application approval and hosting; customer support; and service management. The ‘User Services’ contract was awarded to Motorola. We refer to this contract as ‘Lot 2’ in the remainder of this report.
 - (c) Lot 3 required a mobile network operator to provide an enhanced radio access service with highly available national coverage and an interface to User Services and the Extended Area Services.¹¹¹ The contract to provide ‘Network/Mobile Services’ was awarded to EE. We refer to this contract as ‘Lot 3’ in the remainder of this report.
- 2.80 While the initial procurement process concentrated on the contracts with Motorola and EE, there were a number of additional items that needed to be procured before the ESMCP could be implemented. These are known as ‘related projects’ and all of these (as listed below) have to be delivered and proven to interface with the application software (by Motorola) and the network (by EE):¹¹²
- (a) Extended Area Service (EAS) coverage: major and minor roads that fall outside of those in the primary coverage area.
 - (b) Air coverage: above 500 feet (already in the primary coverage area), up to 10,000 feet.
 - (c) London Underground coverage.

¹¹⁰ [Emergency Services Network \(ESN\) – Information Note](#); Home Office (undated). See also Home Office: [About the emergency services network](#)

¹¹¹ The CMA understands that a fourth lot to supply network access in rural areas was also considered but was later withdrawn by the Home Office.

¹¹² Emergency Services Mobile Communications Programme Independent Review by Simon Ricketts – Advisor to Permanent Under Secretary (HO), October 2017, page 5.

- (d) User devices: specially-optimised, rugged handset or fixed vehicle devices, with other devices (including a non-rugged alternative) available for the start of mass transition.
- (e) Control rooms.
- (f) Vehicle and aircraft installations.
- (g) Customer support services to enable transition.¹¹³

2.81 The multi-stage tender process ran from April 2014 to September 2015. Table 2.1: below summarises the main contract awards.

Table 2.1: Overview of the three contracts awarded in 2015

| Lot Description | Chosen Supplier | Awarded | Period Yrs | Value Low £m | Max Extension Yrs | Value High £m | OJEU Range £m |
|---------------------|-----------------|----------|---------------|--------------------|-------------------------|---------------------|---------------------|
| 1. Delivery Partner | KBR | 26/08/15 | 5.5 | 49.7 | 1.5 | 49.7 | 60 - 90 |
| 2. User Services | Motorola | 08/12/15 | 6.5 | 235.2 | 1.5 | 293.9 | 120 - 245 |
| 3. Mobile Services | EE | 08/12/15 | 6 | 658.4 | 1 | 735.8 | 200 - 530 |

Source: Home Office

2.82 The plan, reflected in the contractual provisions agreed by the winning bidders, was to design, build, test and assure the solution over a 21-month period (referred to as the Mobilisation period). This period was increased from 17 months (the timetable that had been originally set, based on what industry participants believed to be sufficient time), following negotiations with EE and Motorola, with the Home Office being prepared to extend it to 24 months, and the suppliers considering that 21 months would be sufficient for them to complete, build and test the network.¹¹⁴

2.83 The transition period would then start, during which users would progressively move, region by region from the Airwave Network to ESN. The agreed timetable was for the transition to start in September 2017 and be complete by the end of 2019, ie to take 27 months. The plan had originally been to allow for a four-year transition, but this was reduced to 2.5 years due to the cost of the Airwave Network services and because it had 'not been possible to agree a notice based arrangement to contract termination as was originally assumed': as part of discussions with Airwave Solutions about a possible phased transition, Airwave Solutions had 'simply proposed an expensive, blanket, extension of all contracts to 2020'.¹¹⁵

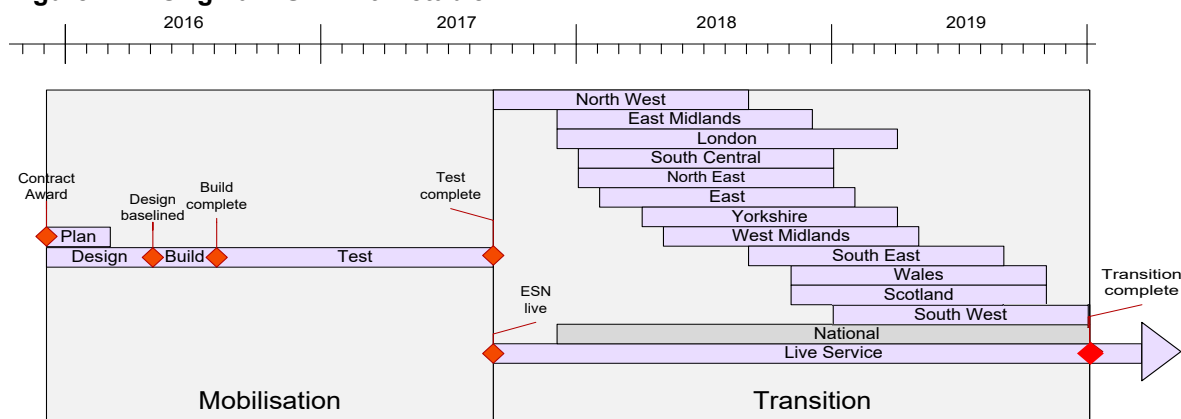
2.84 This plan is shown in Figure 2.2: below.

¹¹³ It is also important to note that before a 'national shutdown' of Airwave can occur the other user organisations beyond the emergency services also have to implement the new solution.

¹¹⁴ Draft letter from the Home Office Permanent Secretary to [redacted] of the NAO.

¹¹⁵ Home Office internal briefing, 29 July 2014.

Figure 2.2: Original ESMCP timetable



Source: Home Office

- 2.85 During the transition period, an ‘interworking’ technological solution would be required to enable users to make calls between the Airwave and ESN networks. This is discussed in section 5 of this provisional decision report.

Key developments since 2015

Acquisition of Airwave Solutions by Motorola and subsequent negotiation

- 2.86 On 3 December 2015, Motorola agreed to purchase Airwave Solutions from Macquarie, subject to approval by the Home Office, and on 7 December 2015, the Home Office accepted an undertaking from Motorola, referred to as a Deed of Undertaking, not to complete its proposed purchase of Airwave Solutions without the Home Office’s approval.¹¹⁶
- 2.87 On 8 December 2015 the Home Office agreed the Lot 2 contract with Motorola.¹¹⁷
- 2.88 Following commercial negotiations, a number of agreements were entered into between Motorola and the Home Office on 17 February 2016. These agreements included Heads of Terms (HoTs),¹¹⁸ dispute settlements (‘the Benchmarking Settlement’ and ‘the Ambulance Settlement’) covering various disputes between Airwave Solutions and the Home Office and between Airwave Solutions and the ambulance authorities, and a Deed of Recovery, the purpose of which was to address the ‘conflict of interest’ that the Home Office considered Motorola’s ownership of Airwave Solutions and its role as a key supplier to the ESMCP programme gave rise to.¹¹⁹

¹¹⁶ Deed of Undertaking by Motorola Solutions, Inc. in favour of the Secretary of State for the Home Department, 7 December 2015.

¹¹⁷ ESMCP Terms and Conditions, 7 December 2015.

¹¹⁸ Heads of Terms Regarding extensions, 17 February 2016.

¹¹⁹ Deed of Recovery between Motorola Solutions, Inc. and the Secretary of State for the Home Department, 17 February 2016.

- 2.89 Under the HoTs, contract end dates were aligned across all the emergency services contracts with Airwave Solutions to a 'National Shutdown Date' (NSD) target of 31 December 2019 and the Home Office gained a unilateral right to extend the same contracts at the prevailing price.¹²⁰ Individual contracts remained in place and the Home Office led on the negotiations while engaging with the relevant ambulance and fire and rescue service representative bodies. These amendments were implemented in August 2016 via an Umbrella Change Control Note (UCCN1).
- 2.90 Other key details of these agreements are provided in Appendix C and the negotiations that led to these agreements are further discussed in Appendix D.

ESN delivery delays and re-plans

- 2.91 The timescales for the delivery of Lot 1, Lot 2 and Lot 3 were defined and expressed as the duration in days and months following the effective date (ED) of the contract:
- (a) ED + 28 days: integrated plan
 - (b) ED + 5 months – agreed and documented technical design
 - (c) ED + 21 months – first transition starts, i.e. September 2017.
- 2.92 The first two milestones were not met, and by the summer of 2016, the Home Office decided to develop a new plan in collaboration with EE and Motorola. This led to a Change Request (CR110), raised in September 2016, and a new set of milestones and a planned delay of three months to the beginning of the transition.¹²¹
- 2.93 Delays however continued throughout 2017, and by December 2017, the Home Office decided to consider all possible options, including the potential abandonment of ESN.
- 2.94 In the meantime, Motorola had acquired Kodiak Networks,¹²² a privately held provider of broadband push-to-talk (PTT) for commercial customers. Under Motorola ownership, the Kodiak team started the process of developing its PTT application to meet the needs of public safety customers, thus turning it into a mission critical push-to-talk (MCPTT) application. In May 2018, Motorola invited the Home Office to consider switching from the MCPTT application that it had sold as part of its Lot 2 contract, Wave 7000, to the Kodiak MCPTT application.

¹²⁰ Home Office on behalf of the police; Department for Communities and Local Government (later transferred to the Home Office) on behalf of the fire services; the DoH for the ambulance services in England and Wales; the Scottish Ambulance Service Board for the Scottish ambulance services.

¹²¹ Home Office presentation to ESMCP stakeholders, 4 October 2016.

¹²² Motorola press notice, 28 August 2017. [Motorola Solutions completes acquisition of Kodiak networks](#)

Although at that time, a limited number of the requirements set out in Lot 2 were met by the Kodiak MCPTT application,¹²³ it was considered to be a more appropriate application than the Wave 7000 application that was being developed. That was not least because it was specifically designed to operate over 4G cellular networks and was seen as easier to adapt to the needs of blue light customers.

- 2.95 Following negotiations held from May to August 2018, in which it was agreed to reset the ESMCP, Heads of Terms were signed on 21 September 2018. These Heads of Terms would be implemented through a Change Advisory Note (CAN500) which was signed on 14 May 2019.
- 2.96 CAN500 endorsed the change of the planned MCPTT application from Wave 7000 to Kodiak. CAN500 also endorsed the plan to deliver the functions of Kodiak incrementally, culminating with 'Kodiak 10' which would enable users to be migrated to ESN and the Airwave Network to be switched off,¹²⁴ rather than the original plan to deliver all Wave 7000 functions together. The Home Office considered that the benefits of incremental delivery were 'an early sight of test issues, the opportunity to build confidence with Users by familiarising with the new system and a better cash flow profile for Motorola rewarding development progress'. CAN500 included a revised date for 'mobilisation complete' of 30 November 2020, rather than the original contract date of 15 September 2017.¹²⁵
- 2.97 Following CAN500, the plan was refreshed twice in 2020: in February 2020 (in a re-plan called 'Taking heat out of the plan', based on Kodiak 11, with a 'mobilisation complete' date of 29 October 2021), and in November 2020 (the '11.x' plan, based on Kodiak 12, with a 'mobilisation complete' date of 31 March 2023).¹²⁶
- 2.98 By July 2021, the ESMCP had fallen behind further. The Home Office's estimated target date for starting transition was the second quarter of 2024, with completion targeted for the end of 2026, although this is regarded by the Home Office as 'simply the anticipated date' at which the Airwave Network could be shut down.¹²⁷ These target dates are set out in Table 2.2:.
- 2.99 Key changes to the target dates, over time, for implementing ESN and transitioning users from the Airwave Network to ESN, are set out in Table 2.2:.

¹²³ Motorola internal presentation, undated, slide 3. This shows that when the HoTs were signed, the Kodiak MCPTT application met 18% of the 510 Lot 2 functionality requirements.

¹²⁴ A series of implementation steps were planned to lead to this: 'Direct 1' based on Kodiak 8.4, 'Direct 2' based on Kodiak 9.0, 'Direct 3', which was later de-scoped from the programme, was going to be based on Kodiak 9.1.

¹²⁵ Home Office teach-in slides, 1 December 2021.

¹²⁶ Home Office teach-in slides, 1 December 2021.

¹²⁷ Home Office teach-in slides, 1 December 2021; HO responses to Q35 of the RFI dated 11 February 2022.

Table 2.2: **Implementation schedule changes since December 2015**

| Date of plan | December 2015 | August 2016 (NAO report) | May 2019 (the reset) | November 2020 ('11.x Plan') | July 2021 Full Business Case |
|--|----------------|-----------------------------|-------------------------|--------------------------------|---------------------------------|
| 'Mobilisation complete', start of transition | September 2017 | September 2017 | November 2020 | March 2023 | April 2023 |
| Airwave Shutdown Date | March 2020 | December 2019 | December 2022 | December 2026 | December 2026 [3<] |
| Transition period | 30 months | 27 months | 27 months | 27 months | 27 months |

Sources: NAO (2016), *Upgrading emergency service communications: the Emergency Services Network, Figure 11*; NAO (2019), *Progress delivering the Emergency Services Network, figure 4*; Home office Teach-in slide pack.

Negotiations relating to the Airwave Network

- 2.100 As the delivery of ESN has taken longer than had been expected in 2015/16, it has been necessary to extend the various emergency services contracts with Airwave Solutions beyond 31 December 2019. The terms of these extensions have been the subject of bilateral negotiations, led by the Home Office on behalf of key customer groups, which have taken place in 2018 (from April to September) and (unsuccessfully) in 2021. In 2021, negotiations having been unsuccessful, the contracts were extended by the Home Office's exercise of its contractual right to set and issue notice of the NSD Target Date.
- 2.101 In addition to these negotiations, the Home Office and Motorola carried out negotiations in early 2017 as part of a replanning of the ESMCP programme that was expected to lead to extensions of the period of operation of the Airwave Network spanning a few months. These negotiations resulted in a £[3<] million one-off discount to apply in 2020.
- 2.102 The 2018 negotiations resulted in an extension of the period of operation of the Airwave Network to 31 December 2022 and had the effect of varying certain of the matters set out in the 2016 HoTs. In commercial terms, this involved an additional [3<]% discount to core service charges and the continuation of the discount (credits) given in 2016 (amounting to £[3<] million). As part of the negotiations, Motorola modelled prices on two bases, neither of which was taken up by the Home Office:
- (a) In April 2018, it modelled a [3<]-year extension that assumed that previous discounts (£[3<] million and the £[3<] million) would not apply and built in discounts increasing over time from [3<]% to [3<]%.¹²⁸
 - (b) In June 2018, following a request from the Home Office to consider an 18-month rolling extension, Motorola proposed another [3<] year extension with breaks and a minimum period of [3<] years. This assumed that previous

¹²⁸ Motorola presentation to the Home Office, 17 April 2018.

agreed discounts would not apply and built in discounts increasing from [X]% to [X]%. It also transferred the cost of the decommissioning of the assets to the Home Office if the early break option was exercised.¹²⁹

- 2.103 The 2021 negotiations related to the potential extension of the contracts beyond 2022 as it was not expected that customers would finish transitioning from the Airwave Network to ESN before the end of 2026. As at June 2021, Motorola's position was that charges should increase by £[X] million, due to the need to refresh the Airwave Network. Negotiations stalled following the launch of the CMA's MIR consultation on 8 July 2021 and launch of the MIR on 27 October 2021, and in December 2021 the Home Office exercised its right to extend the contract unilaterally to 31 December 2026 at current prices.

Evolution and future of relevant technology

- 2.104 Since at least 2015, there has been much debate about the speed at which LMR technology will be replaced by LTE for emergency services use, or whether the two will be used as complements for one another.¹³⁰ Investment analysts have tended to see LTE as only a 'long-term' risk to companies providing products and services based on LMR technology.¹³¹
- 2.105 We understand from the IAP (as advised by the European Telecommunications Standards agency (ETSI)) that TETRA, the LMR technology used to provide the Airwave Network, is not being developed further, for example to support mission-critical data.¹³² Having carried out extensive research into the plans of several European countries and other countries around the world, the IAP concluded that although TETRA is likely to be in use in some locations around the world beyond 2030, there is a move towards LTE to support mission-critical broadband communications in many comparator countries.
- 2.106 Motorola nonetheless told us that LMR networks are regarded by customers as current technology, in which they are willing to invest significant sums of money in order to maintain that technology in the future. It provided examples of LMR networks around the world that it is involved in designing and implementing and told us that it continues to invest approximately US\$[X] million per year in LMR R&D. It is also investing in 'broadband MCPTT software features and in 'dual

¹²⁹ Motorola presentation to the Home Office, 6 June 2018.

¹³⁰ For example, reported comment by [X], then [X] of Motorola Solutions Inc., on 9 September 2015 that 'public safety LTE is additive to LMT' in an article in Radio Resource international on 9 September 2015, and reported comment by [X], then [X] at Motorola Solutions Inc, in Critical Communications Today, 7 August 2018, '[Motorola Solutions news round-up](#)'. That 'for the foreseeable future many, many, many years in public safety, it will be LMR and LTE rather than LTE as a replacement for LMR'.

¹³¹ Raymond Jaymes report, 23 February 2018; Wells Fargo Securities report, 28 February 2018; Jefferies report, 8 July 2021.

¹³² Independent Assurance Panel submission to the Competition and Markets Authority, 5 April 2022, page 10.

mode' devices that can operate on either LMR or LTE technology.¹³³ It considers both technologies to be of 'profound current and future strategic significance', while many governments are still evaluating the move towards broadband technology. While in the UK the Home Office has served a notice for the shut-down of the Airwave Network by the end of 2026, Motorola believes there is a good chance that the transition process may take longer than the Home Office expects. Motorola has invested significantly in developing products that facilitate the 'hybrid' operation of both LMR and broadband networks (including the development of dual mode devices, while such transition takes place, or even on a longer basis). It also considered that the Airwave Network should not be regarded as 'old' in technology terms, or in terms of Airwave's significance to Motorola more generally as part of its global LMR activities.¹³⁴

- 2.107 In a March 2021 presentation to Home Office advisers and senior civil servants describing the Airwave infrastructure, including the need to refresh some key equipment to ensure that it continues to provide a reliable service, Airwave Solutions described the TETRA market as still growing, highlighting that 50% of the installed base was in Europe, where a 2.4% growth rate was expected while a growth rate of 14.9% was expected in North America.¹³⁵ The presentation also highlighted customers' commitment to TETRA technology, showing a range of contracts that are expected to continue beyond 2025 and for some well into [redacted].¹³⁶
- 2.108 Turning to the UK, Motorola's views on the future of LMR technology appear to centre on the potential for the Airwave Network to be retained alongside ESN as a complementary infrastructure supporting voice communication, with ESN being focused on data:
- (a) In a meeting held in September 2020, Motorola suggested to the Home Office that a change of direction for ESN would be beneficial. This was described as an 'ESN/Airwave Convergence/Co-existence' strategy that 'would involve revisiting the service and transition strategy – with the concept of keeping both networks (ESN and Airwave) – and hence a revisit of the Business Case. The principle would be that the proven Airwave Service could continue to provide reliable "voice" services, and the new ESN Service would focus on "enhanced services" such as analytics, video etc. - and allow a period of stabilisation for the ESN Service. Commercially, MSI could provide greater flexibility for a longer term, strategic arrangement with both technologies.' This was consistent with Motorola's overall goal of establishing

¹³³ Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, 18 March 2022.

¹³⁴ Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, 18 March 2022.

¹³⁵ Forecast to 2023, based on a 2019 report produced by IHS Markit on TETRA terminals.

¹³⁶ Motorola internal presentation on Airwave, 11 March 2021.

a long term strategic relationship covering Airwave, ESN and other services. In parallel, Motorola developed revenue and profit forecasts based on a scenario in which the Airwave infrastructure would continue to coexist alongside ESN until at least 2030, if not longer. This presentation assumed that Motorola would provide its ESN services 'for free' and would broadly maintain its current level of revenue across ESN and Airwave longer term under this hybrid infrastructure.¹³⁷

- (b) Motorola's expectations, as set out in its 31 December 2020 Impairment review, were as follows: 'Airwave's core contracts were last renewed in December 2018, extending the current Airwave service to December 2022. Negotiations are ongoing with government around a further extension to the Airwave service, potentially to December 2024. Airwave management further believe that an extension to December 2025 will already be necessary, based on current ESN transition timelines (note that the original Motorola model that backed up the Airwave acquisition in 2016 also assumed cash flows to 2025). Management also envisage that post-2025, significant elements of the Airwave network would be required as a complementary service to ESN, providing voice and remote area coverage, up to 2029. Internal organisational changes have brought Airwave and ESN together under unified Motorola management control, paving the way for the provision of complementary services delivered by one merged UK business.'¹³⁸

Recent developments relating to the ESN Lot 2 contract

2.109 Since the CMA's original consultation and decision to carry out a market investigation, both Motorola and the Home Office have continued to work together on the Lot 2 contract. Some developments in these discussions are relevant to the context in which we have reached our provisional decision. In particular:

- (a) Motorola has informed the Home Office of its intention [§<].¹³⁹ In a letter about that, Motorola noted that one potential remedy resulting from this market investigation was divestiture of the Airwave business. Motorola stated that '[w]hile we do not agree ... that divestiture would represent a proportionate remedy, given the extremely uncertain regulatory environment we face by participating in both ESN and Airwave, we have no realistic option but to [§<]. We are required to take this step in order to directly address the CMA's concerns.'¹⁴⁰

¹³⁷ Email from Motorola to Deloitte, 16 September 2020; Motorola internal presentation, 25 August 2020; Motorola internal presentation, 16 October 2020, discussed with Motorola [§<] on 12 November 2020.

¹³⁸ Motorola internal 'Local Statutory Entity Investment Valuation and Impairment Review, 31 December 2020.

¹³⁹ Letter from Motorola to the Home Office, 16 November 2021.

¹⁴⁰ Letter from Motorola to the Home Office, 16 November 2021.

- (b) In June 2022, we were informed that [REDACTED].¹⁴¹
- (c) In September 2022, we were informed by Motorola that it was in discussions with the Home Office with a view to [REDACTED]. We were also informed that Motorola [REDACTED]. The Home Office has [REDACTED].¹⁴²

¹⁴¹ Motorola's response to questions on Lot 2 expiry, 14 June 2022.

¹⁴² Motorola Update Note to the CMA, 7 September 2022 and Home Response to RFI dated 13 September 2022.

3. Scope for competition and market definition

3.1 In this section, we set out our analysis of:

- (a) The scope for competition in the supply of the relevant services and whether there is a market for them which is open to our assessment under the statutory market investigation framework; and
- (b) the appropriate market definition.

3.2 As to the first of those, the provisional conclusion we reach is that there is scope for relevant competition and a market which is capable of assessment. On the second, we provisionally define the market as that for the supply of communications network services for public safety and ancillary services in Great Britain.

Contracts, markets and the application of the statutory framework

3.3 Before we make any assessment of competition, our analysis (in paragraphs 3.3 - 3.92) focuses on whether there is scope for competition in the supply of LMR network services for public safety and a market that we can assess. At this stage of our analysis, we are just concerned with those questions. After reaching a provisional conclusion on them, we then move on to consider how the market should be defined (in paragraphs 3.93 - 3.121) (and in the subsequent section of this report we assess competition in the market).

3.4 Motorola has made submissions that there is no market to analyse in this investigation. A central element of these submissions is that the supply of LMR network services for public safety by Airwave Solutions amounts to no more than a contract between two willing parties.¹⁴³

3.5 Motorola submits that there is therefore no scope for a competition assessment now to be carried out and all the parties' rights and obligations are fully defined and enforceable through the contract (the PFI Agreement, as extended and amended). In Motorola's view, matters should be assessed through this contractual lens: that large, sophisticated and willing contracting parties exercised free and informed choice to agree contractual provisions that they are able to enforce.¹⁴⁴

3.6 Motorola has said there was competition in relation to the supply of LMR network services for public safety in 2000 and the CMA should assess the market by reference to competition in the tender for the original PFI Agreement (ie at the

¹⁴³ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 8.

¹⁴⁴ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 7

point at which the Home Office, through PITO, and BT willingly entered into a long term agreement). It submitted that:

- (a) The correct approach in the context of markets characterised by bidding and tendering is to examine the conditions of competition when competition for the market takes place¹⁴⁵ and that the contractual starting point in 2001 should be an integral part of our assessment as this was when the Airwave Network came about;¹⁴⁶ and
- (b) competition has not taken place since the original tender process,¹⁴⁷ which tender resulted in a competitive outcome.¹⁴⁸

3.7 The implication of these submissions is that we should not look at forms of competition other than for the market at the time of the PFI Agreement.

3.8 Motorola has also submitted that there is no competitive interaction between the Airwave Network and ESN and in particular that:

- (a) Motorola cannot delay ESN or reduce its quality, because the terms on which customers would be served and the timing of the migration were determined at the tender stage of the ESMCP¹⁴⁹ and Motorola would face significant financial penalties for any delays to ESN which it caused;¹⁵⁰
- (b) Airwave Solutions' profitability is affected by ESN only in the sense that Motorola might incur additional costs if the end date of the operation of the Airwave Network changes;¹⁵¹
- (c) as soon as ESN was commissioned, there was nothing that Airwave Solutions could do to delay or reduce the extent of switching to ESN by improving aspects of its offering to the Home Office¹⁵² and there is no

¹⁴⁵ Motorola's first supplementary response to the 10 February 2022 hearing with the CMA, 4 March 2022, paragraph 2.

¹⁴⁶ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 2(c).

¹⁴⁷ Motorola's first supplementary response to the 10 February 2022 hearing with the CMA, 4 March 2022, paragraph 3.

¹⁴⁸ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 13.

¹⁴⁹ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 13.

¹⁵⁰ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 76.

¹⁵¹ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraphs 10-11.

¹⁵² [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 55.

evidence that Airwave Solutions could speed up or slow down the transition to ESN by offering lower prices;¹⁵³¹⁵⁴

- (d) once ESN was commissioned there was no scope for competition between ESN and the Airwave Network as investment in ESN would not have been undertaken speculatively in the expectation that customers would migrate depending on the relative attractiveness of the terms offered;¹⁵⁵ and
- (e) ESN was simply envisaged as a replacement for the Airwave Network and was never considered to be a possible alternative to the Airwave Network that would improve the Home Office's bargaining power in contract negotiations.¹⁵⁶

- 3.9 Motorola further submitted that since 2016 there has been no scope for competition through negotiations. This is because, it submits, there has been no requirement to negotiate, including on terms such as the price and duration of the contract under which the Airwave Network is provided. The terms on which the blue light services access the network were set in the original PFI Agreement and in the 2015/16 negotiations that resulted in the HoTs (which gave the Home Office the right to extend the contract on the same terms as long as it required).¹⁵⁷
- 3.10 Motorola has told us that economic bargains struck bilaterally along the way do not reveal anything about whether a market is working well.¹⁵⁸
- 3.11 Motorola also submitted that the scope for competition is determined by the decisions of the buyer, in this case the Home Office, about when and how to procure the relevant service.¹⁵⁹ It said that there were instances where competition could have taken place but did not because of the decisions taken by the Home Office.¹⁶⁰ For example:

¹⁵³ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 58.

¹⁵⁴ Motorola made similar submissions to us in an update note on 7 September 2022 (paragraphs 13 and 14) to the effect that the Home Office's procurement of ESN to replace the Airwave Network deprives Airwave Solutions of its entire customer base and it cannot, actually or potentially, compete against ESN for those customers. The arrangement under which the Airwave Network is provided is just a contract in 'run-off' and 'the Airwave service is simply the execution of a contract on agreed terms.'

¹⁵⁵ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 57.

¹⁵⁶ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 163.

¹⁵⁷ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 16.

¹⁵⁸ Motorola's first supplementary response to the 10 February 2022 hearing with the CMA, 4 March 2022, paragraph 4.

¹⁵⁹ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 18.

¹⁶⁰ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 19.

- (a) The Home Office could have chosen to run a competitive procurement process for communications network services for public safety and ancillary services for the period 2020-2026;¹⁶¹
- (b) the Home Office could have chosen a 10 year deal with various break options offered by Motorola in 2018 in return for very substantial discounts¹⁶² (of between [X]% and [X]%),¹⁶³ and
- (c) the Home Office could have procured ESN as an alternative solution that would be available alongside the Airwave Network.¹⁶⁴

3.12 Taking account of these submissions, we have assessed:

- (a) Whether the supply of LMR network services amounts to a single contract between two willing parties and whether it can constitute a market, and the implications of this for the applicability of the market investigation regime;
- (b) the types of competitive processes that can exist in bidding markets and the relevance of the tender for the original PFI Agreement;
- (c) whether investment in ESN by Motorola can, in principle, be thought of as a form of competition with Airwave Solutions – or would be a form of competition if Motorola did not own Airwave Solutions;
- (d) the role of the contractual provisions established in 2016 in our competitive assessment; and
- (e) the role of choices made by the Home Office in that assessment.

Contracts and market investigations

3.13 In this subsection we consider whether the supply of LMR network services for public safety by Airwave Solutions amounts to no more than a contract between two willing parties, with no scope for a competition assessment to be carried out, because all the parties' rights and obligations are fully defined and enforceable through the contract between them. We start by making a broad general observation about markets and the statutory markets investigation regime, and some further preliminary commentary, that provides the context for our consideration of these questions and Motorola's submissions.

¹⁶¹ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 20.

¹⁶² [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 23.

¹⁶³ Section 3.3.1, paragraph 2.

¹⁶⁴ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 22.

- 3.14 Our broad general observation is that the statutory powers given to us to investigate markets under the markets investigation regime and, where appropriate, to impose remedies, are premised on the bases that:
- (a) markets do not always deliver effective outcomes; and
 - (b) market mechanisms such as freedom of contract, that can often be relied upon to ensure efficient outcomes, do not always do so.
- 3.15 In many cases, the failures referred to in the previous paragraph may be in markets where larger suppliers provide goods or services to multiple customers or consumers who are not in a position to properly protect their own interests. However, there will also be circumstances, as may be the case here, where even for parties who may at first sight appear to be relatively large and knowledgeable, the competitive process is not properly protected by contractual freedom alone and, as a result, customers or consumers pay higher prices or receive worse quality than would be expected in a well-functioning market.
- 3.16 Our provisional view therefore is that the existence of a contractual framework between the Home Office and Airwave Solutions / Motorola does not obviate the need for an investigation of whether there are features of the market that may have an adverse effect on competition. That framework does not necessarily provide a complete explanation of the competitive position of the parties and / or preclude the possibility of competitive distortions.
- 3.17 Parties may enter into contracts freely and on an informed basis. However, the observation that a party has entered into a contract freely and willingly does not in itself demonstrate that the market is working effectively or that no competition problem exists. It only suggests that the party may be better off with a contract than without. Parties may enter into contracts with suppliers who have market power, or even monopolists, if that is better than not doing so, but the existence of those contracts does not necessarily indicate that there are no competition concerns in the relevant market.
- 3.18 Our powers and duties in the relevant part of the Act reflect the preceding points. Those powers and duties are wide. They require us to decide whether features of the relevant market give rise to an AEC and, if so, to consider whether and how to remedy it. They apply whether or not there are contracts between parties and even if any remedy we impose requires changes to those contracts.
- 3.19 We also note that the existence of a contractual relationship between parties, even if they are the main or only industry participants, does not preclude the existence of a market. A market is characterised by the interaction of supply and demand and the price that results from this interaction. Even a situation in which there are only two participants – a monopoly supplier and a monopsony buyer – bound by a long term contract still amounts to a market.

- 3.20 A market of the kind referred to in the previous paragraph can, in our provisional assessment, be thought of in two aspects. There is (or was) a market for the original contract – the bidding market. There are also competitive interactions in relation to the performance, variation or enforcement of the contract once it is entered into. The former results in a legal structure where the contract defines parameters of the parties’ relationships. The latter is concerned with the commercial and economic structure in which the parties’ relationship exists and where, particularly in long term complex contracts, there continues to be scope for competition (as illustrated in the following paragraphs).
- 3.21 A market in which a contract was initially awarded by a competitive process can have or develop features that prevent, restrict or distort competition. Choices made by purchasers at the point of contracting may be limited or distorted by market features. The initial contract may not have anticipated, or may even have intentionally left unresolved, potential developments (see further below). Circumstances may change over time so that new features arise, or existing ones are exacerbated, with a consequent impact on the competitive process during a contractual relationship. A contract may come to an end and a lack of effective choices may tie the purchaser into a continuing relationship with the supplier.
- 3.22 We are not minded to regard an intervention under the markets regime into existing commercial arrangements that include a contractual framework as improperly affecting contractual certainty or confidence in the effectiveness of contracts. Contracts are an important underpinning of commercial relationships and of an effective economy, but there are occasions where features of a market result in the commercial process not working to ensure competitive outcomes for customers and consumers. Identifying and, where necessary, remedying such failures is also an important part of ensuring that market participants can have trust and confidence in their relationships.
- 3.23 We make two further preliminary comments. The first is that we do not think it is correct to characterise the supply of LMR network services for public safety in Great Britain as comprised of one contract.
- 3.24 Rather, as explained in section 2 of this report, Airwave Solutions has contracts with five distinct categories of customers, which were entered into at various times through different procurement processes. Whilst in practice the Home Office has been the principal negotiating party for all the contracts since 2016, each contract formally remains separate and contains some materially different terms (see Appendix C). To the extent that these terms have changed over time so that they are now more similar than when the contracts were entered into, for example now having common end dates, this was a result of negotiations that took place subsequent to the dates of the original contracts.

- 3.25 Our second further comment is that the analysis of contracts may form part of the CMA's market assessment, usually in order to provide a deeper understanding of how terms may provide an indicator of competitive distortions.¹⁶⁵ However, there are significant limitations to how probative contract terms themselves, particularly when looked at in isolation, can be in the assessment of the functioning of markets.
- 3.26 We generally proceed on the basis that contracts are legally binding and liable to be complied with (and enforced if not). Nevertheless, even where a supplier's responsibilities are set out in contracts, in practice its performance will often be influenced by its incentives and the competitive conditions in the market. There are a range of reasons for this:¹⁶⁶
- (a) Particularly in long term contracts which involve dynamic, complex, and bespoke services with a wide range of features, those services and features will not always have been definitively conceived, specified and agreed in advance. Rather, the practical challenges and costs associated with identifying all the relevant contingencies and specifying them in a contract in a comprehensive, readily-understandable and enforceable way mean that contracts often set out overall objectives and outcomes, and a framework for performance that gives the parties a degree of flexibility and/or room for further agreement about how those objectives and outcomes will be achieved. Even where contractual provisions and requirements are comprehensive, a supplier can still choose to exceed these requirements if it is sufficiently incentivised. This could be, for example, if it wishes to send a signal to existing or potential customers about its performance and strengthen its ability to win future business. Given this flexibility, competitive pressure can play an important role in disciplining suppliers and ensuring they make efforts to perform competitively beyond what is specified in the letter of the contract.
 - (b) Contract terms can be varied or waived by parties. The longer and the more complex the contract, and the more complex or dynamic the technological and business context, the more likely this is. The degree of competitive pressure can affect whether that supplier is able to renegotiate terms in its favour or induce a customer to waive their contractual rights.
 - (c) The enforcement of existing contractual terms in practice can be costly, time-consuming and risky, and potential contractual disputes may often be resolved by renegotiation of the terms rather than litigation. This can be due to uncertainty about the interpretation of specific terms or wider

¹⁶⁵ See [CC3 \(Revised\)](#).

¹⁶⁶ These are set out in various economic and legal papers, including: Hermalin, Katz and Craswell (2006) 'The Law and Economics of Contracts' and Tirole (1999) 'Incomplete contracts: where do we stand'.

considerations, such as the cost and reputational impact of enforcement. Those factors can, in turn, affect the way parties perform their obligations or engage in discussions or disputes about them. This again is particularly likely to be the case for complex and multi-faceted contracts where in practice it is often difficult to interpret contractual terms and observe and verify a supplier's adherence to them.

- (d) In addition, a customer, especially one party to a long term contract, may be reluctant to take enforcement action where its interest is in the performance of the relevant aspect of the contract as part of long term delivery, rather than obtaining damages (which may be limited), and in maintaining its relationship with the supplier over that term in order to achieve effective delivery and continuity of supply. This is particularly likely to be the case where there is no commercially feasible alternative to the supplier.
- (e) In principle, suppliers may also be influenced by the costs and reputational impact of enforcement action, for example on their other customers or potential future customers. This may lead them to make concessions that they are not contractually bound to make.
- (f) Contracts reflect commercial relationships and competitive conditions at the time that the contract is entered into. They crystallise commercial understandings and provide a safeguard against future breakdowns in commercial relationships, but they do not necessarily provide the same level of protection for parties as that afforded by effective competition in a market over time. When analysing markets, the CMA's focus is on underlying economic realities as they may develop over time, including the way in which relevant parties approach transactions and commercial relationships more generally.
- (g) There is a distinction to be made between what a party is entitled to contractually and the incentives that drive the behaviour of companies, including within commercial negotiations (before or after a contract is agreed). It is the combination of both that defines how a market operates.
- (h) When a contract ends, any decision to extend it beyond the period specified in the original agreement, and whether to do so on the same terms, will reflect the competitive situation and the parties' relative bargaining power at the time at which the extension is agreed.

3.27 Many of the above points are applicable in this case. We note that the PFI Agreement and the ESN Lot 2 contract are both complex and the original term of the Airwave PFI Agreement was long. While any contract is capable of variation by the parties' agreement, it is notable that paragraph [38] of the recitals to the PFI

Agreement expressly acknowledges the dynamic and evolving nature of the parties' arrangements:

Both parties acknowledge that the Services will need to be flexible and dynamic according to the requirements of the Authority and the Customers, and therefore may be subject to change [X].¹⁶⁷

3.28 Additionally, over their lifetime the interpretation and aspects of the performance of the PFI Agreement and Lot 2 contract have been the subject of amendments, and ongoing discussion or negotiation, as well as in some cases disputes and disagreements, between the contracting parties. Examples of the former are described in section 4 of, and Appendices C and D to, this report.¹⁶⁸ Examples of the latter that we have been made aware of, include:

- (a) Discussions and subsequent disputes relating to the interpretation of the benchmarking provisions in the PFI Agreement (see section 4 of this report);
- (b) uncertainty and disagreement between the Home Office and Airwave Solutions about the original end date of the PFI Agreement (see Appendix C);
- (c) the limited progress in the development of the Service Transfer Plan by Airwave Solutions, despite the requirements of Schedule 15 of the PFI Agreement and several attempts over an extended period by the Home Office, and other parts of government, to obtain compliance (see section 4); and
- (d) discussion and disagreement as to whether prices are still negotiable following the issue in December 2021 of a National Shutdown Notice.¹⁶⁹

3.29 In our provisional view, the likely impact of the above issues on outcomes (in terms of price and quality) illustrates why a contract alone cannot be necessarily relied upon comprehensively to moderate parties' behaviour or to wholly isolate parties from the disciplines of a well-functioning market.

3.30 It also appears to us that there are inconsistencies in Motorola's own submissions in this regard, and which support our provisional view. In particular, it made the submissions in paragraphs 3.4 to 3.6 above that there has been no scope for competition since the PFI Agreement was made and that the supply of the relevant network services by Airwave Solutions is no more than a contract between two

¹⁶⁷ PFI Framework Arrangement for the Public Safety Radio Communications Service, 29 February 2000, page 1.

¹⁶⁸ Including in relation to the end date of the PFI Agreement, before it was changed in 2016; and the price that would apply and scope for price negotiation following the issue of a National Shutdown Notice by the Home Office.

¹⁶⁹ For example, letter from Home Office to Motorola, 25 January 2022, and letter from Motorola to Home Office, 24 December 2021.

willing parties. However, in other submissions it has provided examples which show that the practical reality is that there were – or could have been – competitive interactions between the parties after the original agreement was concluded:

- (a) The submission in paragraph 3.9 above, that there has been no scope for competition since the negotiations in 2015 / 16 that led to the HoTs, recognises that there was a competitive interaction¹⁷⁰ between the parties at that time; and
- (b) the submission in paragraph 3.11 that, in 2018, the Home Office could have accepted Motorola's offer of an extension of the operation of the Airwave Network for 10 years, with break options, in return for very substantial price discounts¹⁷¹ (of between [X]% and [Y]%), acknowledges the scope for negotiation at that point too.

3.31 We also note that the submission in paragraph 3.9 included that in the 2016 HoTs the Home Office secured the unilateral right to extend the operation of the Airwave Network in perpetuity. However, Motorola has since told us that (i) the terms of the HoTs must be interpreted 'within their commercial and technical context' such that, once a National Shutdown Notice has been issued, further extensions of the operation of the network pursuant to the HoTs can only be limited in scope and for a matter of months, and (ii) more substantial extensions would be open to additional negotiation.¹⁷²

3.32 The points in the preceding paragraph appear to indicate acknowledgement by Motorola that (i) we should not just rely on the contract terms in isolation to understand how the commercial relationship between the Home Office and Motorola operates; (ii) those terms should not necessarily be seen as unambiguously defining the parties' obligations and conduct; and (iii) that further scope for negotiation – competitive interactions – between the parties continues to arise.

Provisional conclusion

3.33 In light of the above, our provisional conclusion is that the contract between Airwave Solutions and the Home Office does not preclude, and in fact is consistent with, the existence of a market that may be subject to a competition assessment. The supply of LMR network services for public safety by Airwave Solutions amounts to more in our provisional view than simply a contract between two willing

¹⁷⁰ Or at least an interaction in which there was scope potentially for competition to have occurred.

¹⁷¹ [Motorola's Response to the CMA's working paper on Scope for Competition and Market Definition](#), 27 May 2022, paragraph 23.

¹⁷² Letter from Winston & Strawn (on behalf of Motorola) to the CMA, 16 June 2022.

parties. The scope for a competition assessment is not displaced by the existence of contractual rights.

The tender for the original PFI Agreement

- 3.34 The way in which competition may occur in a market is another important consideration. As outlined above, Motorola's submission is that the main form of competition which existed was 'competition for the market.' We should therefore assess the market by reference to competition in the tender for the original PFI Agreement. Accordingly, in this subsection we consider:
- (a) the types of competitive processes that can exist in bidding markets and, in that context, we assess whether we are minded to agree with Motorola's submission – namely that in order to assess competition in the services supplied by Airwave Solutions it is appropriate to consider the tender for the original PFI Agreement, to the exclusion of other forms of competition; and
 - (b) the extent to which,¹⁷³ in the context of a forward-looking assessment of whether features of the market affect competition, any assessment of competition in the original tender won by Airwave Solutions would be relevant to current and future market outcomes.

Competitive processes which can exist in bidding markets

- 3.35 We agree with Motorola's submission that tenders are a relevant and important form of competition in bidding markets. The original PFI Agreement played an important role in setting out the terms on which the Airwave Network was originally supplied.
- 3.36 However, competition can refer to any process of rivalry whereby firms seek to win or retain customers' business. We note that in principle, in bidding markets, the scope for competition does not necessarily conclude once a tender is awarded as other efforts may be made in order to win customers' business, and also to retain it. For example:
- (a) There may be price or non-price factors which were not agreed or could not be fully specified within the original tender and the resulting contract. Where this is the case, when a tender is awarded, firms subject to competitive constraints may have incentives to continue to perform well or deliver attractive terms after the contract is agreed.
 - (b) There may be opportunities to renegotiate contracts that have been agreed as the result of a tendering process. In deciding whether to renegotiate and

¹⁷³ If at all.

during any renegotiations, the bargaining position of both parties will likely be influenced by the extent of competitive constraints.

- (c) Competition by investing in developing new solutions and bringing these to fruition may persist even once a contract is awarded. This might be, for example, through investments in new technologies (in preparation for future tenders) or efforts made by a firm that has won a tender to implement the solution they won with (and then migrating customers away from the previously incumbent solution) or positioning themselves to attract further work or to win future tenders. Even where a winner has been selected in a tender, the winning solution does not start accruing the benefits of the customer's business until the solution is implemented. In that context, a tender and the subsequent development of the winning solution can both be thought of as parts of the competitive process.

3.37 In this case we also note that the likely need for changes to the contractual arrangements, for the clarification of uncertainties and / or to address new issues was envisaged at the time of the original contract.¹⁷⁴

3.38 Our provisional view is therefore that tenders are a relevant form of competition within bidding markets but not the only form of competition which can exist in those markets.

The role of the tender for the original PFI Agreement

3.39 It is relevant to consider whether the competitiveness of the original tender should be a key part of our competitive assessment now and, if so, how competitive it was. For the reasons that follow, our provisional view is that, while the original process provides one example in principle of what we might observe in a well-functioning market (as to which see further in Section 4), there is likely to be limited value in understanding the competitiveness of the tender for the purposes of our assessment of current market outcomes.

3.40 Our view is that the circumstances in which the original procurement occurred gave the Home Office the opportunity, in principle at least, to run an open competition for a supplier of the network and, as a result, to agree terms that constrained the price of its provision. In that competition, the winning supplier could reasonably have been expected to set the price at a level that would enable it to cover its expected costs and earn a reasonable return for the period of the contract. That is what, it appears to us, was intended to happen (see section 4 and section 6).

¹⁷⁴ See, for example, paragraph [3.27] of the recitals to the PFI Agreement quoted in paragraph 3.27 above.

- 3.41 As part of the relevant procurement exercise, the Home Office issued a Project for Procurement for the PFI Agreement in the OJEC in January 1996 , which invited bids, made specific reference to the duration (up to 19 years) of the contract that would result and did not envisage extensions.¹⁷⁵ The result of the exercise was the PFI Agreement which provided for a fixed-term arrangement ending at a point to be determined in 2019 or 2020 without terms relating to or contemplating its extension. The price was agreed using a model that assumed a [~~8~~] % return for the supplier on its investment in building and providing the network and services over that period. The terms agreed also provided for the transfer of network assets to the Home Office at the end of the fixed contract period, which could in principle have facilitated the retendering of the network and the securing of the kind of further competition we might expect in a well-functioning market.
- 3.42 However, in our provisional view, the position now the original period of the PFI Agreement has ended is materially different. The original terms of the PFI Agreement were set to apply only for the fixed period to around the end of 2019 / early 2020. The supplier's capital expenditure for providing the network and services to the end of that period were fully accounted for in its bid for the contract.
- 3.43 In that context, competition in the tender for the original PFI Agreement has limited relevance in the assessment of competition now. As well as being only set to apply for a fixed period that has now ended, some terms of the original PFI Agreement have been altered through subsequent negotiations. The outcomes of negotiations are affected by the competitive constraints which a firm faces at the time they take place and the extent to which it has incentives to offer attractive terms to retain customers. While past and extant contractual terms are likely to represent a starting point in any negotiation (or renegotiation), the eventual outcome of a negotiation – ie how far the terms move from that starting point – can be expected to be determined by the bargaining power of each party and, therefore, by the outside options it has at that time and its perception of future market circumstances such as potential future contracting opportunities with the other party and third parties, rather than those at the time of the original contractual negotiations.
- 3.44 Where elements of the original contract have continued (when in principle they could have been amended) this is more reflective of the bargaining power of each party over time and the extent of competitive constraints than the competitiveness of the tender in which they were first set. This is particularly the case in relation to a contract that was the consequence of a procurement exercise that resulted in a fixed-term arrangement without terms relating to or contemplating its extension; where that contract has been in force for over 20 years; and where there have been significant developments in market context, including the network now

¹⁷⁵ The Notice published by the Home Office in the Official Journal of the European Communities in January 1996.

having been established, changes in control of the parties, the potential for new technologies, and the extension of the contract term.

Provisional conclusion

- 3.45 Accordingly, our provisional conclusion is that the original contract terms have limited relevance for our assessment of competition now. The PFI Agreement had an end date of 2019/20 and our provisional view is that, as the market circumstances, technology and other opportunities have developed, the significance of the terms of the original contract has likely diminished over time. Current market outcomes can be expected to have been determined to a larger degree by the prevailing competitive constraints on the negotiating parties. The appropriate focus is therefore on these more recent competitive interactions, including negotiations and competition by investing in developing new solutions and bringing these to fruition, within the context of our forward-looking assessment of whether features of the market affect competition. We consider the nature of competitive constraints within these more recent competitive interactions in the following paragraphs and in section 4 of this provisional decision report.
- 3.46 We also note that the original PFI Agreement only set out the terms on which the police services could access the Airwave Network. The terms for the fire and ambulance Services were determined through separate tender processes.
- 3.47 Having reached the provisional view above, it seems to us that the question of the competitiveness of the original tender is also of limited relevance to the assessment we need to make. We note in passing that, while there were 70 responses to the OJEC notice, by April 1997 BT was the sole bidder, and knew that was the case when the price was negotiated. The NAO has reported its view that the procurement process was subject only to limited competition.¹⁷⁶ However, we have not focused our competitive assessment on that.

Scope for competition through investing in ESN

- 3.48 Whether there are competitive interactions between the Airwave Network and ESN is another factor in our assessment of the scope for competition, and which in turn feeds into our competitive assessment.
- 3.49 We have considered this point carefully, taking account of Motorola's submission that there cannot be a competitive interaction between the two networks because ESN has been designed to replace the Airwave Network, and the transition has been agreed within contracts and does not depend on the relative attractiveness of each network. This subsection begins by providing a brief overview of the role of

¹⁷⁶ NAO (2002), [Public Private Partnerships: Airwave](#) (HC 730).

competition by investing in ESN. We then consider Motorola's submissions that such competition cannot exist because:

- (a) One product/service has been ultimately designed to replace another;
- (b) there is no scope for Motorola to make greater or lesser efforts or investments depending on its incentives because contracts have been agreed setting out the terms on which customers would be served and the timing of the migration; and
- (c) the transition from the Airwave Network to ESN does not depend on the relative attractiveness of each network.

3.50 Our provisional view is that a central incentive for ESN's suppliers, including Motorola, to develop this new product innovation in a timely manner comes from the ability to derive profit as soon as possible from winning new customers from the Airwave Network and selling ESN services to them. The development of ESN also directly impacts upon Airwave Solutions' revenue and profitability through affecting the length of time that customers use the Airwave Network. This means that ESN's suppliers' efforts and investments in developing a new product innovation represent a competitive interaction with Airwave Solutions.

3.51 We also note that the prospect of ESN being developed as a replacement for the Airwave Network could, in principle at least, affect the incentives of Airwave Solutions to maintain or improve aspects of its offering to the Home Office. This incentive may arise if efforts by Airwave Solutions to improve its current offering could reduce, or more likely delay, the extent of switching by customers to ESN when it is eventually developed as users will be unwilling to switch to a new system that does not, as a minimum, provide all the features and levels of service of the existing system.

Scope for competition when one product/service replaces another

3.52 Motorola's submission is that there cannot be scope for competition between ESN and the Airwave Network because the former has been commissioned to replace the latter. In this subsection we consider whether there can be scope for competition when one product/service replaces another, in particular where the replacement product has already been chosen, and how this may apply in this case.

3.53 In our view, it is often the case that an existing product / service is ultimately entirely replaced by another and that there can still be scope for competition between them before this happens. This competitive interaction could take different forms:

- (a) Before it is launched, the provider of the new product / service may have incentives to develop its offering and make efforts to successfully bring this to fruition in a timely manner in the expectation of winning customers from the incumbent as quickly as possible. The provider of the existing product / service may also take steps to delay or mitigate the impact of the new rival by, for example, investing and innovating to keep its customers happy or by making its product / service relatively more attractive than the replacement, thereby reducing customers' incentive to move to the new product / service.
- (b) Once it is launched, there may be a period where the new product/service co-exists with the existing product/service. In this case, customers may be able to choose when to switch from one to another based on their relative attractiveness. This could create incentives for the provider of the new product/service to take steps to ensure a timely transition, whilst the provider of the existing product/service may take steps to retain its customers for a longer time by, for example, improving elements of price, quality, range or service.

- 3.54 We have considered Motorola's submission that such competition cannot exist here because ESN has already been commissioned to replace the Airwave Network. We note that ESN has not yet been brought to fruition and that in order for this to happen, this requires efforts and investment from its key suppliers (including Motorola given that it currently a key supplier to ESN¹⁷⁷). These investments and efforts have the ultimate goal of winning customers that currently use the Airwave Network as soon as possible. That, in our view, represents competition and, in our provisional assessment, those efforts constitute a form of competitive interaction between the Airwave Network and ESN that continues to exist despite ESN having been selected as the replacement for Airwave.
- 3.55 Our provisional view is therefore that even where one product / service has been designed to replace another, there remains scope for competition. This could take the form of efforts by the provider of the new product / service to bring its offering to fruition and win customers from the incumbent as quickly as possible, as well as potential efforts by the incumbent to retain its customers for as long as it can by, for example, improving its offering.

Scope for competition given the terms of transition are set in contracts

- 3.56 An additional relevant consideration, that we consider in the following subsection, is whether Motorola's obligations in relation to ESN are set out in contracts to such an extent that, even taking into account its dual role in relation to the Airwave

¹⁷⁷ We note that Motorola and the Home Office are in discussions aimed at bringing about a [§<] of the Lot 2 contract – and thereby Motorola's [§<]. See sections 2 and 5 for details.

Network and ESN, its deliverable obligations, and the timing of these, are so clearly defined that there is no scope for further influence by competition.

- 3.57 We want to understand if, absent Motorola's dual role, there would be scope for competitive incentives to influence the level of efforts or investments made by Motorola in the delivery of ESN (or by anyone else in Motorola's position as a supplier of ESN). This could include, in particular, the incentive to make efforts to introduce ESN quickly and thereby win customers from the Airwave Network sooner. Within this subsection we are not seeking to assess the extent of those incentives, but rather whether there is scope for them to exist and to give rise to competition were it not for certain features of the market.
- 3.58 We have firstly considered whether all aspects of Motorola's efforts and investments into developing ESN are stipulated in contractual agreements such that there is no further ability or incentive for Motorola (or anyone in Motorola's position) to increase its efforts in response to competitive incentives.
- 3.59 As outlined in paragraphs 3.25-3.28, we observe that in practice contracts, and particularly those that are complex and/or long term, are often not comprehensive. We also note that even where requirements are fully set out within contracts, suppliers can undertake efforts to exceed these requirements. This means that customers are likely, to an extent, to be reliant on their contractual partner being incentivised to deliver their requirements.
- 3.60 We have also considered the extent to which relevant terms can be and have been renegotiated. Such renegotiation would indicate scope for further competitive interaction between the parties.
- (a) With regard to Motorola's submission that the timing of transition was determined at the tender stage, we note that the transition has been delayed significantly from the original contractually agreed dates and may be further delayed:¹⁷⁸
- (b) When the contracts for ESN were awarded in 2015, it was envisaged that the transition of customers to ESN would begin in 2017 and be completed by late 2019.¹⁷⁹ However, these dates have been revised several times: the latest published dates in the July 2021 Full Business Case were that mass transition would begin in April 2024 and the shutdown of the Airwave Network

¹⁷⁸ Notwithstanding the terms of the DoR that the Home Office and Motorola entered into in 2016 in relation to the latter's liability for delays to ESN, the implications of which we assess further in section 5 of this provisional decision report.

¹⁷⁹ Internal Home Office Briefing, March 2016.

would be achieved by the end of 2026.¹⁸⁰ The Home Office has served a National Shutdown Notice on Airwave Solutions / Motorola to that effect.¹⁸¹

- (c) These changes were enacted through contractual adjustments. For example, CR110¹⁸² originally pushed the date for full mobilisation of the ESN Lot 2 products to April 2018 and the CAN500 reset also subsequently amended the timelines again and moved towards incremental delivery.¹⁸³
- (d) The revised ESN timetable remains subject to uncertainty. The Home Office has told us that it is unclear when exactly it would have a version of Motorola's Kodiak application that is safe, reliable and secure enough that the transition from the Airwave Network can start and be completed¹⁸⁴ but it now expects that the transition will be further delayed by at least [X] beyond 2026.¹⁸⁵

3.61 There have been other significant changes to the terms of the ESN Lot 2 contract too. For example, under the CAN500 reset, Motorola and the Home Office also agreed to replace the Wave 7000 interworking solution with Kodiak. There is also other evidence which shows that, in some cases where it has considered that the functionality provided by Motorola failed to meet the ESN contractual commitments, the Home Office has issued Contract Change Notices rather than raise disputes.¹⁸⁶

3.62 We observe that these renegotiated terms are consistent with our commentary in paragraph 3.26 about: (i) the range of factors a party may consider when contemplating the meaning, performance and / or enforcement of contract terms, especially in complex and multi-faceted contracts; and (ii) the possibility that a party in the position of a customer would prefer contracted work to be delivered following further negotiation of a contract, rather than the subject of a dispute over the original terms.

3.63 Our provisional assessment is therefore that there is scope for Motorola's incentives to affect its approach in relation to ESN notwithstanding the contractual terms relating to the transition between networks. Its contractual obligations do not necessarily mean that it cannot delay ESN or reduce its quality compared to what we might expect in a well-functioning market. There appear to us to be limits to the extent to which contracts can stipulate all aspects of Motorola's deliverable

¹⁸⁰ Home Office Hearing with the CMA on 2 March 2022.

¹⁸¹ These delays have resulted in contractual amendments, for example CR110 was agreed on 2 February 2017 and set a new, later date for full mobilisation of Lot 2 products of April 2018.

¹⁸² CR110, September 2016.

¹⁸³ Change Control Authorisation Note 500, 14 May 2019.

¹⁸⁴ Home Office Hearing with the CMA on 2 March 2022.

¹⁸⁵ Home Office Hearing with the CMA on 2 March 2022.

¹⁸⁶ Internal Home Office briefing, 2017; Internal Home Office email, February 2016; Internal Home Office email, February 2016.

obligations and, where they are set out, there is scope for them to be the subject of further negotiation. This would mean that the efforts and investments made by Motorola (or any other ESN supplier) likely depend on its incentives. These incentives come, in part, from the ability to gain profits sooner by key ESN suppliers more quickly winning customers who currently use the Airwave Network and, in the case of Motorola, the relative profitability of its ESN business and its Airwave business.

- 3.64 We note in this connection that we set out emerging views consistent with the above in our working paper about the scope for competition and market definition. Motorola has not made any submissions on our assessment of the extent to which contracts are likely to be complete in practice or the likely effectiveness of contractual provisions.

Whether the transition depends on the relative attractiveness of each network

- 3.65 There will be scope for competition between the Airwave Network and ESN if the transition from one network to the other depends on the relative attractiveness of each. Motorola has submitted that this is not the case. In this subsection, we therefore consider the extent to which the decision about when to transition from the Airwave Network to ESN will likely depend on their relative attractiveness, and whether this could create scope for competition but for the features of the market.
- 3.66 We understand that the Home Office will make the decision about if and when ESN is ready for transition based on input from users about whether it meets their needs. This decision will depend on ESN offering at least equivalent functionality to that provided over the Airwave Network and being operationally safe for users:
- (a) The Home Office told us that it will make the decision about when to begin moving onto ESN based on when it is satisfied that the technology is correct and meets the requirements of the users. It told us it would make this decision in agreement with the senior user representatives on the programme.¹⁸⁷
 - (b) Motorola told us that it believes that the blue light organisations have a big say on the matter and that their acceptance that ESN fits their purpose will affect timing and roll-out.¹⁸⁸ Motorola also told us that the functionality of the Airwave Network sets a standard to which users would likely compare ESN.¹⁸⁹
- 3.67 Once the Home Office has, in close consultation with users, decided that ESN is ready for transition, individual police forces, ambulance services and fire

¹⁸⁷ Home Office Hearing with the CMA on 2 March 2022.

¹⁸⁸ Motorola Hearing with the CMA on 10 February 2022.

¹⁸⁹ Motorola Hearing with the CMA on 10 February 2022.

authorities will transition at different points within a pre-determined window. In the transition period, users who have already moved to ESN will be able to communicate with those still using the Airwave Network through the interworking solution developed by Airwave Solutions. The Home Office has told us that this interworking solution is critical to managing the transition period.¹⁹⁰

- 3.68 We also understand that there is likely to be an element of choice amongst individual police forces, ambulance services and fire authorities about when exactly to transition within the overall window and that amongst other considerations, this will depend on their assessment of the extent to which ESN meets the needs which the Airwave Network is currently meeting:
- (a) The Home Office told us that it expects that mass transition to ESN will take place over 27 months.¹⁹¹ It said that it is working with user organisations to decide the order of transition and the biggest single factor which determines this is when coverage will be available in a particular area.¹⁹²
 - (b) The Scottish Ambulance Service told us that the extent to which individual organisations can decide when to transition to ESN has yet to be fully agreed. However, it expects that no user organisation will be forced to migrate to ESN until it has adequate assurance that it is a credible alternative to the Airwave Network in terms of coverage, resilience, cost and functionality.¹⁹³
 - (c) The National Fire Chiefs Council (NFCC) said that the transition will be user-led taking account of internal factors, such as other programmes of work and resource constraints, and external factors, such as the availability of operationally acceptable ESN coverage and that ESN is fit for purpose and does not pose additional operational risk.¹⁹⁴
 - (d) The Police said that no Chief Constable should be expected to agree to transition their force to ESN unless they are assured that the new system will confer at least the same operational capabilities as currently provided by the Airwave Network.¹⁹⁵
- 3.69 Accordingly, we consider that the transition from the Airwave Network to ESN does depend on the relative attractiveness of both networks. Users, who are critically dependent on the quality and reliability of the network, will move to ESN when those matters are assured. Our provisional view is that, in a well-functioning market, there would be scope for competition through Motorola having incentives

¹⁹⁰ Home Office Hearing with the CMA on 2 March 2022.

¹⁹¹ Home Office Hearing with the CMA on 2 March 2022.

¹⁹² Home Office Hearing with the CMA on 2 March 2022.

¹⁹³ Scottish Ambulance Service response to Q11 of the RFI dated 17 December 2021.

¹⁹⁴ NFCC response to Q11 of the RFI dated 17 December 2021.

¹⁹⁵ Police response to the RFI dated 13 January 2022, covering email received 22 March 2022.

to bring ESN to fruition in a successful and timely way with Airwave Solutions also potentially undertaking efforts to delay or reduce the extent of switching.

Provisional conclusion

- 3.70 Taking all the above points into account, we draw the provisional conclusion that there is material potential for competitive interaction between ESN and the Airwave Network and between Motorola (as a key supplier of ESN) and Airwave Solutions. The incentive for key suppliers to invest in ESN comes from the ability to gain profits sooner by more quickly winning customers who currently use the Airwave Network. The development of ESN is also likely to have an impact on the profitability of Airwave Solutions as it will affect the length of time that customers use the Airwave Network. Airwave Solutions may therefore also have incentives to improve its offering to delay or reduce switching. These incentives could be affected by features of the market, including Motorola's dual role – which we consider in section 5 of this provisional decision report.
- 3.71 Our further provisional conclusion is that the scope for competition through investing in ESN is not eliminated by the factors Motorola has identified, such as ESN being a replacement for the Airwave Network or all elements of ESN being set out in contracts.

The role of the contractual provisions established in 2016 in our competitive assessment

- 3.72 We have set out above (see paragraph 3.26) our preliminary observations about the effect in principle of contractual agreements on the existence of a market and the scope for conducting a competition assessment. We note amongst other things that contractual terms may be the subject of further negotiation as the market, and parties' market power, evolves. We explain our provisional view that the existence of such an agreement between the Home Office and Airwave Solutions does not in itself remove the scope for competition or preclude the conducting of a competition assessment. In the following subsection we consider specifically whether there has been scope for competition through negotiations from 2016 onwards – when Motorola acquired Airwave Solutions and the parties entered into the HoTs.
- 3.73 Motorola's submissions in this context are that there has been no such scope for competition as the terms on which the blue light services access the Airwave Network were agreed in the 2016 negotiations and set out in the resulting HoTs. It has also told us that, while there were times when competition could have occurred, it did not because of the free and informed choices the Home Office made.
- 3.74 In this subsection we therefore consider both:

- (a) The extent to which there has been scope for competition through negotiations since 2016, taking account of Motorola's view that there has been no requirement to negotiate after that date; and
- (b) the role of the Home Office's choices in our competitive assessment.

3.75 The provisional conclusion we reach is that there has been scope for competition through negotiation between the parties since 2016. The position they agreed upon then did not displace that scope nor preclude either a competition assessment or findings of competitive distortion.

The scope for competition through negotiations since 2016

3.76 Here we consider whether there has been scope for competition through negotiations since 2016. We look firstly at each party's expectations about the 2016 negotiations and the extent to which they perceived that there would be further negotiations if longer extensions to the period of operation of the Airwave Network were required. We then consider the extent to which such negotiations have occurred in practice.

3.77 Based on the evidence we have considered, it does not appear to us that a long term extension of the Airwave Network was envisaged by the Home Office at the time of the 2016 negotiations. The purpose and the focus of the negotiations of the HoTs (see section 4 and appendix D) from its perspective was the alignment of the various Airwave contracts to ensure the orderly closure of the Airwave Network and its (anticipated) replacement by ESN by the end of the PFI Agreement period in 2020. The Home Office sought to achieve that while (i) providing enough flexibility to account for any short delays if they arose, particularly in the take-up of ESN in various regions, and (ii) ensuring that the duration of the extensions reflected the conflicting objectives of the Home Office to minimise cost and the objective of Motorola to maximise cash flow.

3.78 The Home Office also considered at the relevant time that any substantial extension of the period of operation of the Airwave Network presented significant legal risks, as well as commercial ones (this is considered in more detail in section 4 and appendix D). Insofar as it might have been prepared to consider longer extensions if necessary in due course, the evidence is consistent with them being subject to further negotiation from the Home Office's perspective.¹⁹⁶

3.79 Motorola appears to have entered the negotiations with different expectations, according to its internal business documents (and notwithstanding what it had told

¹⁹⁶ Email exchange between the Home Office and Motorola, January 2016.

the Home Office about the delivery of ESN).¹⁹⁷ In particular, that there would be extensions of the operation of the Airwave Network beyond 2019. It was modelling for itself the position where those extensions ran to 2024.¹⁹⁸ Motorola's February 2016 update to its board¹⁹⁹ following the negotiations indicates that:

- (a) It assumed that the Airwave contracts would be extended by at least 18 months to 30 June 2021 at the current price and that this would result in a significant improvement (of \$[X] million) to the November 2015 business case for the Airwave Solutions acquisition; and
- (b) longer extensions beyond 30 June 2021 would involve negotiations, not automatic extensions (as illustrated by the assumption put to its board that a discount of [X]% would be given from 2022).²⁰⁰

3.80 The point in sub-paragraph (b) above is consistent with other internal Motorola documents we have seen. They also show that Motorola's senior management expected that any substantial extension to the Airwave Network would require negotiation (see Appendix D).

3.81 In that context, we are not minded to regard the 'default price' set by the HoTs as the price which would necessarily exist for any extended period of operation of the Airwave Network after 2019. Rather, it was an outside option²⁰¹ that the Home Office would have in any future negotiations and could be subject to further negotiation depending on other outside options that may be available at the time.

3.82 We also observe that, consistent with each party's expectations, there have been subsequent negotiations (the implications of which for our competition assessment we consider in section 4 of this provisional decision report):

- (a) Since 2016, there have been further negotiations in 2018 and 2021 which led to amendments to the terms on which the blue light services access the Airwave Network.

¹⁹⁷ Internal Home Office presentation, 7 October 2015, ESMCP Full Business Case October 2015. ESMCP Transition Plan History 09/09/2015.

The initial delivery timetable for putting ESN in place prior to the transition between networks was extended from 17 to 21 months in consultation between the Home Office, EE and Motorola. Internal Home Office document, 6 October 2015.

During negotiations, the Home Office had offered to increase that timetable to 24 months, but both EE and Motorola stated that 21 months would be sufficient. Internal Home Office document.

Minutes of the Motorola kick-off meeting, 7 December 2015.

Email from Motorola to Home Office, 27 January 2016, from Motorola's [X] to the Home Office's [X].

¹⁹⁸ For example: Internal Motorola presentation, January 2016; internal Motorola email, January 2016.

¹⁹⁹ Internal Motorola presentation, February 2016.

²⁰⁰ Internal Motorola email, December 2017; Internal Motorola presentation, 2017.

²⁰¹ See: [CC3 Revised](#), paragraph 176: this refers to the alternative strategies that are open to the buyer and is often the crucial determinant of countervailing buyer power.

- (b) Motorola, in its submissions, appears to accept that terms have been amended over time, including after 2016. It told us that, whilst other suppliers take the position that once a contract is signed it cannot be adjusted, where possible it tries to accommodate the customer, including by providing discounts that it was under no obligation to provide.²⁰²
- (c) We have also seen evidence that suggests that negotiations have not solely been initiated by the Home Office (and regardless of who initiated them, both parties engaged in discussions that shows they regarded the price of any extension of the Airwave Network as subject to negotiation):
 - (i) There is evidence that in late 2017/early 2018, Motorola was encouraging the Home Office to start renegotiations (rather than the other way around);²⁰³
 - (ii) in 2018, Motorola set out in documents prepared for internal business purposes what it was prepared to trade off within negotiations;²⁰⁴ and
 - (iii) in relation to the 2021 negotiations, Motorola set out its objectives and strategy for the upcoming negotiations before the Home Office had approached it²⁰⁵ and, as part of these negotiations, it made the case to the Home Office that the Airwave core charge should increase by £[3<] million to fund its proposed capex investment.²⁰⁶

3.83 We have considered Motorola's view that the only amendments made since 2016 have been due to unilateral demands by the Home Office for ex gratia discounts to the price for the continued operation of the Airwave Network agreed in the HoTs.²⁰⁷

3.84 That one party has initiated a discussion about prices and terms does not appear to us to mean there is not a negotiation nor inform whether there are features of the market distorting competition. Any negotiation will start with one party making a request of the other. Whether such a request is made, and how the other party chooses to respond, can be indicative of competitive conditions. The party making the demand is more likely to be successful if it has the implicit or explicit threat to pursue an outside option, whilst the party being presented with the demand has

²⁰² Motorola Hearing with the CMA on 10 February 2022.

²⁰³ Email exchange between the Home Office and Motorola, February 2018 and email exchange between the Home Office and Motorola, November 2017.

²⁰⁴ Internal Motorola email, October 2017.

²⁰⁵ Internal Motorola presentation, August 2020.

²⁰⁶ Internal Motorola presentation, June 2021.

²⁰⁷ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 4.

the choice of whether to accept it or not. This choice will also likely be influenced by the wider market context, such as reputational concerns and consideration of 'trade offs' against other possible contractual concessions.

- 3.85 Accordingly, our provisional view is that the position reached in 2016 should not be regarded as displacing any scope for subsequent competition through negotiations nor as precluding our competition assessment and the possible finding of competitive distortions.

The role of choices made by the Home Office in our competitive assessment

- 3.86 As outlined above, Motorola has submitted that the scope for competition is determined by choices made by the Home Office and, as a result of these decisions, there are instances where competition could have taken place but did not. In this subsection we consider two potential implications of these submissions – first that our competitive assessment should include consideration of how competition may have evolved had the Home Office made different choices and second that the fact that the Home Office had choices available is indicative of the market working well.
- 3.87 We firstly note that the focus of a market investigation is on looking at a market on a current and forward-looking basis to assess whether features of the market are preventing, restricting or distorting competition. Whilst it can be informative to understand how certain market characteristics have evolved in the past, and the reasons for this, undertaking an assessment of how competition could have evolved had the Home Office made different choices is less relevant.
- 3.88 We have also considered whether the fact that the Home Office might have had choices available in the past means that the market is necessarily working well. Our starting point is that even if the Home Office did have options available in the past, the key question is whether features of the market restricted or distorted those options.
- 3.89 In addition, we note that even if options were in theory available to the Home Office this does not mean that these were realistic or desirable. Consistent with this, we note that the evidence available to us suggests that in practice the options available to the Home Office may have been limited and / or diminishing for some time:
- (a) Whilst the Home Office could in theory have chosen to run a competitive tender process for the period 2020-2026, this might not have been realistic owing to reasons including the initial anticipation (in early 2016) that ESN would be ready to replace the Airwave Network at the end of the PFI Agreement in 2019 / 2020, subsequent uncertainty about when ESN would be available, the significant lead times associated with procuring any

potential replacement network, and the terms of the PFI Agreement which limited the ability to acquire or transfer assets used in the Airwave Network (all of which matters we assess later in this provisional decision report).

- (b) The Home Office could have procured ESN as an alternative network alongside the Airwave Network, but it seems highly likely that operating two competing networks would not have been economically viable. In fact, in its review of options (see paragraph 4.75), the Home Office considered whether to commission a second TETRA network and reached such a conclusion on economic viability.^{208 209}
- (c) Whilst the Home Office could in theory have chosen different deal durations (for extending the period of operation of the Airwave Network) offered by Motorola in 2018, its main objective was in incentivising the delivery of ESN as soon as possible (see section 4). It is also likely that these 'deals' could have been better in the absence of features of the market (such as the lack of alternative options available to the Home Office).

3.90 Accordingly, it seems to us that the existence of choices (particularly where those choices are limited) is not sufficient in and of itself to conclude that a market is working well and that features of the market cannot adversely affect competition.

Overall provisional conclusions

3.91 We have therefore reached these overall provisional conclusions on the following points, taking account of the submissions Motorola has made about them:

- (a) **That there is no market to analyse and that this matter is simply about a contract between two willing parties:** This is not our (provisional) assessment. There are a number of contracts within the market and, whilst the Home Office has in recent years overseen these, they have different terms and serve different user needs. Neither the contract between Airwave Solutions and the Home Office, nor those with other users, preclude the existence of a market that may be subject to a competition assessment. There is scope for competition during the lifetime of the contracts and for the conditions of competition to evolve over that period.
- (b) **That competition is for the market and the 2000 PFI procurement should be a key part of our competitive assessment:** Tenders are a relevant form of competition in this market. Our provisional view nonetheless is that there is

²⁰⁸ Home Office Briefing, 2017.

²⁰⁹ We also note that in or around 2004 / 05, when the Cabinet Office ran a competitive tender process for a new communications system for ambulance services in England and Wales, it found that competition was limited, in part because of the significant cost of putting in place a second, competing national network - Ambulance Radio Programme response to Q3 of the RFI dated 17 December 2021.

also scope for other forms of competition – such as negotiations and dynamic competition – to exist once competition for the tender has concluded. These can occur over the life of, and in connection with the end of, the relevant contract. We consider that there is likely greater value in understanding the nature of competitive constraints within these more recent competitive interactions.

- (c) **That there is no competitive interaction between the Airwave Network and ESN:** Our provisional view is that there is a competitive interaction between the networks and between Motorola (as a key supplier of ESN) and Airwave Solutions. In the absence of features of the market, such as Motorola's dual role in relation to the networks, the incentive for key suppliers (including Motorola) to invest in ESN comes from the ability to gain profits sooner by more quickly winning customers who currently use the Airwave Network (and who will move to ESN when its safety and quality is assured). The development of ESN is also likely to have an impact on the profitability of Airwave Solutions as it will affect the length of time that customers use the Airwave Network.
- (d) **That there is no scope for competition since the negotiation and agreement of the HoTs in 2016:** The negotiations in 2016 did not involve discussions of what would happen if long extensions of the period of operation of the Airwave Network were required. The Home Office's objectives at that time were to ensure the orderly transfer to ESN then anticipated at the end of the PFI Agreement in 2019 / 2020. Motorola expected to have to negotiate long term extensions and that any extensions beyond 2021 would involve negotiation of a new price, which it envisaged could be a potential [X]% reduction in revenue. The default price set by the 2016 HoTs is therefore not necessarily a fixed price in the sense of being the price that either of the parties expected to be in place for the longer term if the Airwave Network was to continue in operation significantly beyond 2020. Both parties envisaged that there would be a need for further negotiations and a new price in these circumstances (or adopted a position consistent with that being the case). Any price agreed as a result of subsequent negotiations can therefore be regarded as the outcome of the market situation at that later time.²¹⁰

3.92 On those bases, in our provisional view, the current situation in relation to the Airwave Network should not be treated as merely the continuation of the arrangements agreed at the time the PFI contracts were entered into with no

²¹⁰ Even if the terms entered into in 2016 represented an unfavourable deal for the Home Office, locking-in pricing for the long term, and this reflected the weak negotiating position the Home Office then found itself in, there would still be scope in a well-functioning market for future competitive conditions to evolve so as to strengthen its outside options, and for this to be reflected in future negotiations.

scope for subsequent competition through negotiations or our competition assessment. The present situation is capable of being analysed by examining current market dynamics, how they have evolved and the extent to which such dynamics might be the result of features distorting competition within the relevant market. We carry out this analysis in sections 4 and 5 of this report, having first defined the relevant economic market.

Market definition

- 3.93 Market definition is the process to identify the boundaries within which competition occurs for particular goods and services, such as which firms compete for which customers' business.
- 3.94 Defining the market can help to focus on the sources of any market power and provides a framework for the assessment of the effects on competition of features of a market.²¹¹ In doing so the CMA may conclude that the market should be defined more widely or more narrowly than the goods and services or areas of supply set out in the terms of reference.²¹²
- 3.95 As set out in our Guidance, market definition is a useful tool but not an end in itself, and identifying the relevant market involves an element of judgement. The boundaries of the market do not determine the outcome of our competitive assessment of a market in any mechanistic way. The competitive assessment takes into account any relevant constraints from outside the market, segmentation within it, or other ways in which some constraints are more important than others.²¹³ Market definition and the assessment of competition are not distinct chronological stages of an investigation but rather are overlapping and continuous pieces of work, which often feed into each other.
- 3.96 Our starting point for assessing market definition is the set of products and services identified in the terms of reference for this investigation, namely 'the supply of LMR network services for public safety (including all ancillary services) in Great Britain'.²¹⁴
- 3.97 We consider the two main dimensions of market definition – the product dimension and the geographic dimension – in turn.

²¹¹ [CC3 \(Revised\)](#), paragraph 132.

²¹² [CC3 \(Revised\)](#), paragraphs 131 and 26.

²¹³ [CC3 \(Revised\)](#), paragraph 133.

²¹⁴ [Terms of Reference](#), 25 October 2021, paragraph 3.

Product market definition

3.98 In forming our views on market definition, we consider the degree of demand-side substitutability. In some markets, supply-side constraints will also be important.²¹⁵

Parties' views

3.99 We have received several submissions which are relevant to our assessment of market definition:

- (a) Motorola submitted that ESN will replace the Airwave Network and there is no competitive relationship between the Airwave Network and ESN;²¹⁶
- (b) the Home Office submitted that the fact that ESN is intended to replace the Airwave Network confirms that ESN is a potential demand and supply side substitute for the Airwave Network and could be in the same economic market;²¹⁷
- (c) EE submitted that the CMA should consider the dynamic competitive interactions between the Airwave Network and ESN;²¹⁸ and
- (d) the Home Office submitted that the inclusion of ancillary services is appropriate as the CMA should consider all services that are potentially relevant to an adverse effect on competition.²¹⁹

3.100 In the following subsection we consider:

- (a) Whether LTE network services for public services (which describes the prospective ESN services) should be included as part of the relevant market; and
- (b) the extent to which ancillary services (including interworking²²⁰) are in the same product market as the LMR network, or whether these ancillary services are a separate product market.

LTE network services (ESN)

3.101 ESN is the network which is being designed to replace the Airwave Network. Among other benefits, it is expected to be able to provide users with greater mobile broadband functionality than the Airwave Network. The government put

²¹⁵ [CC3 \(Revised\)](#), paragraph 130.

²¹⁶ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 155.

²¹⁷ [Home Office response to the Issues Statement](#), 10 January 2022, paragraph 15.

²¹⁸ [EE's response to the Issues Statement](#), 14 January 2022, paragraph 5.

²¹⁹ [Home Office's response to the CMA's market investigation reference](#), 26 August 2021, page 3.

²²⁰ The technological solution enabling users to communicate across both the Airwave Network and ESN during the period of transition between those networks.

contracts for the delivery and roll-out of ESN out to tender in 2014 and awarded them to multiple suppliers (including Motorola) in 2015. It is intended that once ESN has been built, and all users transferred to it, the Airwave Network will be switched off. This is currently expected to be 2026 at the earliest.

Provisional assessment

- 3.102 Although ESN is still in development and therefore is not available in the short term as an alternative for customers of the Airwave Network to switch to, our provisional view is that there is scope for competitive interactions between ESN and the Airwave Network, as described in preceding paragraphs of this section.
- 3.103 Static competition refers to competitive efforts taken by firms that results in customers being won or lost in the short term (for example, within a year). This might include reducing the prices offered in a negotiation. Dynamic competition refers to competitive efforts that lead to winning customers sometime after the competitive effort is made (for example, investments made today may result in winning new customers several years in the future). Both dynamic and static competition are relevant in this market. A supplier may face different constraints when competing statically than when it competes dynamically. Therefore, when considering the appropriate product market, we have considered demand-side and supply-side substitutability through both lenses.

Demand-side substitutability

- 3.104 Substitutability in the short run may be different from substitutability in the longer term. In the short run firms compete using the products in their existing portfolios. In the longer term, firms may compete by improving their product portfolios.²²¹ This is relevant to our assessment of substitutability in this case because, as discussed in paragraphs 3.35-3.38, competition in the supply of LMR network services for public safety takes place (or there is scope for competition to take place) in a number of different ways, with some being broadly short term in nature, with others taking place over the longer term.
- 3.105 Dynamic competition between the Airwave Network and ESN falls within this category of longer term competition, because it involves the efforts and investments made by ESN's suppliers to develop a new offering²²² which would serve as a replacement for LMR network services and therefore 'steal' Airwave Solutions' customers in a timely manner (ie induce demand-side substitution). It

²²¹ [CC3 \(Revised\)](#), paragraph 136.

²²² That is, a set of products and services which, although they differ in terms of their pricing and supplier structure, would as a whole replace the Airwave Network and services. For the purposes of market definition, it does not appear to us that the differences in pricing and supplier structure affect that definition. As far as users are concerned, both the Airwave Network and services and ESN comprise the network and services they will use for emergency communications services.

can also include efforts by Airwave Solutions to retain customers and prevent or delay them switching to ESN.

- 3.106 The CMA's assessment of the relevant market in the context of this sort of longer term competition may be concerned with identifying firms that have the capability to introduce new or improved substitute products.²²³ In this respect:
- (a) ESN is being developed to meet the same fundamental demand-side need that the Airwave Network has met, namely providing communications network services including mission-critical push-to-talk (MCPTT) functionality for Great Britain's blue light emergency services. In this sense, the Airwave Network and ESN are the only two solutions that exist or are in development that meet or have the potential to meet this demand-side need.
 - (b) ESN is planned ultimately to replace the Airwave Network for Great Britain's emergency services when it is developed. Once the Home Office, in consultation with users, has decided that ESN is ready for transition, Airwave Solutions' customers are expected to switch to ESN. The transition to ESN is expected to happen over a period of time. Individual customers will be able to influence the schedule for switching and will have some choice as to when they switch. In this period users who have already moved to ESN will be able to communicate with those still using the Airwave Network through the interworking solution developed by Airwave Solutions. There are no other alternatives to ESN under development, and no others are expected to be developed. In this respect, from the perspective of Airwave Solutions, ESN represents the only significant long term competitive threat that could reduce its customer base and Airwave Solutions stands to lose 100% of its customer base to ESN in due course.
 - (c) From the perspective of ESN's key suppliers, all (or virtually all) of the profits they can expect to earn by developing ESN's services and selling them to customers will be derived from organisations that are currently customers of Airwave Solutions. If ESN's key suppliers were to reduce the efforts or investments that they were making to develop ESN, such that ESN would be delayed or otherwise deteriorated as a viable alternative to the Airwave Network, the beneficiary of such a reduction in innovation efforts would be mainly or exclusively Airwave Solutions.
- 3.107 In light of the above, any efforts and investments made by ESN's key suppliers to develop ESN can be interpreted as efforts towards attracting customers away from Airwave Solutions and replacing it as a solution for Airwave Solutions' customers. Because Airwave Solutions' only source of demand-side competition comes from dynamic competition from ESN's key suppliers developing a new solution, and

²²³ [CC3 \(Revised\)](#), paragraph 136.

ESN's only demand-side alternative from which ESN can attract customers is the Airwave Network, our provisional view is that the market includes both the existing TETRA Airwave service and the LTE network services for public services (ie ESN).

- 3.108 In assessing the demand-side substitutability between the Airwave Network and ESN, we have thus far focused on longer term substitutability. We note that in the short run, and in particular prior to the development of ESN, there is no scope for demand-side substitution between the Airwave Network and ESN: a customer that is negotiating with Airwave Solutions cannot realistically seek to get a better deal by threatening to walk away from negotiations and switch to ESN, because ESN is unavailable now as an option. Accordingly, while market definition would often take account of short run competition, in this case our focus on longer term substitutability is appropriate. We take the lack of short run substitutability into account in our competitive assessment where it is relevant (see section 4 of this provisional decision report).

Ancillary products and services

- 3.109 There is a variety of ancillary products and services which Airwave Solutions provide in addition to access to the core network itself. These include radio terminals, control rooms, training, the provision and installation of equipment within vehicles, interworking services and access to its testing facility.

Provisional assessment

- 3.110 We have considered the extent to which ancillary services are in the same product market as the LMR network, or whether they are a separate product market on the basis of demand-side substitution or, in its absence, supply-side considerations.
- 3.111 The way in which these products and services are provided differs across the blue light services:²²⁴
- (a) The Police Service Contracts are for the provision of the Airwave Network and connectivity to it, its maintenance and associated service levels and a service desk, with the Police Forces separately contracting for other services. These other services include their own control room services and other additional Airwave products that interact with a third party ICCS. Individual police forces are able to purchase additional products or services from Airwave Solutions, including enhanced coverage, support services and control room services. The prices for these are set out in the police menu pricing catalogue at prices which have been agreed with the Home Office.

²²⁴ Motorola response to Q3 of the RFI dated 25 October 2021.

- (b) Under their contracts, the ambulance services receive a managed service, which provides them with control rooms, air-to-ground, vehicle installation, radio terminals and a service desk (all via Bundle 2, with a number of services provided via subcontractors) in addition to access to the core network (via Bundle 1). Fire and rescue services also receive a managed service including access to the Airwave Network, radios, equipment to connect control rooms to the network and a service desk. The ambulance and fire services can also decide to purchase additional products and services at pre-agreed prices set out within Airwave catalogues.

3.112 On the demand-side, evidence from users suggests that many user groups report there being little or no alternatives available for many ancillary services:

- (a) The Ambulance Response Programme (ARP) said that ambulance trusts need to procure some discretionary services from Airwave Solutions. The most common of these is the Airwave radio service which forms part of the end-to-end managed service (comprising control rooms, radio terminals and access to the core network) which at present can only be procured through Airwave Solutions.²²⁵
- (b) The NFCC said that most of the additional products and services which individual fire services procure can only be obtained through Airwave Solutions because of the nature of the Firelink contract and the need for these products and services to directly interface and work on the Airwave Network and with existing Airwave equipment.²²⁶
- (c) The Scottish Fire and Rescue service said that under its current managed service provision it is not possible to procure services or equipment other than via the Airwave call off contract.²²⁷

3.113 As explained in the CMA's Motorola/Airwave merger control decision in 2016,²²⁸ before radio terminals and software can be used on the Airwave Network they must be tested to ensure they will not damage the service received by other users. Airwave Solutions' testing facility is the only facility that can confirm this.

3.114 In addition, the Home Office told us that any alternative system (such as ESN) will need to be able to interwork with the Airwave Network to allow for a safe transition to the new network.²²⁹ The evidence we have seen suggests that the Home Office considered that delivering the interworking solution depended on gaining access to and altering Airwave Solutions' infrastructure, which it did not consider that

²²⁵ Ambulance Radio Programme response to Q6 of the RFI dated 17 December 2021.

²²⁶ NFCC response to Q11 of the RFI dated 17 December 2021.

²²⁷ Scottish Fire and Rescue response to Q7 of the RFI dated 11 January 2022.

²²⁸ [Motorola/Airwave](#), paragraph 52.

²²⁹ [Home Office response to the Issues Statement](#), 10 January 2022, paragraph 26.

Motorola would allow for commercial and operational reasons.²³⁰ This suggests that the customer (in this case the Home Office) needs to choose the same provider for interworking as for the overall network or is at least dependent on the incumbent supplier (ie Airwave Solutions) on facilitating the development of such a solution.

- 3.115 Where some users have identified or considered potential substitutes, they report that in practice their ability to switch away from using Airwave Solutions for these ancillary services can be limited by factors including existing contractual provisions and the need for these solutions to technically interface with the Airwave Network:
- (a) The Scottish Ambulance Service reported that the procurement of managed services for ICCS and terminal provision can be competed. However, when it explored removing handheld terminals from its current service bundle, Airwave Solutions only offered a [~~8~~] % reduction in its service charge, whereas the Scottish Ambulance Service considered that a reduction of at least 50% is more reasonable.²³¹
 - (b) The ARP reported how it has amended the agreement with Airwave Solutions to create competition and a more modular approach for some discretionary services, including the de- and re-installation of radio equipment and the provision of additional control room capacity. However, it needs to pay a fee for accreditation of all services that use the Airwave Network.²³²
- 3.116 In contrast, several police forces reported there being greater competition for certain ancillary services. For example, the West Midlands Force told us that it only buys services from Airwave Solutions which are offered on the menu services. It procures other products/services directly from the relevant suppliers on a competitive basis, including handheld devices, vehicle radios, ICCS and Airwave support services.²³³ Police Scotland said that it purchases ancillary equipment through competitive processes directly from the suppliers, including handheld and vehicle devices as well as ICCS systems.²³⁴
- 3.117 Whilst some customers report there being greater competition for certain ancillary services, overall the evidence suggests that for many customers it is either difficult, or in some cases not possible, to choose a different provider for ancillary services than for the overall network. This suggests that many customers do not have the option to choose a separate provider for these services. We therefore provisionally consider that the competitive conditions for these ancillary services are likely to be similar as those for the overall network services. On this basis our

²³⁰ Internal Home Office email, 11 February 2016.

²³¹ Scottish Ambulance response to Q7 of the RFI dated 17 December 2021.

²³² Ambulance Radio Programme response to Q6 of the RFI dated 17 December 2021.

²³³ Police consolidated response to Q8 of the RFI dated 13 January 2022.

²³⁴ Police Scotland response to the CMA's working papers, 16 May 2022.

provisional view is that ancillary services should be included as part of the relevant market.

Geographic market definition

- 3.118 As noted above, our terms of reference concern the supply of LMR network services (including all ancillary services) for public safety in Great Britain.
- 3.119 In addition, we understand that LMR services (including all ancillary services) are typically acquired and supplied to the whole of Great Britain. A key reason for this is to ensure that emergency services operating across different parts of the country are able to communicate with each other.
- 3.120 Therefore, for the purposes of this investigation, we provisionally conclude that the scope of the geographic market is Great Britain.

Provisional conclusions

- 3.121 Our provisional view is therefore that the relevant market is the supply of communications network services for public safety and ancillary services in Great Britain.

4. COMPETITIVE ASSESSMENT (1): MARKET FEATURES AND THE AIRWAVE NETWORK

Competitive effects – introduction and provisional summary

- 4.1 In this section of the report we set out our provisional assessment of whether there are features of the market for the supply of communications network services for public safety which distort competition. Our assessment, which is supported by the material in Appendices B,C,D and E in particular, focuses on whether there are such features which affect the supply of the Airwave Network and services (and in section 5 below we consider whether there are also features relating to ESN and the transition of users between networks that have a distortive effect).
- 4.2 The provisional conclusion we draw is that, in a well-functioning market, we would expect arrangements to be in place at, or close to, the end of the original fixed-period of the PFI Agreement either to replace the Airwave Network with a competitively priced new and enhanced service or to secure a competitively priced continuation of the operation of the existing network. Our provisional assessment is that this has not happened because: (i) the Home Office did not, and does not, have the alternative options that would have enabled such replacement or continuation to occur; and (ii) other factors, such as the timely delivery of a competitively tendered replacement network (ESN), did not materialise.
- 4.3 The following features of the market,²³⁵ in our preliminary judgement, give Airwave Solutions / Motorola market power and distort competition:
- (a) The Airwave Network is a critical piece of infrastructure on which the emergency services in Great Britain, and ultimately lives, depend.
 - (b) The Airwave Network is the only network of its kind in Great Britain and is provided by a monopolist. No other such networks exist nor are they likely to be constructed and ready for use before ESN is able to replace it.
 - (c) The Airwave Network assets have not transferred to the Home Office under the terms of the PFI Agreement, Airwave Solutions still owns them (and the related business) and the Home Office cannot retender or realistically threaten to retender their provision.
 - (d) The longer than anticipated lead time for the delivery of ESN and its replacement of the Airwave Network: it will not be ready to replace the Airwave Network until at least 2026 and [X] possibly [X] later.

²³⁵ Described more fully in section 7 of this provisional decision report.

- (e) The Home Office and the emergency services in Great Britain are locked-in with the incumbent supplier of communications network services – Airwave Solutions (and Motorola) – beyond the period over which its prices were, or should have been, constrained by the terms of the PFI Agreement (and Airwave Solutions should have recouped its investment and a reasonable return).
- (f) The Home Office has very weak bargaining power.
- (g) The asymmetry of information between the parties.
- (h) The lack of effective constraints provided by the terms of the PFI Agreement on the price of the provision of the network after 2019, including the benchmarking provisions which are likely to be ineffective.

4.4 In the following subsections, we first describe the well-functioning market we use as the benchmark against which to assess the present market situation. We then set out our provisional assessment of how the market has developed since the entering into of the PFI Agreement and how the Home Office's options and other competitive constraints diminished over time or did not materialise, resulting in the features of the market that distort competition and give Airwave Solutions / Motorola market power.

The well-functioning market

- 4.5 The Act requires that, in identifying an AEC, we must assess whether 'features' of the market distort competition. It does not specify a theoretical benchmark against which to measure an AEC, but our Guidance provides broad principles derived from Competition Commission and CMA past practices.
- 4.6 The Guidance says (in paragraph 320) that, 'In the absence of a statutory benchmark, the [CMA] defines such a benchmark as 'a well-functioning market' (see paragraph 30) — ie one that displays the beneficial aspects of competition as set out in paragraphs 10 to 12 but not an idealized perfectly competitive market.' Paragraphs 10-12 of the Guidance describe competitive processes that lead to competitive outcomes.²³⁶ The benchmark 'will generally be the market envisioned without the features causing the AEC.'²³⁷

²³⁶ The process of rivalry as firms seek to win customers' business, with firms having incentives to meet the existing and future needs of customers as effectively and efficiently as possible – by cutting prices, increasing output, improving quality or variety, or introducing new and better products.

²³⁷ '.... but there can also be reasons "to depart from that general concept, for example, if features are intrinsic to the market but nevertheless have anticompetitive effects (as in the case of a natural monopoly) or if the nature of competition in the market is defined by arrangements put in place by Government.' See paragraph 30 of the guidance.

- 4.7 To assist us in assessing the extent and effectiveness of competition in this case, we have considered a well-functioning market for the supply of communications network services for public safety. That is, one where competition is effective having regard to the nature of the product and the circumstances in which it is supplied.
- 4.8 We have taken the view that, in a well-functioning market, from around 2020²³⁸ there would be effective competitive interactions between the Home Office and a supplier of communications network services for public safety. These competitive interactions would give the Home Office alternative options and allow it to choose (or threaten to choose) a different supplier and effectively discipline any supplier that did not offer competitive prices or terms. Such a market would generate prices, profits and quality of service that were at competitive levels.
- 4.9 For example, a well-functioning market might be one where:
- (a) At the end of the original fixed period of the PFI Agreement, the Home Office would be able to (re)tender for the provision of LMR network services for public safety using the infrastructure that had already been built and paid for and where sufficient effective competitors would participate in such a tender to produce a competitive outcome; or alternatively,
 - (b) the Home Office successfully tendered amongst competing bidders for the delivery of a new and enhanced replacement network which was in position to replace the existing network when the fixed-period of the PFI Agreement ended, and the process to choose that network involved sufficient competing alternatives and resulted in competitive prices for that new network.
- 4.10 In these cases, the process of competition would be expected to lead to the Home Office paying competitive prices for the network and services in the period after the original fixed period of the PFI Agreement. We observe that they are plausible possibilities in a market like the one under consideration. The terms of the PFI Agreement were in principle broadly consistent with the first. The second is broadly reflected in what the Home Office sought to achieve in its procurement of ESN in 2014/15. Accordingly, while they are hypothetical, they are illustrations of a theoretical benchmark which we keep in mind to help us in our competition assessment.
- 4.11 In coming to the provisional view above on the appropriate approach to the well-functioning market, we have taken into account that, when commenting on our

²³⁸ Although through negotiation in 2016 the Home Office and Motorola agreed to a common end date of 31 December 2019 for all Airwave Contracts with Blue Light services, for the purpose of the well-functioning market, we do not consider that such precision is needed, as this end date may itself not be the result of features of the market. As, prior to the 2016 negotiations, the various contracts were due to come to an end between 2016 and 2020, we consider that the period from around 2020 onwards is appropriate for the purpose of our analysis.

profitability analysis as set out in our published working paper, Motorola said that ‘it is nonsense to pretend that in a “well-functioning market” the Home Office would have invited bids for a 2020-2026 Airwave service period’.²³⁹ Motorola submitted that this was because by 2016, the Home Office had commissioned ESN and ‘there was therefore nothing irrational about the Airwave contract extension sought by the Home Office’.²⁴⁰

- 4.12 Motorola’s submission appears to us to pre-suppose that the market here is working well. However, whether a decision is rational or not in the current market circumstances is not indicative of whether those circumstances are reflective of a well-functioning market. Whether the market is working well is the matter that our investigation is putting to the test. We conduct that exercise by assessing how the market is working and comparing that to how the well-functioning market could work, as set out above. That exercise enables us to identify if there are features that are distorting competition.
- 4.13 We have sought to assess the market developments after the PFI Agreement was entered into, to identify the factors that have led to the current situation. The following subsections therefore explore:
- (a) In the subsection on factors affecting competition for the market, issues arising particularly in the period up to 2016 that have affected the nature of competition for the market, including the ineffectiveness of the PFI Agreement’s exit and asset transfer provisions, the Home Office’s decision to procure ESN in 2014 and 2015 in order to replace the Airwave Network in 2020 and the negotiations that took place between the Home Office and Motorola when the latter acquired Airwave Solutions in 2016;
 - (b) in the subsection on the implications of the long lead time for the implementation of ESN, the consequences of the long lead times (delays) in the implementation of ESN for competition in the market, particularly in the period between 2016 and 2021; and
 - (c) in the subsection on bilateral negotiations, the extent of any competitive pressure that may have existed in the bilateral negotiations that have taken place between the Home Office and Airwave Solutions / Motorola in 2018 and 2021 regarding the extensions of the various Airwave contracts beyond

²³⁹ We note that we have not characterised the well-functioning market in this way at any point in the course of our investigation.

²⁴⁰ [Motorola’s submission: Reimagining the Well-Functioning Market: the CMA’s construction of a market that never existed](#), 20 May 2022, paragraphs 4 and 5.

the original fixed-period of the PFI Agreement (as well as the implications for the competitive position of [X] the Airwave Network).

- 4.14 We also consider, in the subsection on benchmarking, whether the benchmarking provisions in the PFI Agreement and relevant service contracts are effective to constrain the price and address any competition concerns that may otherwise arise.
- 4.15 The provisional view we come to is that, over time as the market has developed, the Home Office's options and factors that in a well-functioning market would have acted as competitive constraints on the price of provision of the Airwave Network or secured its replacement by a competitively procured alternative have diminished (or did not materialise). In the period from 2020, after the original fixed-period of the PFI Agreement, the Home Office neither has the options that we might expect in a well-functioning market nor are there other constraints on prices and profits that we might expect to apply.
- 4.16 In particular:
- (a) The Home Office had the opportunity in principle to run an open competition for a supplier for the network in the original procurement exercise that led to the PFI Agreement. The terms of the PFI Agreement were consistent with the possibility of further competition when the original period of that agreement ended. However, those terms have not been effective and the further competition they might have facilitated has not occurred.
 - (b) Among other things, concerns about Airwave Solutions' high levels of debt under Macquarie's ownership and the difficulty of establishing a plan for the transfer of Airwave Network assets at the end of the fixed-term of the PFI Agreement led to the Home Office procuring the replacement network, ESN, in 2014/15. At that time, it anticipated ESN replacing the Airwave Network in 2020 (although the lead time for that replacement subsequently became much longer).
 - (c) In 2016, when the parties agreed the HoTs and DoR, the Home Office expected that it would only require access to the Airwave Network until ESN was ready to replace it – which it anticipated would be in or around 2020. Its options were limited by its concerns about Macquarie's continued ownership of Airwave Solutions, its ongoing dependence on the Airwave Network which remained in Airwave Solutions' ownership, and the possible unlawfulness of longer term extensions of the PFI Agreement. These factors affected the Home Office's ability to negotiate HoTs (or a DoR) that secured competitive outcomes.
 - (d) In the negotiations in 2018 and 2021, the Home Office was negotiating against the outside or default option agreed in 2016 of extending the

operation of the Airwave Network at previously contracted prices and on previously agreed terms,²⁴¹ where, amongst other things, the asset transfer provisions in the PFI Agreement had not resulted in the transfer of network assets and Airwave Solutions still owned them, ESN had not been delivered, and the Home Office's dependence on the Airwave Network meant it was locked in to Airwave Solutions.

- 4.17 We can, in our provisional assessment, identify two distinct overall periods in the life of the Airwave Network:
- (a) That covered by the original period of the PFI Agreement until 2019/20; and
 - (b) that from 2020 after the original period of that agreement ended.
- 4.18 In the former period, the market was at least in principle operating as we might expect in a well-functioning market. The Airwave Network was set up via a tendering process. The original bid to supply the network and services over the original period accounted for the supplier's investment costs and the price of the network and services was constrained by the terms of the PFI Agreement. The possibility of replacing the existing arrangements at the end of the original fixed period of that agreement, with either a competitively priced new and enhanced service or a competitively priced continuation of the operation of the existing network, was put in place.
- 4.19 In the latter period, if the market was a well-functioning one, we would expect the existing arrangements to be replaced as described in the previous paragraph. However, this has not happened. Our provisional view is that the constraints we would expect to apply in a well-functioning market do not operate, Airwave Solutions / Motorola have market power and the competitive process is distorted.
- 4.20 We can observe that, despite the end of the original period of the PFI Agreement, the terms of supply of the Airwave Network, especially the price, have not changed as would be expected in a competitive market (to reflect that the original bid to supply the network and services over the original period would have accounted for the supplier's investment costs). Airwave Solutions has continued, and continues, to charge substantially the same price in the later period which, our provisional profitability assessment in Section 6 of this provisional decision report indicates, generates supernormal profits for it and its owner, Motorola.²⁴²

²⁴¹ Which had been negotiated at a time when Airwave Solutions had been seeking prices that would adequately cover the significant investment costs associated with setting up the network.

²⁴² This remains the case even though Motorola has [redacted] in what it suggested to the Home Office should be part of [redacted]. The Home Office has [redacted]. Even if it had, the price would, as we provisionally assess in this report, not have reduced as we might expect in a competitive market. It would remain several hundred million pounds higher than the competitive level. And, for the reasons we explain in this section of this report, we provisionally find that [redacted], are consistent with Airwave Solutions / Motorola having market power and the Home Office lacking countervailing buyer power.

- 4.21 The subsequent subsections of this part of our provisional decision report explain our assessment of how the current position has arisen, and the implications for competition. We start by considering issues arising particularly in the period up to 2016 that have affected the nature of competition for the market.

Factors affecting competition for the market

- 4.22 In section 2 and in Appendices B and C we describe the procurement processes that led to the award of the PFI Agreement in 2000, for the award of the ambulance and fire contracts in 2005 and 2006 respectively and for the ESN contracts in 2014/15. We comment on the competitiveness of such processes to the extent relevant elsewhere in the report (see in particular discussion of the 2000 procurement in section 3 and discussion of the Lot 2 process in section 5. In this subsection, we focus on the circumstances that led to the decision by the government to seek to replace the Airwave Network with ESN (before we assess the consequences of that decision in the subsection on the implications of long lead time for the implementation of ESN).
- 4.23 We adopt that focus for two reasons:
- (a) First, because the original procurement resulted in arrangements for the provision of the Airwave Network (the PFI Agreement) for a fixed period ending in 2019/20, and not for the continued operation of those arrangements after that period (ie the present).
 - (b) Second, because the decision to replace the Airwave Network with ESN related to, and affected the possibility of, replacing the original PFI arrangements with a competitively priced alternative in 2020. It also affected decisions the Home Office made subsequently and the development of the market (especially when, later, the delivery of ESN took longer than originally anticipated – which we go on to consider in the subsection on the implications of long lead time for the implementation of ESN below). It is therefore important in understanding the present market situation.
- 4.24 As to the first of those points, we explained in section 2 that, given the nature of the product and services supplied and the decisions made in 2000 (and the immediately following years) as to the best way to meet the users' needs, LMR network services for public safety in Great Britain are currently provided by a single provider under a long term contract (together with accompanying long term service contracts). This is because of the following characteristics:
- (a) The network effects created by the requirement for a service covering Great Britain whereby users from each emergency service could communicate with those from any emergency service across that area;

- (b) the bespoke and complex nature of the solution, as it required high levels of coverage, resilience and security; and
- (c) the large initial investment and risks associated with developing the solution which led to the need for a long term contract.

- 4.25 We observe in section 3 that the Home Office had the opportunity in principle to run an open competition to supply the network and it sought to do so in the original procurement process. It invited bids to build and operate the network for a fixed period only. In those circumstances, any winning supplier would reasonably be expected to set the price so as to recover its anticipated costs and a reasonable return over that period. The resulting PFI Agreement was for a fixed-period, without provision for extension, and contained terms under which network assets could transfer to the Home Office at the end of that period (which could have enabled further competition for the network then).
- 4.26 In other words, the original procurement exercise and resulting PFI Agreement sought to put in place arrangements to cover the period from 2000 to 2019/20. In our provisional view, that is distinct from the period from 2020 in which those arrangements were not set to apply and in which period we would, in a well-functioning market, expect the arrangements to be replaced with a competitively priced alternative.
- 4.27 Our analysis is therefore not concerned with the price Airwave Solutions charged and the profits it generated in the original fixed period of the PFI Agreement. Our focus is on the way the market developed after the original procurement and the making of the PFI Agreement, and on whether the price Airwave Solutions charges and the profits it generates are subject to effective competitive constraints in the later period from 2020.
- 4.28 As to the second point, about the Home Office's decision to replace the Airwave Network with ESN, we begin by noting that, while it is expected that the underlying technology used for the Airwave Network – LMR technology – will eventually be replaced by LTE-based solutions, it currently remains the de facto technology for communications networks for public safety across the world. There are still countries putting in place LMR systems (see section 2 of this provisional decision report).
- 4.29 As at 2013 specifically, when the decision was made to switch away from this technology altogether in Great Britain,²⁴³ the assets used for the Airwave Network were still regarded as 'relatively new' and to 'have an expected working life until at least 2020+'²⁴⁴ (and we understand that Macquarie had sought to negotiate an

²⁴³ As part of the Strategic Outline Business Case prepared by the Home Office following engagement with stakeholders and industry participants (see Section 2).

²⁴⁴ Technical due diligence report.

extension of the operation of the network to 2035, in return for a discount, in discussions with the Cabinet Office in 2010).²⁴⁵ According to Motorola's internal documents, subject to some additional investment to refresh elements of the network, the Airwave Network may still be capable of meeting the needs of customers for voice communication until around [X], if not later.²⁴⁶

- 4.30 Given these points about the currency and lifetime of LMR networks, and the cost of putting in place such infrastructure and its critical nature, one way an effective competitive process could have operated in a well-functioning market might have been for the contract for the provision of services using the existing infrastructure to be contestable from time to time as long as it remained economic to do so (for example, at the end of the PFI Agreement in 2020). The terms of the PFI Agreement relating to the transfer of network assets to the Home Office at that point were consistent with that possibility. This is not however how the market has developed.
- 4.31 We have therefore considered the factors and circumstances that led the market to evolve in a different way. Those include the factors and circumstances that led the Home Office to decide to commence a procurement process for entirely new infrastructure relatively shortly after the Airwave Network had been fully rolled out. In particular, we have considered the operation of the exit and asset transfer clauses in the PFI Agreement and concerns about Airwave Solutions' high levels of debt. We have then assessed the consequences for the way the market has evolved.
- 4.32 This is important because it helps us to understand:
- (a) How the possibility of securing a competitively priced continuation of the operation of the existing network after 2020 did not materialise (because the network assets continued to be owned by Airwave Solutions / Motorola);
 - (b) the Home Office's decision to procure ESN, its initial anticipation that the new network would be ready to replace the Airwave Network in or around 2020 and the implications of that expectation; and
 - (c) the options open to the Home Office and the choices it made in 2016 when Motorola sought its consent to acquire Airwave Solutions.
- 4.33 Those matters inform our provisional assessment of how certain features of the market developed and Airwave Solutions / Motorola came to have market power. In particular, that the features of the market that developed included the Home Office's reliance on Airwave Solutions' / Motorola's continued provision of the

²⁴⁵ Home office internal email, 26 October 2016.

²⁴⁶ Motorola internal document, 16 October 2020.

Airwave Network, which they continue to own, after 2020 and until ESN is delivered.

PFI Agreement exit clauses and their implementation

- 4.34 Our provisional view, which we explain below, is that two particular issues have arisen with the PFI Agreement's exit and asset transfer clauses which render them largely ineffective:
- (a) the ambiguity in the provision they make for transferable and non-transferable network assets; and
 - (b) weaknesses in the provision they make for asset valuation.
- 4.35 The result is that the clauses have not been effective in securing the transfer of the network assets to the Home Office and these assets are still owned by Airwave Solutions. That has played an important part in reducing the Home Office's options and distorting competition because it means the Home Office could not, for example, retender the provision of the network and services using the existing infrastructure. It is reliant on Airwave Solutions for their continued provision.

Transferable and non-transferable assets

- 4.36 As explained in more detail in Appendix C, the PFI Agreement contains extensive service transfer clauses in [§<]. Their purpose, it appears to us, was to ensure an effective handover – under a Service Transfer Plan – of the responsibility for the provision of the network services from Airwave Solutions to the Home Office (or to the individual customers or to a replacement contractor or contractors) on the termination or expiry of the PFI Agreement. The Home Office, for example, would then have had the option either to retender the operation of the Airwave Network or to operate the network itself.²⁴⁷
- 4.37 Those clauses, and such an outcome, would be consistent with the nature of PFI agreements, the government guidance on the operation of such agreements in place at the relevant time, the nature of the Airwave Network services, the original fixed period of the PFI Agreement and the notion that the Home Office would have paid for most or all of the network investment costs over that fixed period. However, the terms themselves appear to have been ambiguous, and the interpretation Airwave Solutions placed on them seems to have differed from the position indicated in relevant government guidance. That interpretation was reflected in the Service Transfer Plan it proposed to the Home Office, which left the network assets in Airwave Solutions' ownership. We explain as follows.

²⁴⁷ With arrangements regarding the funding and responsibility for any future capital expenditure to be decided by the Home Office in light of circumstances at the time.

4.38 The Service Transfer Plan and process for preparing it are also defined and specified in [REDACTED] of the PFI Agreement (together with [REDACTED]). [REDACTED] comprises a number of clauses, including a definition of which assets were to be transferrable (see Appendix C), as follows:

.... Such parts of the Technical Infrastructure which are not embedded within the CONTRACTOR'S existing networks to provide services (including the CONTRACTOR'S regulated business) to other customers, and which are capable of transfer to an Alternative Service Provider, such items being identified by reference to the Service Transfer Plan.

4.39 Technical Infrastructure was defined as:

the technology which the CONTRACTOR shall use to deliver the Services.

4.40 Macquarie, when it owned Airwave Solutions, interpreted the provisions to mean that, when the PFI Agreement ended, there was 'no right of asset takeover unless that assets (sic) is dedicated and used by a single agency'.²⁴⁸ Consistent with this interpretation, the draft Service Transfer Plan prepared by Airwave Solutions (as to which see further below) excluded from the list of transferable assets, among other things, [REDACTED].^{249 250 251}

4.41 The Home Office has given us a different view of the meaning of the provisions²⁵²:

The Home Office believes, that to provide the services as efficiently as possible, BT intended to use (and indeed did use) its existing network and other assets, including existing assets of its Wireless Division (BT Cellnet), of which BT Wireless Limited was part, as well as purchasing and building out new assets, to form the network that would become the Airwave Network. These existing network and other assets, at least in part, were being used to provide other services to other BT customers, including, again at least in part, BT's regulated products. It was therefore necessary for PITO and BT to agree arrangements through which the HO might obtain those assets needed to ensure the transfer of services to another provider, while at the same time ensuring that BT retained those assets

²⁴⁸ Note of meeting between Motorola and Macquarie dated 10 and 11 March 2015.

²⁴⁹ The right to use [REDACTED] is specifically identified as non-transferable in the Firelink Project Agreement. In the Ambulance Contract and Scottish Ambulance contract, there is no specific clause as to the right to use [REDACTED] being identified as a transferable or non-transferrable asset.

²⁵⁰ We note that Airwave Solutions owns or privately leases around 1,100 strategically-located sites with supporting infrastructure that were rolled out between 2000 and 2005 solely for the purpose of serving the PFI Contract. These sites were excluded from the [REDACTED] Motorola due diligence document, 5 June 2015.

²⁵¹ We note that, despite this interpretation, to the extent that the Airwave Network relies on elements of its previous owner's (BT's) network, that did not prevent the sale of Airwave Solutions to Macquarie. It also appears clear that some of the assets identified by Airwave Solutions [REDACTED] could not be part of a wider network.

²⁵² Home Office submission to the CMA, 10 June 2022. The Home Office was unable to provide any supporting documentation due to the passage of time.

that BT needed to continue to provide its other services (including regulated services) to BT's other customers.

The Home Office believes that the relevant provisions in the Framework Arrangement, including [X], were 'standard' BT provisions for outsourced network services where, amongst other things, there was a shared service approach adopted for the provision of service to multiple customers.

The effect of the definitions used is to limit the non-transferable assets to this technical infrastructure which were co-employed in the provision of other services to BT's other customers, over BT's other networks, at that time.

Government guidance on the treatment of assets in PFI contracts

4.42 Relevant government guidance on PFI agreements does not envisage that assets created for the purpose of fulfilling such an agreement (and paid for by the commissioning authority) would be excluded from the transfer of assets when the agreement ends. Broadly, it envisages that 'transferred' assets will change hands at no cost, with 'transferable' ones passing at fair market value (depending on their practical alternative use).

4.43 The Treasury published the first edition of its 'Standardisation of PFI contracts' guidance (the PFI Guidance) in 1999.²⁵³ The PFI Guidance stated that a typical PFI contract must:

Protect the Authority's interest by not restricting the options exercisable at or immediately before the end of the Contract. These may include:

taking possession of any Assets at no cost;

retendering the provision of the Service, with the outgoing Contractor making any Assets available to the new Contractor at no cost; and

removing any Assets.²⁵⁴

4.44 The PFI Guidance suggested that PFI agreements identify assets 'with no alternative use' and those with a potential alternative use:

The types of Assets that have no alternative use are generally those which, in any event, the Authority will want the ability to acquire on the Expiry Date, although they also include Assets which have fulfilled their purpose and whose useful economic life is at an end on the Expiry Date.

²⁵³ The Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999).

²⁵⁴ The Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999), paragraph 19.2.3.

Where Assets have no alternative use, the Contractor will expect to obtain its return over the life of the Contract (subject to service delivery) and there is not (sic) realistic prospect of the Contractor accepting any residual value risk at an acceptable price.²⁵⁵

- 4.45 The guidance also referred to the transfer of assets to the contracting public authority where there is no practical alternative:

Although there is no presumption of an automatic handover of Assets with no alternative use to the Authority at the end of the Contract, there is no practical alternative to transferring the Assets to the Authority in instances which include the following:

the Assets have a useful economic life if retained by the Authority but there is no realistic alternative use for the Assets, such as prisons ...

- 4.46 It appears to us that the Airwave Network assets are liable to fall into the category of assets which should, according to the PFI Guidance, pass to the Home Office as the contracting authority. They are, in our provisional assessment, assets it would want the ability to acquire, if necessary, to continue the operation of the network, in line with the terms of the PFI Agreement and as might be expected in a well-functioning market in order to secure the ongoing provision of services on competitive terms.

- 4.47 We have sought views on this matter from the Infrastructure and Projects Authority (the IPA), which is the government's centre of expertise for infrastructure and major projects. It reports to the Cabinet Office and the Treasury. The IPA has told us that:

- (a) In the majority of cases, assets with no alternative use transfer to the customer at zero cost at the end of a PFI agreement;
- (b) in some earlier PFI agreements, asset transfer was provided for at market value, and in technology projects obsolescence risks made it difficult to assess both the likely value of assets at the end of the contract period and whether the customer would wish to take them on.²⁵⁶

- 4.48 It also told us that '... we are not aware of other projects where the contracting authority does not have a right to the assets (whether automatic transfer, at market value etc) at the end of the contract'.²⁵⁷

²⁵⁵ The Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999), paragraph 19.2.1.

²⁵⁶ Note of call between IPA and CMA, 22 May 2022.

²⁵⁷ Though it also noted that, 'Assets under PFI contracts are typically standalone and not part of a wider network as would be the case with the project you are looking at and that may be a reason for the atypical arrangements'.

- 4.49 The interpretation Airwave Solutions placed on the PFI Agreement's exit and asset transfer provisions, completely excluding relevant network assets from transferring, accordingly differed from that indicated in the government guidance and from what might be seen as typical in PFI agreements generally.

The development of the Service Transfer Plan

- 4.50 Airwave Solutions' interpretation of the PFI Agreement's exit and asset transfer provisions shaped its development of the content of the Service Transfer Plan. Its characterisation of a number of key assets as non-transferable had an important impact on the development of the market. So, too, did the timing with which it developed the plan.
- 4.51 The Home Office told us that, in accordance with the PFI Agreement, the first Service Transfer Plan should have been prepared in March 2002. Given the passage of time, it is unclear why it was not produced then²⁵⁸ but drafts were first produced by Airwave Solutions in 2007 and then updated but not finalised between 2012 and 2014 (following repeated requests since 2007).²⁵⁹
- 4.52 Since it is the most recently produced version, we have examined the 2014 draft Service Transfer Plan produced by Airwave Solutions while still under Macquarie's ownership. We have compared its content to the requirements set out in Schedule 15, paragraphs 2 to 5, of the PFI Agreement. Based on this review, we note that the 2014 draft Service Transfer Plan appears to fall short of what was required. For example, in addition to its treatment of transferable and non-transferable assets described above:
- (a) Schedule 15 requires 'comprehensive' proposals in a number of areas, including for identifying all the employees who are or may be covered by the TUPE Regulations.²⁶⁰ Section 7.11 of the Service Transfer Plan provides a high-level description of Airwave Solutions' preferred approach but does not seem to us to be comprehensive;
 - (b) the schedule also requires 'comprehensive' proposals for the training of key members of any alternative service provider's personnel. ²⁶¹ The Service Transfer Plan refers in several places to 'training materials' being made available, but does not provide a plan for their content, priorities or delivery; and

²⁵⁸ Although the Home Office has surmised that the demerger of BT's Wireless Division (which handled the PFI Agreement) as MM02 may have acted as a distraction or complicating factor leading to the Service Transfer Plan being delayed or not produced.

²⁵⁹ Home Office internal email, 21 May 2015. Home office internal email, 17 June 2016.

²⁶⁰ Which regulations, very broadly, provide for the transfer of employees where there is a transfer of an undertaking between owners.

²⁶¹ To whom assets may be transferred.

- (c) the Service Transfer Plan does not include a model force services transfer plan, as specified in Schedule 15 and requested by the Home Office.²⁶²

4.53 We also note that the draft plan was criticised by the NAO. In its 2016 report it found that one of the reasons why the government decided to move away from Airwave Solutions was that it had limited leverage over the company and was unable to agree with it a list of assets that it would own once the PFI Agreement and related contracts expired, despite having paid for a number of them in full.²⁶³

4.54 We further observe that the draft Service Transfer Plan was not updated by Airwave Solutions after it came under Motorola's ownership in 2016. The Home Office made these requests in that connection:

- (a) In May 2021, as part of its efforts to ensure that Sharer organisations' exit from the Airwave Network was aligned with other users', the Home Office requested the contact details of those organisations. [redacted].²⁶⁴
- (b) In June 2021, the Home Office requested an updated Service Transfer Plan, again in the context of seeking to align Sharers' and other users' exits from the Airwave Network.²⁶⁵
- (c) Following receipt of the request in sub-paragraph (b), Airwave Solutions met with the Home Office and agreed to provide a list of transferable and non-transferable assets by 2 July 2021. This was not provided despite further prompting by the Home Office.²⁶⁶ Following a further discussion with Airwave Solutions, the Home Office understood that: 'the Sharers are not included in our contract, it won't make any difference to the Service Transfer Plan assets list if they move to ESN or not. The assets are still shared until the time they move over. Therefore, the Service Transfer Plan is basically useless.'²⁶⁷

4.55 In response to our questions about the Service Transfer Plan and its content, the Home Office told us that:

- (a) The basis for Sharers' use of the network is for the purpose of assisting the emergency services (police, fire and ambulance) and not independently of that purpose;
- (b) absent the emergency services', DHSC's and the Home Office's contributions (through charges) to the cost of the network, it is likely that the

²⁶² Emergency Services Airwave Service Transfer / Exit Plan, 8 January 2014, Appendix 6.

²⁶³ National Audit Office, [Upgrading emergency service communications: The Emergency Services Network](#), 15 September 2016.

²⁶⁴ Email from Motorola to Home Office, 19 May 2021. Email from Motorola to Home Office, 23 August 2021. Email from Motorola to Home Office, 29 October 2021.

²⁶⁵ Email from Home Office to Airwave Solutions, 10 June 2021.

²⁶⁶ Email from Home Office to Motorola, 21 July 2021.

²⁶⁷ Email from Home Office to Cabinet Office, 25 November 2021.

cost, and therefore the charges for the services provided over it, would be prohibitively expensive for any Sharers that might wish to continue to use the network, and

- (c) the use of spectrum by the network is predominantly tied to emergency service use.²⁶⁸

- 4.56 In other words, in the Home Office's view, the position of the Sharers should not affect the Service Transfer Plan and hinder the transfer of network assets in the way Airwave Solutions (Motorola) proposed (described above).
- 4.57 As part of ongoing negotiations in 2021 relating to the extension of the period of operation of the Airwave Network beyond 2022, the Home Office [redacted].²⁶⁹
- 4.58 Motorola has, therefore, taken a position to similar effect [redacted] as when Macquarie owned Airwave Solutions. It, too, has placed an interpretation on the PFI Agreement's exit and asset transfer provisions that would not result (and in fact has not resulted) in the transfer of assets to the Home Office (or any alternative network supplier).

Asset valuation

- 4.59 Additional difficulties were liable to arise as a result of the way [redacted] of the PFI Agreement provides for transferable assets to be sold at the end of the agreement for fair market value.²⁷⁰ We note that under the PFI Guidance referred to above,²⁷¹ assets that have no practical alternative use would normally be expected to transfer automatically to the contracting public authority at no cost. Other PFI guidance makes a similar point: that on expiry of a standard PFI contract, with rare exceptions, the key assets needed to continue to deliver public services should revert to the public sector free of charge.²⁷²
- 4.60 The PFI Guidance offers these examples of assets for which there is no practical alternative use:
- Schools, hospitals, prisons, specialist information technology systems and office accommodation that, due to its location or nature, is only of value to the public sector procurer.²⁷³
- 4.61 The following points suggest that some (if not most) of the key Airwave Network assets should in principle fall into the categories of 'asset with no practical

²⁶⁸ Home Office response to Service Transfer Plan Questionnaire dated 18 May 2022, paragraph 22. [104 HO's response to the CMA's Service Transfer Plan Questions - 10 June 2022.docx \(sharepoint.com\)](#)

²⁶⁹ Home Office note of meeting, 2 August 2021.

²⁷⁰ To the Home Office or an alternative supplier.

²⁷¹ The Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999).

²⁷² [PFI: Meeting the Investment Challenge](#), 15 July 2003, paragraph 3.53.

²⁷³ Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999), paragraph 19.1.1.

alternative use' or of key assets required in the continued delivery of public services:

- (a) In a statement made as part of the House of Commons Committee of Public Accounts 2002 proceedings relating to the Airwave Network, BT stated: 'Airwave is not a commercial communication system. Its whole purpose is to improve the safety of the general public and, ultimately, save lives.'²⁷⁴
- (b) The Airwave service is predominantly provided using spectrum allocated by Ofcom and is restricted for use for public safety purposes only by the police, fire and ambulance services and approved Sharers. Ofcom is responsible for assessing whether the intended use of the service by any party applying to use it is in line with the intended purpose of the Airwave service. To be eligible to join the Airwave Network, applicants need to apply to Ofcom and meet the following criteria. Namely, that they:
 - (i) respond to emergencies;
 - (ii) are involved in emergency situations reasonably frequently;
 - (iii) are civilian, or required to respond to civilian emergencies; and
 - (iv) require interactions with those who respond to emergencies.²⁷⁵
- (c) Motorola told us that it is dependent on the public safety spectrum in the 380 to 400MHz range licensed to it by Ofcom specifically for the Airwave Network.²⁷⁶ Motorola also told us that once the ESN network is ready, it will decommission the Airwave Network and on doing so will lose the spectrum licence.²⁷⁷
- (d) Another block of spectrum was granted to Airwave Solutions by way of a trade of spectrum from the DoH on 14 September 2010 and expires on expiry of all Airwave's contracts with police, fire and ambulance services.²⁷⁸
- (e) Motorola's [redacted].²⁷⁹
- (f) Analysys Mason has estimated that approximately [redacted]% (or [redacted] sites) of the Airwave Network's portfolio of sites (housing its network infrastructure, including masts) are in locations potentially attractive to commercial mobile telecommunications network operators. Analysys Mason assumed that the rest (ie [redacted]% of sites) would have to be decommissioned when the Airwave

²⁷⁴ Annex B, HC 783. [HC 783 01.02.PDF \(parliament.uk\)](https://www.parliament.uk/publications/54244/annex-b)

²⁷⁵ Motorola technical due diligence document, 5 June 2015.

²⁷⁶ Motorola hearing with the CMA on 10 February 2022.

²⁷⁷ Motorola hearing with the CMA on 10 February 2022.

²⁷⁸ Motorola technical due diligence document, 5 June 2015.

²⁷⁹ Motorola internal report, 31 December 2019.

Network was switched off (see Appendix F). In other words, a substantial proportion of Airwave Solutions' owned infrastructure at these sites would have no practical alternative use.²⁸⁰

- 4.62 Nonetheless, the exit and asset transfer provisions did not provide for the transfer of transferable Airwave Network assets to the Home Office at no cost at the end of the PFI Agreement. Moreover, not only did they provide for such transfer at fair market value but, in a further departure from general guidance,²⁸¹ the basis on which fair market value was to be calculated is not specified in the agreement. This created potential for dispute, had the Home Office sought to purchase such assets.

Provisional conclusions

- 4.63 In light of the above, we make the following provisional assessments.
- 4.64 These factors have had the effect of rendering the transfer of Airwave Network assets to the Home Office (or an alternative supplier) practically impossible:
- (a) The scope for, and the adoption by the Home Office and Airwave Solutions and its owners of, differing interpretations of the PFI Agreement's exit and asset transfer clauses;^d
 - (b) the interpretation that Airwave Solutions placed on those clauses;²⁸²
 - (c) the consequent exclusion from the category of transferable assets of substantial parts of the network in the (incomplete) Service Transfer Plan that Airwave Solutions produced; and
 - (d) the provision the PFI Agreement made for the sale of transferable assets for fair market value, without specifying how that value should be calculated.
- 4.65 Consequently, the Airwave Network assets continued (and continue) to be owned by Airwave Solutions / Motorola without a practical prospect of their transfer to the Home Office or an alternative supplier at the end of the period of the PFI Agreement. This had (and continues to have) two main effects on the development of the market, narrowing the outside options the Home Office might have been expected to have in a well-functioning market and contributing to the development of features of the market that give Airwave Solutions / Motorola market power:

²⁸⁰ Report commissioned by Airwave Solutions from Analysys Mason, February 2022.

²⁸¹ The Treasury Taskforce Guidance: Standardisation of PFI Contracts (1999), paragraph 19.5.3.

²⁸² Which interpretation differed from the position set out in relevant Government guidance. We make no provisional finding on whether the interpretation of Airwave Solutions or that set out in Government guidance is a better interpretation of the contractual terms in this case. What is relevant for our purposes is that there is ambiguity and the parties have taken different views on interpretation and not felt the need to compromise.

- (a) First, it played a part in the Home Office deciding in 2013 to procure ESN as the replacement for the Airwave Network at the end of the original fixed period of the PFI Agreement in or around 2020 (see further below). Since the relevant provisions did not appear to offer a real prospect of Airwave Network assets transferring to the Home Office (or an alternative provider) it could not, for example, seek to secure a competitively priced continuation of the operation of the existing network through retendering its provision.²⁸³ That is reflected in comments made in a 16 November 2016 Briefing Pack to the Home Office's Permanent Secretary:

.... we had not ability (sic) to run an effective competition to continue a Tetra service, because Airwave owned the infrastructure and held the spectrum licence.²⁸⁴

- (b) Second, Airwave Solutions' / Motorola's continued ownership of the assets created (and continues to create) significant barriers to switching supplier at the end of the PFI Agreement in circumstances where ESN was not ready to replace the Airwave Network in 2020. In the absence of any alternative network and provider the Home Office would be (and is) locked in to continued provision of the network by Airwave Solutions / Motorola until ESN was (is) ready.

The decision to replace the Airwave Network with ESN

- 4.66 The Home Office's decision to procure ESN in 2014/15 in order to replace the Airwave Network in 2020 also, in our provisional assessment, had implications for the development of the market and of features that distort competition and give Airwave Solutions / Motorola market power.
- 4.67 In the period between 2010 and 2015, the difficulty in settling a Service Transfer Plan transferring the assets to the Home Office or another provider was one of a group of factors that led to the decision to procure ESN to replace the Airwave Network. The other factors included:²⁸⁵
- (a) Concerns related to Macquarie's continued ownership of Airwave Solutions on account of the high levels of debt in the latter;
 - (b) the government's approach to public expenditure after the 2010 General Election;

²⁸³ With arrangements regarding the funding and responsibility for any future capital expenditure to be decided by the Home Office in light of circumstances at the time.

²⁸⁴ Home Office internal document, 16 November 2016.

²⁸⁵ See also paragraphs 2.71 – 2.77 in Section 2 and Appendix B.

- (c) concerns about the lawfulness of extending the duration of the PFI Agreement;
- (d) the deteriorating relationship between the Home Office and Macquarie / Airwave Solutions; and
- (e) the opportunity to move to more modern 4G technology which would enable the provision of data services (eg video).

- 4.68 The Home Office's procurement of ESN in 2014/15 could, in principle, have resulted in the replacement of the Airwave Network in competitive circumstances (by a competitively priced new and enhanced alternative network) at the end of the original fixed period of the PFI Agreement. That could have been consistent with the operation of a well-functioning market. However, the procurement also had the effect of limiting the Home Office's options as the market evolved, since it became dependent on the successful delivery of ESN and the completion of the transition of users to that network by 2020. The following paragraphs set out our assessment of these developments.
- 4.69 Considering first the financial position under Macquarie's ownership of Airwave Solutions (see above), we note that when Macquarie's European Infrastructure Fund 2 (MEIF2) acquired Airwave Solutions in 2007, it financed the deal through debt. The holding company put in place for the purpose of the acquisition, Guardian Digital Communications Ltd (GDCL), took on £2 billion of debt, consisting of a £1.5 billion external floating rate loan maturing in March 2014 and £500 million of internal loans.²⁸⁶
- 4.70 Government briefing notes record that, '.... the price MEIF2 paid was very high and appeared to reflect an assumption that indefinite contract extensions at similar prices would be available because of the difficulties of migrating away from Airwave' and that, '... at the time of acquisition, the business was modelled as one which would operate in perpetuity. The model projected strong growth, both in the number of users and in the value-add services they would procure.'²⁸⁷ However, by 2010, Airwave Solutions and its owners had realised that business growth was restricted by the fixed user community, as stipulated by the Ofcom Sharers list.²⁸⁸
- 4.71 The high level of GDCL's debt related to Airwave Solutions following the acquisition started to raise significant concern in government in 2010. This followed an adverse report over the company's financial and operational performance carried out in 2009/10 by the Office of Government Commerce (OGC).

²⁸⁶ Home Office internal document.

²⁸⁷ Home Office internal document.

²⁸⁸ Home Office internal document. Home Office internal document, 21 July 2010.

4.72 In a meeting with OGC in April 2010, Airwave Solutions confirmed that ‘their reduced revenue stream has caused them to engage in a cost reduction exercise, but they will protect operational performance’²⁸⁹. Although Airwave Solutions indicated confidence in its ability to refinance in 2014, that it would meet its covenant target cash flows and that there was no immediate pressure on working capital or liquidity, government concerns remained high. It was noted by the Home Office at the time that:

The current external debt of £1.704bn matures in 2014. This will be challenging. The cost of borrowing will be dependent on both the market conditions prevailing at the time and on the committed contractual revenue stream. Price reductions in the short term will only be feasible through concomitant cost reductions or from Shareholder acceptance of reduction in the already low rate of return on their investment. However, because the business has a high level of fixed cost, reductions in service delivery will not always create the equivalent savings.²⁹⁰

4.73 As to the government’s approach to public expenditure from 2010 (see above), a Home Office internal briefing note records that ‘after the 2010 election, the Minister for the Cabinet Office added Airwave to the ‘deal room’ discussions with major government suppliers’. This was an initiative to ‘renegotiate key Government contracts to release savings’. Macquarie, however, refused to agree any price reduction unless it was given a 15-year contract extension in return, and discussions broke down.²⁹¹

4.74 In connection with the future provision of the network, we understand the government had been advised that any extension of the PFI Agreement (at that time and in the then current circumstances) beyond 2020 would likely be a breach of European procurement law. This view was disputed by Macquarie’s lawyers at the time (but according to Home Office internal documents, it disagreed with their assessment²⁹²). The Home Office reached the view that any extension represented too high a risk and that ‘any short term savings would be more than wiped out if risks materialised’.²⁹³

²⁸⁹ Home Office internal document, 7 May 2010.

²⁹⁰ Home Office documents.

²⁹¹ Home Office internal document. Home Office internal email.

²⁹² Home Office document.

²⁹³ In contrast to this position, the Home Office took the view in 2018 and 2021 that in the exceptional circumstances that then prevailed, the relevant procurement legislation enabled some extension of the duration of the PFI Agreement. At the end of 2021, the Home Office issued a contract award notice relating to the extension of the Airwave Network to December 2026, in which it relied on Public Contracts Regulations 2015, regulation 32(2)(b)(ii) to extend the provision of Airwave from 31 December 2022 to 31 December 2026. This referred, among other things, to the significant setbacks and delays in the development of the ESN, the short duration of the current extension to enable completion of ESN and the absence of an alternative competitor.

- 4.75 Faced with the above factors relating to Airwave Solutions and the future provision of the Airwave Network, in 2011 the Government established a programme, the ESMCP, to seek a solution. A Home Office briefing²⁹⁴ prepared in 2017 notes that:

At this point, the prospects for migrating from Airwave looked poor. Between 2011-12 the team exhaustively reviewed the options. Airwave had been clear there would be no material price reductions for contract extensions. There were no clear legal routes for bringing the service in house. Competing to bring in an alternative TETRA provider was considered, but after significant analysis, there was not enough to enable parallel running of two TETRA operators.

A range of other technologies were explored from Wifi to television white space. 2G and 3G could not support some of the key voice functionality the emergency services required, so ultimately the only alternative was likely to be Long Term Evolution (LTE) ie 4G. Given 4G needs more masts than TETRA, and the Government policy of auctioning spectrum, building a private network would have been extremely expensive, so deploying 4G over a commercial network was the only plausible option. Even then, the cost of migration and parallel running with the high costs of the current Airwave solution meant substantial investment at a time of austerity.

- 4.76 Although the Cabinet Office sought to engage further with Airwave Solutions to secure price discounts, the offers and outcomes remained, in its view, inadequate:
- (a) In 2012, Airwave Solutions made a proposal equivalent to a total discount of £231 million or 5.8% of revenue over the remaining eight years of the contract in return for an extension to 2022;
 - (b) the government sought to obtain a discount by exercising its right to price benchmarking in 2013, but the outcome of the process was disputed by Airwave Solutions, relying on the weaknesses in the way the relevant benchmarking clauses of the PFI Agreement were drafted (see the subsection on benchmarking below and Appendix E, paragraphs 27 to 37); and
 - (c) a further offer made in 2014 also amounted to a small discount (of around £9 million).²⁹⁵
- 4.77 By 2014, the level of GDCL's debt relating to Airwave Solutions had increased to £2.4 billion, of which £2 billion was external debt (in the Home Office's assessment). Unable to refinance the debt conventionally, Macquarie sought a scheme of arrangement that consolidated the debt into a single £2 billion external

²⁹⁴ Home Office internal document.

²⁹⁵ Home Office email, 5 November 2012. Home Office internal email. Home Office internal document.

loan with a debt maturity to March 2017, with an option to extend by two years, if certain conditions were met.²⁹⁶

- 4.78 The further indebtedness heightened the Home Office's concerns about Airwave Solution's financial stability and in March 2014 it commissioned a risk assessment of the company. This found that the Home Office [X]. It was assessed that this created a [X].²⁹⁷
- 4.79 The government's procurement of ESN, to replace the Airwave Network with a network using LTE technology (4G) over commercial mobile networks, in 2014/15²⁹⁸ was its response to the issues and concerns described above. As explained more fully in section 5 Appendix F, it conducted a tendering exercise in which bidders were invited to compete for contracts to deliver aspects of the new network (Lots). The exercise resulted in Motorola and EE, amongst others, winning contracts in connection with which, after consultation with the Home Office,²⁹⁹ they agreed to put ESN in place in 2017 in order to complete the transition of users to it from the Airwave Network by 2020 (or shortly thereafter).³⁰⁰
- 4.80 In his 2017 report, Simon Ricketts, the technology adviser to the Home Office Permanent Under-Secretary, noted that at that time the chosen technology solution was 'the first example, anywhere in the world, of delivering public safety communications services capability over a commercial network. It is also being done at a time when the standards that commoditise mission critical capability over 4 and 5G networks are quite recent, and only just working their way into finished hardware and software'. He emphasised the considerable risks associated with this:

Ensuring success in such a programme requires very considerable expertise in the area of supplier and technology integration, not just between the core suppliers (Motorola and EE), but also across the providers of devices, control room interfaces, vehicle installers, air to ground solutions, the London Underground and more. In the smoothest of environments delivering the ESMCP, with the first implementations starting 21 months³⁰¹ after effective contract dates would have been

²⁹⁶ Home Office document.

²⁹⁷ Report commissioned by the Home Office, April 2014.

²⁹⁸ [Services - 133654-2014 - TED Tenders Electronic Daily \(europa.eu\)](#)

²⁹⁹ Home Office internal document, October 2015

Home Office internal document, 9 September 2015.

The initial delivery timetable for putting ESN in place prior to the transition between networks was extended from 17 to 21 months in consultation between the Home Office, EE and Motorola. Internal Home Office document, 6 October 2015.

During negotiations, the Home Office had offered to increase that timetable to 24 months, but both EE and Motorola stated that 21 months would be sufficient. Minutes of Motorola meeting, 7 December 2015.

³⁰⁰ NAO (2016), [Upgrading emergency service communications: the Emergency Services Network](#) (HC 627).

³⁰¹ Extended from 17 months in consultation with EE and Motorola, EE and Motorola having stated that 21 months would be sufficient.

extraordinarily demanding, not least because of the innovative nature of the solution. It is not unreasonable to suggest that the programme would rightly be placed at the top of the upper quartile of difficulty. It should be noted that Motorola have no experience of delivering a PSCS solution over a commercial network, and EE have never integrated a dedicated software solution over their commercial network, or contracted in such a major way with the public sector.³⁰²

- 4.81 The technology adviser added that the solution adopted by the government would become commonplace between 2020 – 2025 and that it was the urgency created by the commercial circumstances in the period described in the paragraphs above that had ‘necessitated an early start on this journey’, which he summarised as follows:

In 2007 Airwave was acquired by the Australian Macquarie Funds Group, who leveraged the value of contracts and infrastructure to borrow heavily and load the Airwave company with debt. As a result, investment in the network stopped. In 2010, as part of the Governments cost reduction strategy, technology contracts were targeted for re-negotiation. The objective for Airwave contracts was to seek a reduction in cost (then £1m per day), in return for a mutually agreed extension period as contracts expired. Negotiations between the Government and Airwave Solutions Ltd broke down acrimoniously. It was concluded that the poor commercial relationship, lack of investment, and the fact that the assets did not return to the Government at the end of Airwaves contractual life posed a genuine threat to national infrastructure.³⁰³

Provisional assessment

- 4.82 Our provisional assessment based on the foregoing is as follows.
- 4.83 First, while its timing proved to be over-optimistic, the Home Office’s procurement of ESN was its intended solution to the pressures created by Macquarie’s / Airwave Solutions’ financial position in particular (but also, amongst other factors, to the fact that it did not and would not own the Airwave Network assets at the end of the fixed period of the PFI Agreement).
- 4.84 Second, the procurement, in principle, offered an opportunity for the Home Office to replace the Airwave Network with a competitively priced new and enhanced network in a way that would have been consistent with how we might expect the well-functioning market to operate. That is, had it been delivered in a timely

³⁰² Emergency Services Mobile Communications Programme Independent Review by Simon Ricketts – Advisor to Permanent Under-Secretary, Home Office, October 2017.

³⁰³ Emergency Services Mobile Communications Programme Independent Review by Simon Ricketts – Advisor to Permanent Under-Secretary, Home Office, October 2017.

fashion, as the providers agreed and as the Home Office originally anticipated, there would have been a new network with added functionality, for which the providers had competed in a procurement exercise, replacing the existing one at the end of the original period of the PFI Agreement.

- 4.85 Third, however, as the market evolved further over the following years, the procurement also shaped, and ultimately served to limit, the Home Office's options and contributed to a position in which Airwave Solutions / Motorola has market power.
- 4.86 That is, at the time of the procurement and for a period thereafter, the Home Office (not least in light of the winning bidders' agreements) anticipated the delivery of ESN in 2019/20 (or at least thereabouts) and relied on that expectation. That reliance, though, together with the fact that it was not (as described above) in a position to (re)tender the continued provision of the existing network, made the Home Office's position dependent on such delivery occurring. If that delivery did not occur, the Home Office would be tied-in to the Airwave Network after the original period of the PFI Agreement. We go on to assess the implications of that dependence in the immediately following paragraphs and in the subsection on the implications of long lead time for the implementation of ESN below.

Negotiation of the HoTs and DoR (2016)

- 4.87 Following the procurement of ESN in 2014/15, Motorola sought to acquire Airwave Solutions. As we describe in paragraphs above, the acquisition required the Home Office's consent and it and Motorola engaged in negotiations that led in February 2016 to the agreement of the HoTs. These negotiations are therefore relevant in considering the development of the market because they resulted in an agreement that affected the terms on which any continued operation of the Airwave Network from 2020 onwards would occur.
- 4.88 We have accordingly considered: (i) the context in which the 2016 negotiations took place; (ii) whether in those negotiations the Home Office had alternative options and buyer power; and (iii) the agreement that was reached and its implications for the market.
- 4.89 The provisional view we reach is that a number of factors affected the Home Office's ability to negotiate an agreement in 2016 that secured competitive outcomes. The position that emerged from the negotiations was that if the transition to ESN was completed on time in 2019/20, the Airwave Network could be replaced with a new network resulting from a bidding process. If not, in our provisional assessment, terms and prices for the continued operation of the Airwave Network would be subject to further negotiations depending on the strength of each party's bargaining position.

4.90 In other words, the 2016 negotiations produced an outcome that maintained the possibility of a replacement of the Airwave Network as we might expect in a well-functioning market. The outcome also, however, had the effect, in our provisional view, of limiting the Home Office's options and adding to the potential development of features of the market distorting competition and giving Airwave Solutions / Motorola market power in the event that ESN was not ready to operate as the replacement network in 2020. In those circumstances, it would be necessary for the Airwave Network to continue to operate. The terms on which it did so would, in our provisional assessment, be subject to negotiation in circumstances where Airwave Solutions still owned the network and the Home Office was reliant on it and had no other options.

Explanation

4.91 The following paragraphs set out the analysis that leads to our provisional view.

4.92 Motorola told us that the Home Office's bargaining power was particularly strong in 2016 because its consent was required to complete the purchase of Airwave Solutions.³⁰⁴ Motorola told us that the Home Office's right of veto enabled it to secure the following significant concessions:

- (a) A perpetual obligation for Airwave Solutions to continue to deliver the Airwave Network service at its own risk until the final ESN Transition Group (whether delayed or on time) has transitioned to ESN and National Shutdown occurs;
- (b) a unilateral option to extend the Airwave Network services for any period beyond 2019 at agreed pricing and further flexibility (all aligned to possible ESN elongated Transition scenarios) to require delivery of the Airwave Network services only to such ESN Transition Groups that are delayed in transitioning to ESN and need the service for longer than those groups that have transitioned;
- (c) an essential and bespoke 'interoperability' (interworking) service under which the emergency services users would be able to communicate on an interoperable basis via the existing Airwave Tetra system and the new ESN PTT voice communication system during the transition phase from the Airwave Network to ESN;
- (d) settlement of ongoing litigation between the Home Office and Airwave relating to benchmarking and variation of price equating to payments to the Home Office of £[redacted] million over three years;

³⁰⁴ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraphs 22.

- (e) the DoR providing financial remedies protecting the government from a delay to ESN caused solely by Motorola's ESN Lot 2 delivery and the consequential need to extend the provision of the Airwave Network services;
- (f) a common end date for all core contracts – police, fire and ambulance – removing the 'ragged edge' expiry dates, which would have been problematic for the Home Office's aspiration to complete ESN transition across all the emergency services by December 2019;
- (g) access to [X] of Airwave Solutions' sites located in rural areas in order to enable the Home Office to give effect to its ESN extended area coverage requirements;
- (h) flexibility for police forces to extend their existing menu services provision at current pricing for a period of their choice through to national shutdown at the latest; and
- (i) withdrawal of Airwave Solutions' procurement challenge that it had brought against the Home Office following its exclusion from the ESMCP (ESN) Lot 3 competition (avoiding the prospect that the Home Office could be forced to re-procure that element of ESN, which likely would have caused significant delay to its proposed timetable).

4.93 The Home Office, Motorola submitted, did not seek to secure any form of price reduction at the relevant point in 2016, having secured the overall deal it wanted.³⁰⁵

4.94 Appendix D sets out the facts that we have been able to establish through our review of internal documents produced by Motorola and the Home Office in the context of the 2016 negotiations. Taking account of relevant submissions, we have focused on two key aspects of the negotiations:

- (a) The economic realities of the parties' bargaining positions and in particular the alternative options open to them; and
- (b) the outcome of the negotiation process, to the extent that it is an indicator of the exercise of market power by Motorola or buyer power by the Home Office.

4.95 Based on our review of the documents, it appears to us that the Home Office: (i) had no viable options in the 2016 negotiations other than to consent to Motorola's acquisition of Airwave Solutions; and (ii) had limited bargaining power. There are five key reasons why we are not minded to regard the outcome as one in which

³⁰⁵ Motorola's response to the CMA's Issues Statement, 10 January 2022, paragraphs 23. [Motorola's response to the CMA's Issues Statement.](#)

the Home Office was able to use its position to secure concessions from Airwave Solutions / Motorola:

- (a) First, the Home Office was not able in 2016 to walk away from Airwave Solutions. There was a need for the critical services provided by the Airwave Network to continue until ESN was (is) ready.
- (b) Second, the Home Office therefore had only two alternatives: consenting to Motorola's acquisition of Airwave Solutions or accepting the consequences of continued ownership by Macquarie (there being no alternative buyer at the relevant time). The evidence we have assessed shows that the latter was seen by the Home Office as very risky, both operationally and financially.³⁰⁶ The Home Office's interest, because of the critical nature of the network, was in securing its provision until the end of the PFI Agreement period and aligning the various Airwave contracts to ensure the orderly closure of the Airwave Network and its replacement by ESN by the end of that period in 2020. The Home Office considered that the acquisition of Airwave Solutions by Motorola would remove a significant number of the operational and financial risks it was concerned about.³⁰⁷
- (c) Third, the risks to Motorola appear to have been more limited. It would have been liable to Macquarie for a £[<] million [<] if it failed to conclude the acquisition of Airwave Solutions by [<] (which in our provisional view is a relatively small amount in the context of an acquisition cost of £[<] million and for a company of Motorola's size). We have not seen any evidence suggesting that Motorola doubted the willingness of the Home Office to consent to that acquisition. Rather, the Home Office conveyed to Motorola a positive response to the transaction and Motorola understood the Home Office to be 'very keen' from the outset of the negotiations.³⁰⁸
- (d) Fourth, at the time of these negotiations, the Home Office still anticipated that ESN would replace the Airwave Network in 2020. It had tendered, consulted and agreed with suppliers on that basis (and, at the time of the 2016 negotiations, Motorola was writing to the Home Office referring to, '... when ESN is ready for service in September 2017'³⁰⁹). The Home Office was not then concerned generally to extend the original term of the PFI Agreement for a substantial period and did not consider that it could (at that time and in those circumstances) lawfully do so (see section 3 and Appendix D). Its

³⁰⁶ For reasons including the debt level of the holding company Macquarie had set up, concerns about the Service Transfer Plan it had provided and its failure to provide an interworking solution to support the transition to ESN, as well as the deterioration in their working relationship.

³⁰⁷ Although Motorola's dual role in ESN and the Airwave Network was also identified as a potential conflict of interest that needed to be mitigated.

³⁰⁸ Motorola internal email, 16 November 2015. Motorola internal email, 13 November 2015.

³⁰⁹ Email from Motorola to the Home Office, 27 January 2016.

interest was to align the end dates of the various Airwave contracts to ensure the orderly closure and replacement of the Airwave Network, and to obtain the right to short extensions to cover possible delays in network transition in particular regions.

- (e) Fifth, the evidence we have assessed indicates that both the Home Office's and Airwave Solutions' / Motorola's position was that, if it became necessary generally to extend the operation of the (whole) Airwave Network for a significant period, that (and the price) would be subject to further negotiation.³¹⁰ The right that Airwave Solutions and the Home Office agreed in the HoTs for the latter to be able to extend the operation of the network at the current price was, in effect, an option (or backstop price) it would have in any future negotiations (which would depend on the parties' outside options and bargaining power at the time). This price was set at a level that reflected the cost of setting up a new network.

4.96 We also observe that Motorola's internal assessment of the outcome of these negotiations (as reflected in its February 2016 board paper) was highly positive. It showed that Motorola had improved its Airwave acquisition business case by an overall US\$[>] million increase in revenue compared to the position put to the board when recommending the acquisition in November 2015.³¹¹ It also described the outcome of the negotiations as 'de-risking' its business plan.

Provisional assessment

4.97 Accordingly there were, in our provisional view, several factors which affected the Home Office's ability to negotiate an agreement in 2016 that secured competitive outcomes. The outcome that did emerge from the 2016 negotiations was that if ESN was ready in 2020, there could be an orderly closure of the Airwave Network and its replacement with a new and enhanced network awarded as a result of a bidding process. If not, however, terms and prices for the continued operation of the Airwave Network would be subject to further negotiations where the outcome would depend on the strength of each party's bargaining positions. We consider the implications of that outcome in Main Subsections 2 and 3 below.

Implications of long lead time for the implementation of ESN

4.98 An important factor, in our provisional view, in the current market situation is the lead time for the delivery of ESN and its replacement of the Airwave Network. Specifically, the lead time is now much longer than the Home Office anticipated

³¹⁰ See paragraphs section 3 and Appendix D.

³¹¹ With, as we note above, the potential extension of the Airwave Network 18 months beyond the then national shutdown target date at current prices adding US\$[>] million. Airwave Transaction, Board of Directors, February 2016.

(and Motorola and EE agreed) when it was procured in 2015 and when the HoTs were agreed in 2016.³¹²

4.99 This factor is important because it affects whether the Airwave Network:

- (a) Is replaced by a competitively procured and priced new and better network, as might be expected in a well-functioning market; or
- (b) continues to be provided by Airwave Solutions / Motorola after the original fixed period of the PFI Agreement in circumstances where features of the market distort competition and Airwave Solutions / Motorola has market power.

4.100 We assess those matters in this section. Our provisional view is that the long lead time has meant that for a substantial period (but of uncertain duration) the terms and price for the continued provision of the Airwave Network until ESN is ready to replace it were (and are) subject to bilateral negotiation between the Home Office and Airwave Solutions / Motorola. Since the outcome of those negotiations depended (and depends) on the parties' alternative options and bargaining positions, there was (and is) the potential for competition to be distorted. We go on, in the subsection below on bilateral negotiations, to explain our further provisional assessment that, in those negotiations, the Home Office had (and has) no option other than to pay the default price agreed in 2016, and Airwave Solutions / Motorola had, and has, unilateral market power.

Explanation

4.101 From the point at which the Home Office started to evaluate options for the replacement of the Airwave Network, in 2011, to the current National Shutdown date of 31 December 2026 (the earliest point at which the Airwave Network is expected to be switched off), around 15 years will have passed. This is much longer than the commitments the Home Office and its chosen providers agreed for the delivery of ESN (and the transition between networks by 2020).

4.102 Had the Home Office's plans come to fruition, the total period from conception to adoption of the replacement of the Airwave Network would have been 9-10 years, including:

- (a) Around five years for the evaluation of options and procurement (from 2011 to December 2015);

³¹² Home Office meeting minutes Motorola presentation, 7 October 2015; Home Office note, 6 July 2018; and Home Office document "ESMCP Transition Plan History", 9 September 2015.

- (b) 21 months for the delivery of the ESN network (as agreed with EE and Motorola following consultation); and
- (c) 27 months for the transition between the networks (although this was a condensed timetable from the initial four years that was originally envisaged by the Home Office for the transition).³¹³

- 4.103 Meeting this delivery timetable would have meant that a replacement network (ESN) that had been the subject of a tendering process would have replaced the Airwave Network at or around the time of the expiry of the original fixed period of the PFI Agreement (and in which period the price of supply had been constrained by the terms of the PFI Agreement and the circumstances in which they were agreed).
- 4.104 Not meeting that timetable, however, means there is a period (of uncertain but substantial duration) from 2020 until ESN is ready and transition has occurred, during which period the Home Office requires the continued provision of the Airwave Network. During this substantial period, prices are set through bilateral negotiation (subject to the backstop position agreed in the HoTs – also following bilateral negotiation – in 2016), rather than as an outcome of a bidding process for a fixed-term contract (as had been the case in the period from 2000 to 2019). The outcome of these negotiations depends on the parties' bargaining power, which is ultimately determined by the alternative options each of them has.
- 4.105 Under normal circumstances, and as illustrated by public procurement rules, prices for very substantial government contracts would not generally be expected to be set by such bilateral negotiation between existing contractual parties.
- 4.106 We therefore provisionally consider that the very long lead time for the implementation of ESN (regardless of its causes) has the potential to distort, or contribute to the distortion, of the competitive process. In the subsection below on bilateral negotiations, we examine the competitive dynamics that can be observed in these circumstances, starting with the price negotiations that took place in 2018 and 2021 (as well as considering the [§<]).

Bilateral negotiations (2018 and 2021) and recent discussions

- 4.107 In 2018 and 2021, bilateral negotiations about the extension of the provision of the Airwave Network took place between the Home Office and Airwave Solutions / Motorola. Those negotiations occurred in circumstances where ESN was not ready to replace the Airwave Network in 2020 and related to the continued

³¹³ Home Office presentation, 7 October 2015; Home Office note, 6 July 2018; internal Home Office document, 6 October 2015; and Home Office project plan, 24 April 2015.

provision of the Airwave Network by Airwave Solutions after the original period fixed by the PFI Agreement. In this subsection we consider those negotiations. We assess what they can tell us about the extent to which Airwave Solutions / Motorola has market power, as well as the extent to which any such market power is constrained by countervailing buyer power on the part of the Home Office.

- 4.108 The provisional conclusion we draw from our analysis is that in the 2018 and 2021 negotiations the Home Office lacked the options we might expect it to have in a well-functioning market and did not have countervailing buyer power. Airwave Solutions / Motorola had market power that enabled the setting of a price that generates profits at a supernormal level. This is because the Home Office requires the provision of the Airwave Network for critical emergency services communications until ESN is ready to replace it. Airwave Solutions / Motorola continues to own that network and there is no alternative available to the Home Office. The price that applied in the original period of the PFI Agreement between 2000 and 2019 might have been constrained by competition (at least in principle), but that is not the case after that period.
- 4.109 We also make the provisional assessment that the [X], is recent evidence that it and Airwave Solutions continue to have market power.

Explanation

- 4.110 We begin by making observations about two key outcomes from the negotiations in 2018 and 2021. Namely that:
- (a) Whilst there were some modifications, the resulting terms (or those that apply in default of agreement) are substantially based on the existing terms of the PFI Agreement that were set to cover the fixed period between 2000 and 2019, with the price in particular based on the price for that period (with relatively small discounts)³¹⁴ – ie a price that reflected the cost of setting up an entirely new network; and
 - (b) our analysis of the profitability of the price agreed indicates that Airwave Solutions (and Motorola) are generating supernormal profits in the period after 2019 (after the end of the original period of the PFI Agreement).
- 4.111 Those observations, in our provisional view, provide a basis to suspect (or an indicator) that in the negotiations the Home Office lacks options and countervailing buyer power, and that Airwave Solutions / Motorola has substantial market power. They would provide strong corroboration where the evidence relating to the negotiations points in the same direction.

³¹⁴ A [X]% discount was agreed in 2018, for example – see paragraphs 198 to 200 in Appendix C.

- 4.112 We then go on to consider the documentary evidence in order to assess the parties' positions in the negotiations. In making our assessment, we take account of submissions the parties have made.

Outcomes and manifestations of bargaining positions

- 4.113 We begin, as we indicate above, with the following two (linked) observations on the outcomes of the 2018 and 2021 negotiations and what they may tell us about the parties' bargaining positions. In our provisional view, the 'deal' the parties struck can be probative of the level of competitiveness of those negotiations, in particular where it is consistent with other evidence.
- 4.114 The first of the observations relates to the price that the parties agreed or which resulted from the negotiations. The second relates to the profitability of that price.
- 4.115 As to the first point, we observe that, while they were amended to some extent, the terms agreed in the 2018 negotiations were, essentially, a continuation of the provision of the Airwave Network after 2019 at the same service charge (price) as in the period before that date (ie in the original period of the PFI Agreement), less a [X]% discount.³¹⁵ In the 2021 negotiations, the parties were unable to reach agreement and in [X], the effect of which was to extend the provision of the network at essentially the same price (which was the default price under the HoTs).
- 4.116 The Home Office agreed to pay these charges notwithstanding that, as we note elsewhere in this provisional decision report, the price for the original fixed period of the PFI Agreement was set after a bidding process where, if it was competitive, the winning bidder could reasonably have been expected to seek a price that recovered its investment and earned a reasonable rate of return for that period. In a competitive market, it would be expected that, after that fixed period, the price would be modified to reflect that investment costs should have been recovered. That this did not happen is, in our provisional view, consistent with the Home Office lacking alternative options and buyer power in the negotiations and with Airwave Solutions / Motorola having market power.
- 4.117 On the second point, our analysis of Airwave Solutions' profitability in the period from 2020 to 2026 shows that it can expect to generate total excess profits over that period of around £1.1 billion section 6. We observe that with Airwave Solutions continuing to charge substantially the same price (service charge) as in the original fixed period of the PFI Agreement, the Home Office is essentially paying twice for the network assets. The resulting supernormal profits are in our provisional assessment consistent with Airwave Solutions / Motorola now having

³¹⁵[X].

unilateral market power in relation to the supply of the Airwave Network and with the Home Office having neither alternative options nor countervailing buyer power.

Evidence from negotiations

4.118 We have assessed the contemporaneous and related evidence about the negotiations in 2018 and 2021. Our provisional assessment is that it shows that the Home Office lacked outside options and buyer power and that market power lay with Airwave Solutions / Motorola. We note that, as we describe below, this is a position Motorola itself recognised in its internal business documents, commenting in particular that:

... There is no alternative technology currently available to Airwave's UK customers and Airwave has no direct competitors ...

[and]

Pricing [...] will be subject to further negotiation. However, this is not expected to materially affect the profitability of the Airwave contract beyond 2022. Airwave customers do not currently have an alternative option.

4.119 In making our assessment, we have considered the evidence that relates to each of:

- (a) The chronology and conduct of the negotiations;
- (b) factors affecting the parties' options and their bargaining positions; and
- (c) the parties' perceptions of their bargaining positions.

4.120 We have also carefully considered the parties' submissions. Motorola has submitted that:

- (a) The Home Office has significant bargaining power as it is a monopsonist in respect of both ESN and the Airwave Network and has used its monopsony power in a number of ways over time,³¹⁶ ³¹⁷ including for example, to:
 - (i) Successfully lower prices outside of contractually agreed terms and defer significant payments;
 - (ii) refuse to make certain significant payments due under its contracts with Airwave Solutions, such as refusing to pay approximately £[<] million

³¹⁶ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 44.

³¹⁷ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraphs 51-54.

in aged debt in 2014, which was addressed through mediation, and in relation to work carried out by Motorola on ESN;

- (iii) require work to be done without committing to payment terms;³¹⁸
 - (iv) engage in a pattern of obstructive behaviour towards Motorola's ESN delivery efforts in the period after October 2020, and in particular the obstruction of the implementation of a [X] plan; and
 - (v) act independently of budget constraints and set targets that are roundly rejected by industry, by setting an unrealistic timetable for ESN; and
- (b) 'the only 'negotiations' that have been taking place since 2016 are unilateral demands by the Home Office for *ex gratia* discounts'.³¹⁹

4.121 Motorola also told us:³²⁰

- (a) Airwave Solutions / Motorola cannot have market power in respect of the Airwave Network because:
 - (i) They cannot compete for their customers, who are being removed by the Home Office's procurement of ESN (and the contract under which the Airwave Network is provided is just a contract in 'run-off' and 'the Airwave service is simply the execution of a contract on agreed terms'); and
 - (ii) they are not, and have never been, in a position to raise prices;
- (b) any market power they do have is transitory and outside their control; and
- (c) they [X], indicating that they do not enjoy market power or a privileged bargaining position.

4.122 The Home Office has submitted that Airwave Solutions / Motorola has market power in relation to the negotiations because:³²¹

- (a) The Home Office has [X];
- (b) Airwave Solutions / Motorola has an attractive 'inside' option as, absent any agreement over new terms, the Home Office is obliged to continue to support

³¹⁸ Including that in 2020 and 2021, Airwave Solutions / Motorola was working on over £[X] million of Home Office change requests while prolonged negotiations on pricing for such requests took place.

³¹⁹ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 4 and [Motorola's response to the CMA's Issues Statement](#), section 3.2.

³²⁰ Update Note sent by Motorola to the CMA on 7 September 2022.

³²¹ [Home Office's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 24, section 3.2.

the Airwave Network on the prevailing terms (those agreed in the HoTs in 2016) which it does not consider were competitive; and

- (c) it considers that there is asymmetry and a lack of information provided to the Home Office.

Evidence relating to the chronology and conduct of the negotiations

- 4.123 Motorola's submissions include that the negotiations since 2016 are unilateral demands by the Home Office for *ex gratia* discounts on the price of the continued operation of the Airwave Network agreed in the HoTs in 2016. In other words, the Home Office was seeking to exercise buyer power.
- 4.124 Motorola supported these submissions by saying that:
- (a) The 2018 negotiations started with the Home Office approaching Motorola in April 2018 seeking a ten-year continuation of the Airwave Network contract and that Motorola, despite the parties having agreed the pricing that would apply for as long as the Airwave Network continued to operate, proposed an 'innovative' discount structure of [~~3~~]%/[~~3~~]%/[~~3~~] over time, with discounts staggered in line with network investments that would be required.³²²
 - (b) The Home Office subsequently requested a proposal for an extension of the network based on a rolling 18-month contract structure but, 'As Airwave Solutions was unable to accommodate such an arrangement without significant increases in the price of the Airwave service, it offered the option of contract breaks at predefined points.'³²³
 - (c) Motorola went on to submit a proposal to the Home Office in June 2018³²⁴ and three months later the Home Office sought and obtained an extension of the operation of the Airwave service for a further three years beyond 2019 at a [~~3~~] discount to the existing service charge.³²⁵
- 4.125 In Motorola's view, this negotiation process, where the Home Office asked Airwave Solutions for quotes for different scenarios which Airwave Solutions went on to provide, demonstrated that Airwave Solutions was engaging with the Home Office constructively. Motorola noted that in doing so, Airwave Solutions was exploring ways of providing the Home Office with the flexibility of service provision it required.³²⁶

³²² [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 29.

³²³ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 30.

³²⁴ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 31.

³²⁵ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 32.

³²⁶ Motorola's response to the CMA's Issues Statement, 10 January 2022, paragraph 34. [Motorola's response to the CMA's Issues Statement](#)

- 4.126 Motorola also stated that the Home Office was in the driving seat throughout these negotiations, setting its requirements and deciding which of the options offered by Airwave Solutions it would eventually pursue. Airwave Solutions provided a range of options rather than simply pointing to the existing terms and (for example) threatening to stop providing the service altogether if the Home Office did not accept those terms.³²⁷
- 4.127 We have considered these submissions but, provisionally, do not make the same assessment. Rather, in our provisional view, the evidence suggests a different chronology and that both parties expected any significant extensions of the period of operation of the whole Airwave Network after 2019 to be the subject of negotiation, as we describe below (and we assess the parties' outside options and bargaining power in those negotiations below).

The 2018 negotiations

- 4.128 Our assessment of the evidence³²⁸ is that a process of discussion which led to the 2018 negotiations was instigated by Motorola in 2017 and that the negotiations in 2018 were not just a process in which Airwave Solutions and Motorola were seeking to respond to the Home Office's unilateral demands by offering it a range of options. On that basis, the evidence is not supportive of the Home Office exercising countervailing buyer power.
- 4.129 We start by echoing the general observation we made above. That is, negotiations will generally be conducted in response to an approach by one party to another. The responding party may put forward a range of options in its response. Those options may, however, reflect its market power. In principle, therefore, the instigation of negotiations by a party in the position of a customer does not necessarily indicate buyer power.
- 4.130 We also observe that in fact the discussions that culminated in the 2018 negotiations were begun by Motorola. Motorola informed the Home Office in January 2017 that Vodafone was withdrawing its Time Division Multiplex (TDM) service – an important component of the Airwave Network – in March 2019 because it was becoming obsolete.³²⁹ The following month, the Public Accounts Committee (PAC), having been informed of this development and its consequences, namely that without TDM, or a service that would replicate its functions, the existing Airwave Network could not operate, communicated its

³²⁷ Motorola's response to the CMA's Issues Statement, 10 January 2022, paragraph 35. [Motorola's response to the CMA's Issues Statement](#)

³²⁸ That referred to below and in other contemporaneous documents such as: Letter from Motorola to Home Office, November 2017. Internal Home Office presentation, November 2017. Emails from Motorola to the Home Office and internal Home Office emails, November 2017.

³²⁹ In an email, Motorola set out three options, stating that if notice of an extension to 31 December 2020 was given by 31 December 2017, Motorola would be prepared to make the necessary investment to address the issue (Email from Motorola to the Home Office, 16 January 2017).

concerns to the Home Office. The PAC was concerned that, given the delays in the delivery of ESN, this could lead to a gap of several months during which the emergency services would have no critical communications network at all. It pressed the Home Office to come back later in the year to update it on progress to implement a solution.³³⁰

- 4.131 In early July 2017, Motorola informed the Home Office that to avoid a gap in service associated with the discontinuation of Vodafone's TDM product, it needed to start the renovation of the underlying TDM network. It therefore required the Home Office to bring forward the decision to extend the operation of the Airwave Network, and for what period, to no later than 30 October 2017 (from 31 December 2018).³³¹
- 4.132 In September 2017, ESN having continued to suffer delays despite a re-planning exercise involving Motorola and EE,³³² Motorola expressed to the Home Office, in the latter's words, a need for [REDACTED].³³³
- 4.133 In that context,³³⁴ [REDACTED] Motorola UK [REDACTED] commented on his ability to strike a deal with the Home Office on ESN because of the leverage ownership of Airwave Solutions gave Motorola. He did so in the following terms, linking Motorola's roles in relation to both networks: [REDACTED]. Thereafter, negotiations were initiated by Motorola, focused on addressing its financial position in relation to ESN and obtaining an extension to the operation of the Airwave Network.³³⁵ Following a first meeting, the [REDACTED], Motorola UK set out the tactics to be adopted by Motorola in these negotiations.³³⁶
- 4.134 On 6 November 2017, in the context of further enquiries being made by the PAC, Motorola sought a commitment from the Home Office to conclude the negotiations (including extending the operation of the Airwave Network) by December 2017, subject to which Motorola would instruct Vodafone to proceed with the necessary investment in the relevant elements of the network. Motorola's position was perceived by the Home Office as an ultimatum and appears to have been effective

³³⁰ Internal Home Office briefing, 13 November 2017.

³³¹ The date by which, according to the HoTs, any notice of extensions would need to be served (Letter from Motorola to the Home Office, 6 July 2017).

³³² Internal Home Office presentation, 8 August 2017. Internal Motorola emails, 1 September 2017.

³³³ Internal Home Office presentation, 28 September 2017.

³³⁴ In an internal email relating to measures to be taken to improve margins by obtaining milestone upfront payments for Lot 2 (Internal Motorola emails, 1 September 2017).

³³⁵ Email from Motorola to the Home Office and Motorola internal email, 17 October 2017; internal Motorola presentation, 17 October 2017; and email from Motorola to the Home Office and Motorola internal emails, October 2017.

³³⁶ Internal Motorola emails, 1 September 2017; Additional relevant Motorola evidence: email from Motorola to the Home Office and Motorola internal emails, October 2017 and internal Motorola email, 19 October 2017.

in putting pressure on it.³³⁷ A briefing prepared for the Permanent Secretary prior to meeting Motorola's Chief Executive made this assessment:

[redacted].^{338 339}

- 4.135 We also observe that the outcome of these interactions between the parties was that, by the end of December 2017, Motorola had secured a payment of £[redacted] million relating to ESN, in return for, among other things, entering into a contract with [redacted].³⁴⁰
- 4.136 These events provide important context for the further negotiations that followed in 2018. We are minded to regard them as relevant in two ways:
- (a) First, they show that discussion of the extension of the operation of the Airwave Network had already begun beforehand, the matter having been raised by Motorola, rather than occurring at the Home Office's unilateral demand in 2018; and
 - (b) second, the outcome of these events was that Motorola received a substantial payment under the ESN Lot 2 contract, that the Home Office had no obligation to make, by using its control of the Airwave Network as a bargaining chip.
- 4.137 The events are not, in our provisional assessment, indicative of the Home Office exercising countervailing buyer power.
- 4.138 Moreover, our provisional assessment of the evidence relating to the negotiations that followed in 2018 is this: both parties engaged in the kind of discussions they expected were necessary once it became clear that a significant extension of the operation of the whole of the Airwave Network was required (because ESN was delayed). In those negotiations, rather than simply responding to the Home Office's initiative in driving matters, Motorola pursued its own objective of securing a long extension of the operation of the network and the offers it made to the Home Office were not compatible with the prompt delivery of ESN as the Home Office sought. The Home Office's position was that it would not entertain long extensions of the Airwave Network.
- 4.139 We observe the following:

³³⁷ Internal Home Office emails, 7 November 2017; Internal Home Office emails, 8 November 2017; email correspondence between the Home Office and external consultants, 7 November 2017; and email from the Cabinet Office to the Home Office and internal Home Office emails, 8 November 2017.

³³⁸ Home Office briefing paper, 23 November 2017 and Home Office briefing paper, 23 November 2017.

³³⁹ Email correspondence between Motorola and the Home Office, 15 December 2017 and Motorola internal email, 21 December 2017.

³⁴⁰ Email from Motorola to the Home Office and the Cabinet Office, 15 December 2017.

- (a) The evidence we have assessed in section 3 and Appendix D is consistent with both parties' positions being that, were it necessary after 2016 to significantly extend the operation of the Airwave Network, that would be the subject of negotiation between them.
- (b) Although the evidence shows that in early April 2018 the Home Office formally asked Motorola for a quote for a ten-year extension of the operation of the Airwave Network,³⁴¹ it was Motorola that had advocated an extension of this length in a previous meeting, while the Home Office had expressed doubt that this would be acceptable to the government.³⁴²
- (c) The discounts offered by Motorola in its ten-year fixed extension model were considered by the Home Office as too low and not compatible with incentivising Motorola to speed up the transition to ESN. They prompted its Senior Responsible Officer for the project to state that if the transition to ESN could not be completed within five years, '[X]'.³⁴³
- (d) A second model for the seven-year extension of the operation of the Airwave Network, with break clauses, does not appear to have been prepared at the Home Office's instigation, but rather at Motorola's.³⁴⁴
- (e) Contemporaneous documents show that Motorola resisted the Home Office's requests for an 18-month rolling contract for the ongoing operation of the network, stating it would be 'impossible to deal with financially'³⁴⁵ and apparently having told the Home Office it could 'only do long term' extensions.³⁴⁶

4.140 Internal Home Office documents show that it did not see [X]. By early July, Motorola was seeking to secure the Home Office's agreement to a 6-year extension, while the Home Office wanted to negotiate a 2.5- to 3.5-year extension.³⁴⁷

4.141 The evidence also shows that the Home Office's priority was resolving its concerns with the provision and timetable for delivery of ESN, rather than simply

³⁴¹ Email from the Home Office to Motorola, 5 April 2018.

³⁴² Based on 8 March email from [X] to [X] commenting on a commercial discussion held with the Home Office, in which he reports [X]. (Internal Motorola email 8 March 2017). Also based on evidence that Motorola had started to model a 10-year extension before the request from the Home Office was made. (Internal Motorola email, 6 March 2018 and internal Motorola analysis, 13 December 2017).

³⁴³ Internal Home Office email, 17 April 2018.

³⁴⁴ Internal Motorola presentation, 15 May 2018 and Motorola internal email, 15 May 2018.

³⁴⁵ Motorola presentation, 6 June 2018.

³⁴⁶ Home Office email to Deloitte, 16 July 2018.

³⁴⁷ Home Office internal emails 17 and 18 April 2018; Home Office internal emails 13 July, Home Office correspondence with Motorola and Home Office internal emails 4 and 5 July 2018; Home Office correspondence with Motorola and Home Office internal emails 4; and Home Office internal briefing note, 17 July 2018.

securing extensions of the operation of the Airwave Network.³⁴⁸ In May 2018 [REDACTED], and a new procurement exercise conducted at a later date, or to relaunch the programme with an incremental delivery plan.³⁴⁹ Resolving concerns with the ESN programme consumed a significant part of the negotiations in this period.³⁵⁰

- 4.142 Accordingly, our provisional view is that the evidence does not show that the 2018 negotiations were conducted in response to the Home Office exercising buyer power and making unilateral demands of Airwave Solutions / Motorola for *ex gratia* discounts on the price agreed in the HoTs in 2016. They were negotiations that both parties anticipated for the wholesale extension of the operation of the Airwave Network and the replanning of the delivery of ESN once it was clear that that latter was significantly delayed.

The 2021 negotiations

- 4.143 We make a similar assessment of the 2021 negotiations (which ultimately did not result in an agreement).
- 4.144 The evidence again shows that both parties anticipated, when it became clear that the period of operation of the Airwave Network would need further extension (due to ESN being further delayed), that negotiation would be required. We observe, for example, that:
- (a) In a review it undertook on 31 December 2019 (its impairment review), Motorola noted that it is [REDACTED] and that [REDACTED]. It also stated that [REDACTED].³⁵¹
 - (b) In August 2020, Motorola was preparing for discussions around two possible extension durations: a one to three year extension, with no discount, or a four to six year extension that would ‘allow multiple year overlap with ESN’ and would be likely to require Motorola to give a discount in order to secure.³⁵²
 - (c) In a presentation [REDACTED], prepared in anticipation of the 2021 negotiations, Motorola noted that, [REDACTED].³⁵³ The presentation set out Motorola’s key objectives for the negotiations, which included its desires to avoid [REDACTED], to protect itself against [REDACTED] and to maximise [REDACTED].
 - (d) The Home Office’s starting point in seeking to negotiate in 2021 was not the then current price. Instead, it sought to move to a pricing model that would be based on a cost + margin with an element of incentivisation linked to the

³⁴⁸ Email correspondence between Motorola and the Home Office, 2-5 July 2018.

³⁴⁹ Internal Home Office briefing, 6 June 2018.

³⁵⁰ Home Office Permanent Secretary – Briefing Note: Emergency Services Commercial Update.

³⁵¹ Airwave Review, 31 December 2019.

³⁵² Internal Motorola presentation, 25 August 2020.

³⁵³ Internal Motorola presentation, [REDACTED].

delivery of ESN.³⁵⁴ In its June 2021 negotiation playbook, the Home Office weighed up its various options to move forward with Motorola and its Lot 2 delivery and highlighted its recommendation to move to a fixed combined revenue profile.³⁵⁵

- (e) On 25 June 2021, Motorola made the case to the Home Office that the Airwave core charge should increase by £[X] million to fund its proposed capex investment (including 'a [X] on costs').³⁵⁶
- (f) On 2 August 2021, Motorola and the Home Office met to further their negotiations. A key focus of this meeting was the cost of future extensions of the Airwave Network's operation (as well as the Home Office's request for greater transparency, including the repeated request for open book accounting).³⁵⁷ The follow-up email sent by the Home Office demonstrates that little progress appears to have been made regarding the Home Office's concerns around the pricing of the Airwave Network extensions (or transparency).³⁵⁸
- (g) Following a request on 30 September 2021, Motorola provided the Home Office with its 2021 financial documents and projected profitability for the years 2023 to 2026.³⁵⁹

4.145 Each of the interactions described above are, in our provisional view, consistent with both the Home Office and Airwave Solutions / Motorola expecting that the further extension of the period of operation of the Airwave Network after 2019 would be subject to negotiation.

Factors affecting the bargaining positions of Motorola and the Home Office

4.146 In the 2018 and 2021 negotiations, the Home Office, in our provisional assessment, lacked alternative options and did not have countervailing buyer power, notwithstanding Motorola's submissions to that effect. Rather, Airwave Solutions / Motorola had market power. There are four relevant factors.

4.147 First, the parties were negotiating the continued operation of the Airwave Network and the price after the end of the original fixed period of the PFI Agreement because ESN was (and is) not ready to replace the network. When ESN was procured in 2014/15 and when the parties entered into the HoTs in 2016, the

³⁵⁴ Internal Motorola messages, 14 June 2021 and letter from Home Office to Motorola, 5 August 2021.

³⁵⁵ Internal Home Office presentation, June 2021.

³⁵⁶ Motorola presentation, 25 June 2021. We note that this [X]% margin was applied on top of intercompany margins.

³⁵⁷ Email from Home Office to Motorola, 4 August 2021.

³⁵⁸ Email from Home Office to Motorola, 4 August 2021.

³⁵⁹ Email from Motorola to the Home Office, 1 October 2021 and note of meeting between Home Office and Motorola, 2 August 2021.

expectation was that ESN would be ready by the end of the original fixed period of the PFI Agreement. This was reflected in the timetable agreed for its delivery.³⁶⁰ This expectation had not (and has not) been met.

- 4.148 Second, the Home Office and emergency services' users were (and still are) dependent on the provision of the Airwave Network by Airwave Solutions until ESN was (and is) ready as a replacement. The network has been described by both Motorola and the Home Office as 'National Critical Infrastructure.' It provides essential services in critical situations.³⁶¹ The Home Office and the users must have access to an integrated communications network meeting their operational requirements and the Airwave Network was (and still is) the only one available. No alternative network existed (nor exists) and no other provider was (nor is) likely to build and supply one in the uncertain period until the transition to ESN. The Home Office did not own and could not acquire the network and so could not retender the service (and that remains the case).
- 4.149 This point, in our provisional assessment, put (and continues to put) the Home Office – as the purchaser of services – in an intrinsically weaker position in any negotiation. Both parties to the negotiation know that the Airwave Network is critical. We observe in that context that, as we describe above, in late 2017, Airwave Solutions / Motorola indicated that it would not make the necessary investment to ensure continuity of service unless the Home Office agreed to its requests in relation to ESN.³⁶² We note above that the Home Office understood that indication as a means of seeking a higher price for any extended future provision of the Airwave Network.
- 4.150 It may not even be necessary in negotiations for Airwave Solutions / Motorola to threaten to discontinue provision of a critical service on which it knows the Home Office is dependent in order to affect those negotiations. The knowledge shared by both parties is likely to influence their abilities to demand or resist terms without the need for express threats.
- 4.151 The Home Office's bargaining position would also seem to be further weakened by the Airwave Network's dependency on Motorola for any equipment and upgrades that may be needed for any extension in the period of its operation beyond 2019 / 2020. This is illustrated by the following comment made in internal Home Office documents in late March 2018, before the start of the formal 2018 negotiation process:

³⁶⁰ If not reflected in Motorola's internal business documents – see paragraph 3.79.

³⁶¹ As illustrated by the concerns of the Public Accounts Committee in 2017 when there appeared to be a risk that services would be interrupted – see paragraph 4.130.

³⁶² We note that in its 18 August 2021 response to the CMA's proposal to make a market investigation reference, Motorola made the following statement [§<].

All of the (aging) switch and base station kit is Motorola, plus there is a very large installed base of extremely old Motorola customer premises equipment, supporting control rooms operating over Motorola proprietary interfaces. In the user domain about 50% of the devices and all the NSS key management facilities are Motorola. The current ESN-TETRA interworking solution relies entirely on a Motorola proprietary interface between an Airwave switch and the Motorola PSCS servers and it's extremely unlikely that they would develop a new version for us in any sort of reasonable timeframe if they were not the supplier on the ESN side. I guess that whichever route we take we need to maintain a reasonable relationship with Motorola otherwise we risk being held to ransom on upgrade costs etc.³⁶³

- 4.152 Third, we are minded to regard [X] as increasing Motorola's bargaining power. That price is both parties' outside option if they walk away from the negotiations. As our profitability analysis indicates, it is very advantageous to Motorola. It is accordingly disadvantageous to the Home Office. Motorola's comments in the March 2021 financial presentation to which we refer above, show it was aware of this and preparing to take it into account in the 2021 negotiations.³⁶⁴ The point is also likely to have applied in relation to the 2018 negotiations.
- 4.153 Fourth, we are further minded to consider that the Home Office's weak bargaining position was (and is) exacerbated by the information asymmetry between itself and Motorola. The evidence indicates that, at least four times since 2016, the Home Office has sought more detailed information than Motorola has agreed to provide about its costs and capital expenditure, putting the Home Office at a disadvantage in negotiations.
- 4.154 The first such request was in February 2016,³⁶⁵ when the Home Office asked Motorola to consider applying to the Airwave contract 'open book' accounting provisions like those for the Lot 2 (ESN) contract. Motorola refused, citing two reasons:
- (a) The complexity of the suite of contracts; and
 - (b) that Motorola was 'stepping into existing 15 year old fixed price contracts that have already been negotiated and agreed. The terms of those contracts were

³⁶³ Internal Home Office email, 27 March 2018.

³⁶⁴ As we say above, the presentation noted that, [X]. Internal Motorola presentation, [X].

³⁶⁵ As part of the 2016 change of control negotiations when Motorola was seeking to acquire Airwave Solutions.

the foundation and basis for the way we looked at the acquisition and all our approvals to proceed were founded on that analysis'.³⁶⁶

- 4.155 The second request was in December 2017, at which time the Home Office asked for more information on the cost of operating the Airwave Network to assist the negotiations planned for 2018. Instead of seeking open book accounting, it sent Motorola a set of questions to be answered, to 'provide a scope for the Airwave financial transparency that the Authority requires' and 'to facilitate negotiations planned for 2018'. Motorola responded that the request went '... very far beyond the current transparency obligations in the ASL³⁶⁷ contracts'.³⁶⁸
- 4.156 The 2018 negotiations started with no additional information being made available by Motorola. Home Office internal documents indicate that in July 2018 it sought to make the lack of transparency 'a central issue in the negotiation'.³⁶⁹ However, the negotiations were concluded without Motorola providing more costs information to the Home Office.³⁷⁰
- 4.157 The Home Office's third request came in an August 2021 video conference³⁷¹ between the parties, where it asked whether Motorola would consider an open book approach on a quarterly basis in future and Motorola refused. When the Home Office asked for a breakdown of the main costs drivers and their impact, Motorola responded by providing a limited set of information. In related correspondence to Motorola,³⁷² the Home Office stated that the agreement to extend the operation of the Airwave Network in 2018 was based on 'limited

³⁶⁶ The Home Office then asked if such provisions could be considered in the future. Motorola responded that this would be a function of three factors that would need to be worked though on a case by case basis, namely: [X]. Email from Motorola to the Home Office, 12 February 2016. Also internal Home Office emails, 10 February 2016 and correspondence between the Home Office and Motorola, 10-12 February 2016.

³⁶⁷ We understand this to be a reference to Airwave Services Limited.

³⁶⁸ The debate between the parties continued throughout January and February 2018, with Motorola noting that: [X]. Email from Cabinet Office to Motorola, 13 December 2017; email correspondence between Motorola and the Cabinet Office, 13 December 2017 and 16 January 2018; email correspondence between the Home Office, Cabinet Office, Motorola and external consultants, 22-16 January 2018 and; internal Home Office emails, 12-15 February 2018; email from Motorola to the Home Office, 22 January 2018; email correspondence between the Cabinet Office and Motorola, 22 January 2018; email correspondence between the Cabinet Office and Motorola, 22-23 January 2018; Home Office questions to Motorola, 23 January 2018; and internal Motorola emails, 28 February 2018.

³⁶⁹ Internal Home Office emails, 4-5 July 2018; email correspondence between Motorola and the Home Office and internal Home Office emails, 2-5 July 2018; email correspondence between Motorola and the Home Office and internal Home Office emails, 4 July 2018; internal Home Office email, 10 July 2018; and email correspondence between Motorola and the Home Office and internal Home Office emails, 4-5 July 2018.

³⁷⁰ We note that, in a letter sent to the Home Office in 2021 (letter from Motorola to the Home Office, 2 August 2021, Motorola stated that 'in 2018 the Home Office and Motorola agreed terms for an extension to 31 December 2022. At no point during those discussions was cost disclosure raised as a consideration for the Home Office in determining that this was value for money. That 2018 extension was needed because of delays to the ESN programme'. This account of what happened in 2018 does not appear to us to be consistent with either the exchange of emails in early 2018 that is referred to in this paragraph, or the Home Office's contemporaneous records of what it saw as key issues in July 2018.

³⁷¹ Email from Home Office to Motorola, 4 August 2021.

³⁷² Letter from the Home Office to Motorola, 5 August 2021.

knowledge of Motorola's profit and return on investment and based on a national shutdown date of Dec 2022'. It said that Airwave Solutions was now seeking a further investment of £[redacted] million³⁷³ and asking the Home Office to fund a substantial part of it through an increase of service charges 'without having sufficient transparency about previous investments nor control over the future delivery of it'.

- 4.158 Finally, in September 2021,³⁷⁴ the Home Office again put to Motorola that there was 'little financial information available, and no clear line of sight between Motorola's proposed charges, and the costs and risks of providing Airwave' and that on 'the limited information available, the Authority can only conclude that Motorola's proposed charges materially exceed the pricing that would be appropriate, and do not represent value for money'. In a subsequent letter, Motorola acknowledged that the Home Office had a desire 'to demonstrate value for money in any extension agreement.' However, it went on to note that such a requirement involved a 'far greater insight into Airwave's cost profile than our contracts require or that it is appropriate for us to provide'.³⁷⁵
- 4.159 Some of the evidence indicates that the lack of information transparency is liable to have distorted the outcome of the negotiations by enabling Motorola to present high capital expenditure figures:
- (a) After a meeting on 23 April 2018,³⁷⁶ as part of the 2018 negotiations, at which Motorola's capex projections were presented, Motorola's lead negotiator commented: '[redacted]'.³⁷⁷
 - (b) Analysis carried out by Motorola in 2021, before the 2021 negotiations, showed that the actual capital expenditure in the three periods from 2019 to 2021 was [redacted]%, [redacted]% and [redacted]% lower than presented to the Home Office in the 2018 negotiations.³⁷⁸
 - (c) In the 2021 negotiations, Motorola presented to the Home Office a capex plan that supported its case for a £[redacted] million annual price rise. In an internal exchange about this forecast, Motorola's [redacted] said to its [redacted].³⁷⁹

³⁷³ Motorola has described this to us as a figure representing a 'rough order of magnitude'.

³⁷⁴ Letter from the Home Office to Motorola, 14 September 2021.

³⁷⁵ Letter from Motorola to the Home Office, 2 August 2021.

³⁷⁶ Email from Motorola to Home Office 24 April 2018 attaching slide presentation and spreadsheet

³⁷⁷ Internal Motorola email, 23 April 2018.

³⁷⁸ Motorola analysis, 13 April 2018. The data for 2021 was based on forecast.

³⁷⁹ We also note that Motorola applied a [redacted]% margin on capex to which a mark-up had already been applied and for which no justification was provided to the Home Office. Motorola presentation, 4 June 2021; Motorola presentation, 25 June 2021; and internal Motorola message, 3 June 2021.

Provisional assessment

4.160 Taking account of the four factors in paragraphs 4.147 to 4.159 above, we therefore provisionally conclude that, in the 2018 and 2021 negotiations the Home Office lacked outside options and did not have countervailing buyer power. Airwave Solutions / Motorola had market power. ESN was not (and still is not) ready to replace the Airwave Network. The Home Office and emergency service users were (and are) dependent on the supply of that network by its owner, Airwave Solutions / Motorola. The parties were negotiating in the context of a default price that is highly advantageous to Airwave Solutions / Motorola (and which, owing to its lack of options and countervailing buyer power, the Home Office has little scope to vary), and there was (and is) a significant asymmetry of information between them.

Evidence of parties' perceptions of their relative bargaining positions

4.161 We can also make observations based on the parties' perceptions of their relative bargaining positions. Documents prepared by Airwave Solutions / Motorola and the Home Office set out high-level internal statements reflecting their perceptions of those positions. In other words, they offer an insight into Airwave Solutions' / Motorola's market power and the extent of the Home Office's buyer power. In our provisional view, they are consistent with our assessment of the parties' positions in the preceding paragraphs.

4.162 Airwave Solutions' / Motorola's perception of their position is described in internal business documents³⁸⁰ in 2019 and 2020:

[REDACTED].³⁸¹

[REDACTED].³⁸²

4.163 Those comments are consistent with the Home Office's perception of its position, as illustrated by what it said about the 2018 negotiations in its internal documents:

[REDACTED].³⁸³

4.164 These statements are, in our provisional view, very important for two (linked) reasons:

- (a) First, and notwithstanding Motorola's submission that the Home Office has monopsony power, they offer what appear to be clear statements that in negotiations about the continued provision of the Airwave Network after

³⁸⁰ Impairment assessments prepared to support its annual financial statements.

³⁸¹ Motorola impairment assessment, 31 December 2020.

³⁸² Motorola impairment assessment, 31 December 2019.

³⁸³ Home Office document, 23 July 2018, attached to internal Home Office email 23 July 2018.

2019, the Home Office lacked outside options and had limited buyer power, while Airwave Solutions / Motorola held market power.

- (b) Second, both parties were aware of the others' position. That is liable to have materially affected their approach to, and the outcome of, negotiations. Airwave Solutions and Motorola were aware they could offer terms the Home Office would have no option but to accept.

Recent discussions between Motorola and the Home Office

4.165 Motorola notified us on 7 September 2022³⁸⁴ [X]. Motorola told us that the Home Office has [X], and the Home Office has confirmed this.

4.166 The [X]. It was referred to in two documents put to the Home Office by Motorola: (i) [X]; and (ii) [X].³⁸⁵

4.167 The first document was described as containing [X] that, '... [X].' Under the [X].

4.168 The second document was put to the Home Office on the basis of some [X] (Motorola's **emphasis**):

□ [X].

□ [X]:

➤ [X].

.....

□ [X]:

➤ [X].³⁸⁶

➤ [X].

➤ [X].

➤ [X].

4.169 The second document also set out some '[X]' on which the [X] was based. Those included that, '[X].'

4.170 Motorola submitted that [X] should be viewed in the context of the points described in more detail below. In particular, that it cannot compete for its

³⁸⁴ Motorola Update Note to the CMA, 7 September 2022.

³⁸⁵ Motorola presentation to the Home Office, July 2022 and Motorola presentation to the Home Office, July 2022.

³⁸⁶ [X].

customers, that the Airwave agreement is a contract in ‘run-off’, that it cannot raise prices and any market power it has is transitory and outside its control. It said the [X], and the Home Office’s [X], shows that Motorola / Airwave Solutions do not enjoy market power or have a privileged bargaining position.

4.171 The Home Office has told us³⁸⁷ that it did [X]³⁸⁸ because, amongst other reasons:

(a) [X].

(b) [X].

(c) [X].

4.172 We have seen from the correspondence in which the Home Office responded to the [X] that the Home Office told Motorola that:³⁸⁹

[X].

[X].

[X].

[X].

4.173 We have considered the details of the [X], the parties’ submissions and comments on it and its implications for our competition assessment. Our provisional view is that the [X] does not indicate that Airwave Solutions / Motorola lacks market power or that the Home Office has countervailing buyer power.

4.174 Our provisional assessment is that Airwave Solutions’ / Motorola’s market power enables it currently to set a price above the competitive level to such an extent that it generates supernormal profits of around £1.1 billion in the years 2020 to 2026.³⁹⁰ [X] would [X] than that in which we estimate those supernormal profits would be generated.

4.175 In other words, even [X] the price would be set several hundred million pounds above the price we might expect in a competitive market. It appears to us that the Home Office had the choice of a bad deal, relative to the price we might expect in a competitive market, or a worse one (the status quo). It did not have options liable to constrain the price to the competitive level. That appears to us to be consistent with the existence of market power on the part of Airwave Solutions / Motorola, rather than evidence of its absence.

³⁸⁷ Home Office response to Q3 of RFI dated 13 September 2022.

³⁸⁸ [X].

³⁸⁹ Letter from Home Office to Motorola, 3 August 2022.

³⁹⁰ See our profitability analysis in section 6 of this provisional decision report.

- 4.176 Neither in our provisional assessment does the Home Office's [X] on the strength of our possible intervention indicate buyer power. In a well-functioning market the CMA would not be a factor providing a party with an outside option in commercial negotiations. The possibility of us imposing a price control to remedy an AEC is not what we would expect to give a party options and to be the basis on which we would observe that a market is working well.
- 4.177 Putting these points another way, Motorola's [X] and the Home Office's [X] might indicate a lack of market power or the presence of countervailing buyer power if either: (i) it set the price at a competitive level; or (ii) the Home Office could reject on the basis that it could induce [X] even in the absence of CMA intervention. Neither condition is met here.
- 4.178 We also observe that Motorola linked [X] to extend the Airwave contractual arrangements to the resolution of its position in the delivery of ESN. We note that [X] says that Motorola's [X] would cause it a 'material economic cost' but it would be prepared to agree terms for a [X]. That, in our provisional assessment, is an indication that Motorola would absorb the cost in relation to [X], and agree [X], only if the Home Office agrees a price [X] several hundred million pounds greater than the competitive level. That too appears to us to be consistent with its market power in relation to the Airwave Network.
- 4.179 The making of [X] by Motorola and its [X] by the Home Office appears, therefore, to support our provisional assessment of Airwave Solutions' / Motorola's market power and the Home Office's lack of buyer power.

Motorola's submissions on the negotiations and the recent discussions

- 4.180 We note above that Motorola made submissions that it and Airwave Solutions cannot and do not have market power. Likewise, that the Home Office has significant bargaining power as a monopsonist. It cited examples of where the Home Office was said to have used its monopsony power. Motorola said, as we have noted above, that the only 'negotiations' between the parties since 2016 were Home Office unilateral demands for *ex gratia* discounts on a previously agreed price.
- 4.181 We have assessed in the preceding paragraphs matters we consider relevant to the setting of the price for the provision of the Airwave Network from 2020 and in doing so have considered whether Airwave Solutions / Motorola had (and continues to have) market power and whether, as Motorola submitted, the Home Office had (and has) countervailing buyer power. We also make the following further observations on Motorola's submissions.
- 4.182 Motorola submitted that: it / Airwave Solutions cannot have market power in respect of the Airwave Network because it cannot compete for its customers, who

are being removed by the Home Office's procurement of ESN; the contract under which the Airwave Network is provided is a contract in 'run-off' and the provision of the network is 'simply' the execution of a contract on agreed terms; and that any market power it has is transitory and outside its control.

- 4.183 We are minded, for the reasons set out in this section 4 (and in section 3 of this provisional decision report), to regard the negotiations of the price for the continued operation of the Airwave Network as competitive interactions between the parties (or interactions that would be competitive in a well-functioning market where the Home Office had alternative options). For the reasons we provisionally find in this section of this provisional decision report, Airwave Solutions / Motorola has market power and its customers are captive for the time being and until ESN or alternative competitive arrangements (or arrangements to similar effect) are in place.
- 4.184 We observe that Airwave Solutions' / Motorola's market power in respect of the Airwave Network is limited in time in that when ESN, or alternative competitive arrangements (or arrangements to similar effect), replace the current operation of that network, that market power would cease to have effect. That, however, is not determinative of market power now.
- 4.185 Rather, what is determinative is whether there are features of the market that distort competition now and on a forward looking basis. In this case, for the reasons we have set out, we provisionally find that there are such features. They are likely to exist until ESN or alternative competitive arrangements (or arrangements to similar effect) are in place. That is, until 2026 at the earliest and [X] possibly [X] after that.
- 4.186 Whether or not the existence of market power is within Motorola's control is not, in our provisional view, to the point. Market power may exist as a result of supplier behaviour but equally because of factors entirely independent of suppliers such as market structure or customer behaviour. The question is whether there are features of the market (however they may arise) that prevent, restrict or distort competition. That is what we have assessed.
- 4.187 Motorola also submitted that it and Airwave Solutions cannot have market power in respect of the Airwave Network because it is not, and has not been, in a position to raise prices.³⁹¹ We note that it cannot raise prices for the provision of the network services from 2020 in that there is a default price agreed (pursuant to the HoTs) where the Home Office serves a National Shutdown Notice extending the period of operation of the Airwave Network. That price would apply absent further

³⁹¹ Other, we note, than indexation.

negotiation and agreement. However, that does not mean that the price is at a competitive level.

- 4.188 Moreover, as we provisionally find, the price is subject to negotiation and in practice negotiations have occurred. In those negotiations, for the reasons we set out in this section of our provisional decision report, the Home Office has no alternatives and Motorola can maintain the price substantially above the level we might expect in a competitive market. That in our provisional view indicates market power. That the price is not higher does not preclude the existence of such power.
- 4.189 As to the Home Office's position, Motorola's submits that it has monopsony power and that such power is demonstrated by its refusal to make payments due under contracts with Airwave Solutions and with Motorola in relation to ESN. We note that if payments are disputed this means a party is asserting its perceived contractual rights. Asserting such rights is something even parties without countervailing bargaining power may be expected to do. In our provisional assessment those matters have no bearing on the question of whether, in the negotiations in which the price of the provision of the Airwave Network is now set, the Home Office has alternative options and buyer power or Airwave Solutions / Motorola has market power.
- 4.190 One of the specific examples cited by Motorola appears to relate to the ongoing debate between it and the Home Office about the performance of the Kodiak software (see section 5). That is part of the delivery of ESN. It does not in our provisional assessment illustrate whether the Home Office has buyer power in the price setting negotiations for the Airwave Network. Motorola has not explained how it would do so.
- 4.191 Motorola also submitted that the Home Office can set an unrealistic timetable for ESN, acting independently of budget constraints and industry's rejection of those targets. We make three observations in that connection:
- (a) First, the primary focus of our investigation is whether Airwave Solutions / Motorola has market power in respect of the Airwave Network. It is not whether the Home Office exercised buyer power in the procurement of ESN.
 - (b) Second, the timetable for ESN was set in light of the impending end of the PFI Agreement and related Airwave contracts and in response to the various issues described above. The Home Office consulted Motorola and EE on increasing the timetable for the initial delivery of ESN³⁹² to 24 months, but both stated that 21 months would be sufficient. The timetable might have

³⁹² After which the transition between networks would occur.

proved to be unrealistic but it was not imposed by the Home Office on Motorola and EE but, on the contrary, was endorsed by them.³⁹³

- 4.192 Third, irrespective of whether the original timetable was ambitious or not, it has been significantly exceeded. The Home Office has not been able to exercise power to ensure the timetable was met.
- 4.193 Our provisional view, accordingly, is that the ESN timetable is not probative of the Home Office's countervailing buyer power in relation to Airwave Solutions' services or indicative that it had such power.
- 4.194 A further submission is that the Home Office's monopsony power was manifested in its obstructive behaviour towards Motorola's ESN delivery efforts after October 2020. In particular, the obstruction of the implementation of a [X] plan. Again, it is unclear how this is relevant to the question of Home Office buyer power (and Airwave Solutions' / Motorola's market power) in relation to the Airwave Network.
- 4.195 On these bases, we are not minded to agree with Motorola's submissions that Airwave Solutions' / Motorola's do not have market power or that the Home Office's has buyer power.

Benchmarking

- 4.196 We have also considered whether the benchmarking provisions in the PFI Agreement and service contracts effectively constrain the price at which the Airwave Network and services are provided. This is relevant because those provisions may operate to address competition concerns that otherwise arise.
- 4.197 Our provisional assessment is that there are weaknesses in the benchmarking provisions and they are unlikely to be effective in constraining prices, either through the benchmarking process itself or as a lever that can be employed in negotiations between the parties. The weaknesses include: (i) the difficulty we can observe the parties having in the original period of the PFI Agreement in establishing appropriate peers against which to compare the Airwave Network; and (ii) the scope for dispute to which the provisions gave rise. The provisions have not, in our provisional view, operated as an effective price constraint on Airwave Solutions / Motorola in the period from 2020 and are unlikely to do so in future.
- 4.198 We have taken into account that, in its response to the issues statement,³⁹⁴ Motorola stated:

³⁹³ In communications to the Home Office – see paragraph 3.79.

³⁹⁴ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraphs 95 and 95.

The Issues Statement is silent on whether the Group intends to take account of the benchmarking provisions agreed between the parties, yet this may have a significant bearing on profitability [38] to invoke these provisions. In addition to carefully drafted provisions on pricing, the contract with the Home Office contains an independent third-party referral process (the “Benchmarking Process”³⁹⁵) to ensure that prices are fair, which has already been used by the parties. Indeed, the Home Office preferred to suspend the Benchmarking Process in order to receive price reductions in the extension negotiations of 2016 and 2018. The Home Office was satisfied by both the price discounts and overall contractual arrangements, including additional capital investments executed in those agreements. The Benchmarking Process was used on two occasions to verify the fairness of pricing, and on both occasions the third party found no excessive pricing for the Airwave service.

The Group is therefore respectfully invited to give requisite weight to the method chosen by the well-advised parties to address questions of value for money within the contract. The benchmarking provisions are fully capable of addressing value for money. Otherwise, contractual certainty is destroyed, and that cannot be an appropriate or proportionate intervention.

4.199 Likewise that, in its 15 November 2021 submission to us,³⁹⁶ Motorola said:

A benchmarking study of Airwave Services undertaken by Gartner for Airwave and the Home Office dated July 2014 casts severe doubts on the idea of there being a “market rate for TETRA services”. The 2014 Gartner study goes to great length to point out the methodological difficulties encountered in trying to benchmark Airwave’s pricing and highlights the efforts that had to be taken – with full support from Airwave – to overcome these difficulties. In particular, Gartner notes that “none of the peers are delivered as PFIs and thus they all have different and unknown set up costs borne by their respective Governments or agencies and consequently different costs associated with capital.”

4.200 We have also considered the Home Office’s submissions³⁹⁷ that the benchmarking has proven to be largely ineffective and that the two attempts to use benchmarking to ensure the Airwave Network services are ‘Value for Money’ have been unsuccessful. In particular, there were, the Home Office said, considerable challenges associated with the first benchmarking exercise undertaken by Accenture in 2008, the outcome of which did not result in any change in prices.

³⁹⁵ There is no such term in the PFI Agreement (but we believe that this refers to the benchmarking clauses that we describe further below), although the Ambulance Contract uses this terminology.

³⁹⁶ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 150.

³⁹⁷ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 78.

With regard to the second benchmarking exercise by Gartner in 2014, the Home Office stated that it took over two and half years to deliver any resolution and that the resolution itself involved a modest discount. Further, no consensus was reached on the correct definition of 'Value for Money', or the appropriateness of 'peers' used for comparison purposes, and as such the Gartner report had limited impact on the Home Office's ability to negotiate lower prices.

- 4.201 We have noted that the Home Office disagreed with Motorola's position that on the two occasions that the benchmarking process was used 'the third party found no excessive pricing for Airwave service'. The Home Office reiterated its position that the Accenture benchmarking exercise was unable to reach a meaningful conclusion as a result of significant difficulties in conducting the comparison, and that the Gartner exercise did indicate excessive pricing, despite being 'predicated on very generous tolerances'.³⁹⁸
- 4.202 Appendix E sets out our understanding of relevant facts based on our review of the internal documents received from Motorola and the Home Office and sets out evidence on which we base our provisional views. The documents we have reviewed include:
- (a) Key contractual provisions, including [redacted] of the PFI Agreement;
 - (b) the benchmarking reports produced under [redacted] of the PFI Agreement including:
 - (i) the May 2008 benchmarking report commissioned by Airwave Solutions from Accenture; and
 - (ii) the July 2014 Gartner report which the Home Office asked Airwave Solutions to commission in relation to the benchmarking of the network services it provided under the framework arrangement for police forces (the PFI Agreement), to ascertain if Airwave Solutions was meeting the Value for Money commitments set out in the original contract;
 - (c) internal emails and email exchanges involving Motorola and Home Office staff (and in relation to the Gartner report, this included exchanges between the Home Office and Motorola in relation to application of the recommendations made in the report and the subsequent dispute over these recommendations); and
 - (d) documents relating to the role the benchmarking provisions played in the negotiations between the parties in 2016, 2018 and 2021.

³⁹⁸ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 94.

- 4.203 There is, in our provisional assessment, some but limited evidence of the effectiveness of the benchmarking provisions as a price constraint and a source of leverage for the Home Office in negotiations. That derives from two sources.
- 4.204 First, Motorola's internal documents indicate that the waiving of the benchmarking provisions was an objective that it had from the outset of the 2016 change of control negotiations (that led to the HoTs). In the 2018 negotiations, Motorola again sought (successfully) to extend the waiver of the benchmarking provisions. In 2021, it asked for the benchmarking rights to be further waived until 1 January 2027, but the Home Office refused [REDACTED].³⁹⁹
- 4.205 Second, Motorola gave the Home Office a £[REDACTED] million credit (comprising six instalments between 31 March 2016 and 31 December 2019: one of £[REDACTED] million, one of £[REDACTED] million and four of £[REDACTED] million) in settlement of a benchmarking dispute in 2016 and the Home Office agreed not to apply the benchmarking provisions before 1 January 2021. In the 2018 negotiations, Motorola agreed to discounts on the Airwave service charge (price) and to extend the £[REDACTED] million annual credit payments to the Home Office until December 2022 and, amongst other things, the waiver of the benchmarking provisions in the PFI Agreement and police services contracts was extended to 1 January 2023.
- 4.206 The amounts that the Home Office secured in 2016 appear to have accounted for around [REDACTED]% of Airwave Solutions' core revenue in the period from 2016 to 2019. The £[REDACTED] million discount ongoing to December 2022 appears to be equivalent to around [REDACTED]% of the total charges for police forces to use the network.⁴⁰⁰
- 4.207 However, the evidence also suggests that Motorola's concerns were driven to a significant extent by the impact of an open benchmarking dispute on its prospective relationship with the Home Office (at least in 2016), and by the possibility of further disputes in future and the consequent lack of certainty that created in terms of the value of the business (and the acquisition price). Motorola's concern appears to have been less about the benchmarking provisions ultimately operating as an effective constraint on the price of supply of the Airwave Network and services (that is, one liable to constrain the price to the level that might be expected in a competitive market).
- 4.208 There is also no evidence of an active trade-off being made by the Home Office involving the waiving of its right to benchmark. In the 2018 negotiations, the [REDACTED]% discount the Home Office obtained appears to have been presented by Motorola as a trade-off for the reduction of the latter's potential liabilities under the DoR, rather than in return for the waiving of the right to benchmark. To the extent that

³⁹⁹ Letter from Motorola to the Home Office, 3 December 2021.

⁴⁰⁰ Email from Motorola to the Home Office, 4 February 2016.

there was a trade-off involving the waiving of the right to benchmarking, it may have been in return for the continuation of annual £[X] million credit agreed in 2016, but the evidence of such any trade-off is unclear. And, as far as we can tell from our review of the documents, no discount was given to some users of the network even though they also waived their right to benchmarking (for example, it does not appear that a discount was given to the DHSC in return for the waiver of its right to benchmark Bundle 1 services).

4.209 Moreover, our review of the relevant contractual provisions, the Accenture and Gartner reports and the related emails indicates that the benchmarking provisions are subject to substantive and procedural weaknesses, and that they are unlikely to be effective in constraining prices to the competitive level in the period from 2020 (either through the benchmarking process itself or as a negotiation tool). These are the reasons:

- (a) The charges for services provided by Airwave Solutions are not itemised, which makes like-for-like comparisons with peer networks difficult.
- (b) There are, as the Gartner report recognised, few, if any, appropriate peers against which to compare the Airwave Network. We note, in this regard, Motorola's opinion, as expressed by one of its senior executives in 2015, that the Gartner 'peer' methodology was 'fundamentally flawed' and capable of being 'undermined.'⁴⁰¹ We note too its submissions referred to above about the methodological difficulties in benchmarking Airwave's pricing and the 'severe doubts' the Gartner report cast on there being a market rate for TETRA services.
- (c) Again as noted in the Gartner report, the funding of the Airwave Network through a PFI Agreement makes it difficult to compare the full service charges to the cost of provision of other LMR networks for public safety.⁴⁰²
- (d) The contract clauses do not oblige Airwave Solutions to provide a detailed breakdown of costs, do not define what amounts to 'Value for Money' and do not appear to have an effective implementation process.
- (e) The above issues create significant scope for dispute between the Home Office and Airwave Solutions, as illustrated by the exchanges between them in 2014 and 2015. Past experience indicates that these provisions, as drafted, create a significant risk that court action would be required if the benchmark exercise showed a significant gap between Airwave Solutions'

⁴⁰¹ Internal Motorola email, 22 July 2015.

⁴⁰² The weaknesses in (b) and (c), it appears to us, are likely now to be just as, if not more, acute. There will be few if any comparator LMR networks that operate following the end of a fixed-term contract, like the PFI Agreement, but in competitive conditions.

pricing and the average price of the peer group, with the attendant lead times and risks involved.

- (f) The Home Office does not have a right to benchmark until 2023, and the process may involve court action and take several years with no certainty over the outcome.

4.210 Both the Home Office and Motorola are aware of these limitations of the benchmarking provisions, as the matters in sub-paragraph (b) above indicate. That knowledge is liable significantly to weaken the Home Office's hand in any negotiation.

4.211 We also observe that the outcome – the level of the charges paid by the Home Office for Airwave Solutions' services⁴⁰³ – assessed in our profitability analysis is consistent with the benchmarking provisions operating only as a minor constraint on prices. That analysis suggests Airwave Solutions / Motorola will generate excess profits between 2020 and 2026 of around £1.1 billion.

4.212 Further, we find it difficult to reconcile the facts that we have been able to establish through our review of contemporaneous documents with Motorola's characterisation of events that: 'The Home Office preferred to [X]. The Home Office was satisfied by both the price discounts and overall contractual arrangements, including additional capital investments executed in those agreements.'⁴⁰⁴ Given the circumstances in which those negotiations took place and all the other factors that we are minded to regard as affecting the parties' bargaining positions, as assessed in this provisional decision report, we are not minded to regard the waiving of the benchmarking right as probative of the level of competitive constraint on the price paid.

4.213 Accordingly, we provisionally conclude, based on the above evidence and our profitability analysis, that the benchmarking provisions included in [X] of the PFI Agreement are likely to be largely ineffective in constraining the price of the Airwave Network in the period from 2020 (if, for example, the Home Office sought to commission a benchmarking study from 1 January 2023 onwards or threatened to do so).

Concluding comments

4.214 The market for the supply of communications network services for public safety has not, in our provisional assessment, developed as we might expect in a well-functioning market. Over the lifetime of the PFI Agreement the Home Office's

⁴⁰³ Including the £[X] million annual discount relating to the waiving of the benchmarking right obtained in 2016 and extended to December 2022 as part of the 2018 negotiations.

⁴⁰⁴ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022.

options have narrowed (or did not materialise), features of the market have developed that distort competition and Airwave Solutions / Motorola has unilateral market power.

- 4.215 In a well-functioning market we would expect the arrangements under the PFI Agreement to have been replaced at, or close to, the end of the original fixed period of that agreement by either:
- (a) The replacement of the Airwave Network with a competitively priced new and enhanced service; or
 - (b) a competitively priced continuation of the operation of the existing network.
- 4.216 That has not happened, however. While the terms of the PFI Agreement might have been expected to constrain the price of the Airwave Network in the original fixed period, they no longer, in our provisional view, do so. The price is set in negotiations in which the Home Office lacks alternative options and Airwave Solutions / Motorola has market power. Competition is, in our provisional conclusion, distorted because:
- (a) The Airwave Network is a critical piece of infrastructure on which the emergency services in Great Britain, and ultimately lives, depend.
 - (b) The Airwave Network is the only network of its kind in Great Britain and is provided by a monopolist. No other such networks exist nor are they likely to be constructed and ready for use before ESN is able to replace it.
 - (c) The Airwave Network assets have not transferred to the Home Office under the terms of the PFI Agreement, Airwave Solutions still owns them (and the related business) and the Home Office cannot retender or realistically threaten to retender their provision.
 - (d) The longer than anticipated lead time for the delivery of ESN and its replacement of the Airwave Network: it will not be ready to replace the Airwave Network until at least 2026 and [X] possibly [X] later.
 - (e) The Home Office and the emergency services in Great Britain are locked in with the incumbent supplier of communications network services – Airwave Solutions (and Motorola) – beyond the period over which its prices were, or should have been, constrained by the terms of the PFI Agreement (and Airwave Solutions should have recouped its investment and a reasonable return).
 - (f) The Home Office has very weak bargaining power.
 - (g) The asymmetry of information between the parties.

- (h) The lack of effective constraints provided by the terms of the PFI Agreement on the price of the provision of the network after 2019, including the benchmarking provisions which are likely to be ineffective.

5. COMPETITIVE ASSESSMENT (2): MARKET FEATURES RELATING TO MOTOROLA'S DUAL ROLE AND INTERWORKING

- 5.1 This section contains our provisional assessment of the competitive effects in relation to two issues:
- (a) Motorola's dual role as the provider of the Airwave Network and services and in the delivery of ESN; and
 - (b) what is known as 'interworking' which refers to connecting two systems together to allow them to exchange data or jointly perform a function.
- 5.2 First, we consider Motorola's dual role as: (i) the owner of Airwave Solutions, the operator of the Airwave Network; and (ii) in the delivery of ESN under the Lot 2 contract. In particular, we examine:
- (a) Motorola's incentives to deliver its ESN commitments and whether these may be distorted by its ownership of Airwave Solutions;
 - (b) Motorola's ability to act on any such incentives; and
 - (c) whether observable outcomes in ESN delivery are consistent with any concerns we identify in relation to Motorola's incentives and ability or assuage them.
- 5.3 Our provisional conclusions in relation to Motorola's dual role are as follows:
- (a) Motorola's incentives to deliver its ESN Lot 2 obligations effectively and efficiently are dulled by the substantial profits it makes from the continued operation of the Airwave Network;
 - (b) Motorola is able to act on such incentives by virtue of its central role in the delivery of ESN and the limited counter-incentives created by the effects of the DoR and the ESN contractual framework; and
 - (c) observable outcomes in the delivery of ESN are consistent with such incentives and ability.
- 5.4 In the latter part of this section, we consider interworking. An interworking solution is required to enable the transition from the Airwave Network to ESN and Airwave Solutions, and potentially Motorola, have a key role in delivering it.
- 5.5 We examine the current market situation to understand the extent to which the Home Office is dependent on Airwave Solutions, the incumbent supplier of communications network services for public safety. We consider specifically

whether such dependency creates the potential for Airwave Solutions and Motorola, as its owner, to extract a supernormal profit for the provision or facilitation of an alternative interworking solution⁴⁰⁵ and/or delay or hamper its delivery, thereby prolonging the operation of the Airwave Network. The subsections below set out:

- (a) The purpose of interworking and its importance to enabling the transition from the Airwave Network to ESN;
- (b) a brief background, on how the current interworking solution has developed over time and the roles of Motorola and Airwave Solutions in delivering it; and
- (c) our assessment of the current situation and the extent to which there is potential for Airwave Solutions and Motorola, as its owner, to extract a supernormal profit for an interworking solution and/or delay or hamper its delivery.

5.6 The provisional conclusions we reach in relation to interworking are:

- (a) If Kodiak is to be replaced with an alternative MCPTT application, an alternative interworking solution is required for the transition to ESN.
- (b) The Home Office is dependent on Airwave Solutions and, potentially Motorola, delivering and/or facilitating the development and delivery of such an alternative solution. Whilst Motorola (via Airwave Solutions) is obligated to develop an alternative interworking solution if required to do so by the Home Office, the terms of this, including the price and timing, are not contractually specified.
- (c) As a result, key parameters are dependent on Airwave Solutions' / Motorola's incentives to deliver or facilitate an alternative interworking solution, which we provisionally consider are dulled by the profits Motorola derives from its position as the owner of Airwave Solutions, the monopoly incumbent for the provision of communications network services for public safety.
- (d) The likely need for an alternative interworking solution strengthens the market power of Airwave Solutions and Motorola as it enables them to delay or hamper and/or make more costly the transition of users from the Airwave Network to ESN.
- (e) Our provisional conclusions in relation to interworking are not dependent on Motorola's role as a key supplier to ESN. In other words, we would have materially the same concerns even if Motorola had no such role in relation to ESN (since Airwave Solutions / Motorola would still have the incentives and

⁴⁰⁵ By setting a price above the level that would be expected in a competitive market.

ability to delay, hamper or make more costly the development of an alternative interworking solution in order to prolong the super-profitable monopoly position in relation to the Airwave Network).

- 5.7 As set out below, we provisionally consider that Motorola's dual role and the position in relation to interworking are liable to strengthen and have the potential to prolong the unilateral market power of Airwave Solutions and Motorola described in section 4 of this provisional decision report (and which in our provisional view exists even without those two additional factors).

Recent developments

- 5.8 In the context of both Motorola's dual role and interworking, we note that Motorola and the Home Office are in discussions aimed at bringing about a [X] – and thereby [X] – by the [X] (see paragraph 2.108).
- 5.9 In the event that [X] and Motorola has [X], Motorola's [X]. That would address our provisional concerns centred on Motorola's incentives and ability to delay ESN and thereby prolong the operation of the Airwave Network.
- 5.10 It is, however, at present unclear whether Motorola and the Home Office [X]. Further, it is also unclear whether [X] would result in the removal of Motorola's MCPTT application, Kodiak, from ESN.
- 5.11 In this context Motorola submitted on 26 September 2022 that it is envisaged that the [X] would include the removal of Kodiak from ESN. According to Motorola, it is envisaged that [X]. Motorola also submitted that the '[X]'.⁴⁰⁶
- 5.12 The Home Office has confirmed that discussions are ongoing. However, it confirmed the '[X]'.⁴⁰⁷
- 5.13 We note that the ongoing discussions between Motorola and the Home Office may bring about changes which have the potential to address some, or all, of our concerns in relation to Motorola's dual role and interworking. It is, however, not clear whether these discussions will ultimately enable the parties to reach an agreement that is capable of addressing our concerns. We note in particular that:
- (a) Should Kodiak continue to be used in ESN [X], then Motorola's dual role would be diminished [X]; and
 - (b) It is unclear whether any [X] would encompass provisions in relation to Airwave Solutions' and / or Motorola's obligation to provide or facilitate an

⁴⁰⁶ Motorola submission dated 26 September 2022 made in the context of CMA putback request.

⁴⁰⁷ Home Office response to RFI of 28 September 2022, paragraph 4.

alternative interworking solution should the Kodiak MCPTT application be replaced with an alternative MCPTT application.

- 5.14 In light of the above uncertainty, we have analysed Motorola's dual role and interworking on the basis of the contractual position as it stands at the date of this provisional decision report rather than on the basis of any future [X].

Motorola's dual role

Introduction

- 5.15 This subsection sets out our analysis of Motorola's dual role as: (i) owner of Airwave Solutions, the operator of the Airwave Network; and (ii) a key supplier to ESN, the replacement network. Specifically, we examine the extent to which Motorola's ownership of Airwave Solutions (and its associated profits) has the potential to affect Motorola's approach to the delivery of the elements of ESN that it is responsible for (ie Lot 2) in a way that could delay the delivery of ESN, thereby prolonging the operation (and profitability) of the Airwave Network.

Motorola's submissions

- 5.16 Motorola has made a number of representations in relation to this dual role and observable delays to ESN. It has submitted that:
- (a) There is no evidence that Motorola's dual role has contributed to the delays of ESN.⁴⁰⁸ Motorola is one of a number of suppliers to ESN and 'critical components from suppliers other than Motorola are still missing'.⁴⁰⁹ As such, it is not possible to determine who caused a delay to ESN until its launch.
 - (b) Even if Motorola had an incentive to delay ESN, it could not act on any such incentive.⁴¹⁰
 - (c) The ESMCP has been the subject of numerous reviews by the National Audit Office (NAO) and the Public Accounts Committee (PAC), which concluded that the Home Office and other sponsor bodies were underrating the seriousness of the risks associated with the delivery of ESN.⁴¹¹ These reviews noted that failures by the Home Office with respect to ESN are not unique, rather, they are indicative of much broader, systematic issues at the Home Office with respect to the delivery of large-scale technology

⁴⁰⁸ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021.

⁴⁰⁹ Motorola's Response to the CMA's Questions on Remedies, 4 March 2022, page 28.

⁴¹⁰ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 19.

⁴¹¹ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 34.

projects.⁴¹² Further, none of the significant technical challenges and principal causes of delay identified by the NAO were Motorola's responsibility.⁴¹³

- (d) Motorola's Lot 2 ESN contract has evolved significantly from its inception in December 2015. Leaving aside the major structural and scope changes that the 2018/19 'ESMCP Reset' brought about, the delivery has been characterised by consistent requests by the Home Office to increase the core scope prescribed by the Home Office at the outset of the ESMCP. Often this has been as a result of the Home Office receiving feedback from its key user groups that the Home Office's mandated requirements (against which Motorola is required to deliver its solution) are not fit for purpose or have been interpreted inconsistently.⁴¹⁴

Home Office's submissions

- 5.17 In relation to Motorola's dual role, the Home Office told us that:

At a high-level, Motorola's earnings from Airwave Solutions' charges, the vast majority of which are paid for from the public purse, massively outweigh the earnings that Motorola has received or will receive from the ESN. Therefore, the value of other benefits would need to be considerable to level or tilt the balance in favour of Motorola rolling out ESN.⁴¹⁵

- 5.18 The Home Office told us that the causes of delay to ESN since 2019 have centred on technology delivery and Motorola's areas of responsibility.⁴¹⁶

- 5.19 The Home Office also told us that the delivery approach (post the change of planned MCPTT application from Wave 7000 to Kodiak) was focused on an incremental set of products based on Motorola's Kodiak application and to be delivered by Motorola.⁴¹⁷ The Home Office submitted, by reference to a large number of ESMCP Programme Board minutes, that there had been significant delays with a number of Motorola's Kodiak-related deliverables, which in turn had material knock-on effects on the ESMCP programme as a whole. We set out extracts from the Home Office's submissions in this respect in Appendix F at paragraph 81.

⁴¹² [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 35.

⁴¹³ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 61.

⁴¹⁴ [Motorola's response to the CMA's market investigation reference](#), 15 November 2021, paragraph 49.

⁴¹⁵ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 100.

⁴¹⁶ Home Office presentation to the CMA, 1 December 2021.

⁴¹⁷ Home Office presentation to the CMA, 1 December 2021.

Our approach to the assessment

- 5.20 We set out below our approach to analysing Motorola's dual role and the areas on which we have focused:
- (a) First, we examine whether the incentives of Motorola to deliver Lot 2 effectively and efficiently may be distorted by its ownership of Airwave Solutions.
 - (b) Second, we consider Motorola's ability to act on any such incentives by delaying delivery of Lot 2, which in turn would prolong the operation of the Airwave Network (and associated profits). In this context, we consider whether such ability is constrained by contractual provisions, including the DoR.
 - (c) Third, we consider the observable outcomes in relation to the delivery of ESN as these could be indicators of distortions of competition in the relevant market.⁴¹⁸ We do so not with the aim of determining conclusively whether Motorola or other parties are responsible for delays but as a sense-check of concerns flowing from our provisional views of Motorola's incentives and ability. That is, to see whether or not there are observable outcomes that are consistent with such concerns.

Incentives

- 5.21 The available evidence, summarised in Appendix F at paragraphs 2 to 7, suggests that the Lot 2 contract was competitively procured. In such circumstances, we would expect the conduct of Motorola in its delivery of Lot 2 to be incentivised by the short term and long term financial rewards that it could derive from the effective and efficient delivery of its Lot 2 obligations but note that its incentives could be affected by its ownership of Airwave Solutions.
- 5.22 In this subsection, we therefore examine whether the incentives of Motorola to deliver Lot 2 effectively and efficiently may be distorted by its ownership of Airwave Solutions, which derives the overwhelming majority of its profits from the Airwave Network. Our analysis is based on the weighing of the short term and long term, direct and indirect, financial benefits that Motorola may derive from the operation of the Airwave Network compared to those from Lot 2. We consider:

⁴¹⁸ [CC3 \(Revised\)](#), paragraph 127. As noted in the Guidance, 'prices and costs are not the sole indicators of the level of competition in a market. Poor quality, lack of innovation, or limited product ranges are prominent among other indicators of weak competition in a market. Evidence about this kind of indicator tends to be qualitative, coming particularly from surveys, questionnaires or discussions with customers, investors, or other market observers. In several past market investigations, such analysis has spotlighted various negative non-price factors as important indicators of weak competition.'

- (a) Direct financial incentives, focusing on the comparison of profits generated, and forecast to be generated, by Motorola from the operation of the Airwave Network, against the profits from its involvement in Lot 2;
- (b) Motorola's wider financial incentives to the extent that these might incentivise it to prolong the Airwave Network or deliver Lot 2 effectively and efficiently; and
- (c) Motorola's business strategy, which can be informative when considered alongside an analysis of direct and wider financial incentives.

Direct financial incentives

- 5.23 Given that the purpose of ESN is to replace the Airwave Network, the profits derived from the latter's operation can be expected to be directly eroded and eventually eliminated by the roll-out of ESN. On that basis, there is a financial trade-off for Motorola deriving from its involvement in both the incumbent technology and its replacement.
- 5.24 This subsection provides a comparison of the revenue and profits that Motorola derives (or will derive) from owning Airwave Solutions, with the revenue and profits which it derives (or will derive) from supplying Lot 2. This comparison provides evidence on the likely profitability of delays to ESN to Motorola's operations and an indication of whether its incentives to deliver Lot 2 effectively and efficiently may be dulled as a result.⁴¹⁹
- 5.25 In conducting this comparison, we note that Airwave Solutions is a material part of Motorola's global business. Based on Motorola's and Airwave Solutions published financial statements, we estimate that Airwave Solutions accounted for 7-8% of Motorola's global revenue and 26%, 25% and 21% of its global pre-tax profits in 2018, 2019 and 2020 respectively.⁴²⁰

Actual and forecast financial performance of Airwave Solutions and Lot 2

- 5.26 We examined Airwave Solutions' revenues and profitability contained in Airwave Solutions' financial statements, and forecasts provided by Motorola. We also looked at Motorola's Lot 2 revenues and profitability contained in management forecasts provided by Motorola.

⁴¹⁹ A detailed profitability analysis in relation to the Airwave Network is set out in section 6.

⁴²⁰ Source: Airwave Solutions Limited annual report and accounts for the years ended 31 December 2018, 2019 and 2020. Exchange rates (£:\$) as the averages for the years ended 31 December 2018, 2019 and 2020. [HMRC exchange rates](#). Motorola's global revenues and pre-tax profits in 2018, 2019 and 2020 amounted to respectively: 2018: \$7.3 billion and \$1.1 billion; 2019: \$7.9 billion and \$1.0 billion; and 2020: \$7.4 billion and \$1.2 billion. Source: Motorola 2020 earnings release and financial tables and Motorola 2018 Annual Report.

5.27 Airwave Solutions' actual and forecast annual revenues and profitability are set out in Table 5.1 below:⁴²¹

(a) For 2019 and 2020, Table 5.1: shows actual performance as reported in Airwave Solutions' annual report and financial statements.⁴²²

(b) For 2021 to 2026, Table 5.1: shows the forecasts provided by Motorola in response to one of our information requests.⁴²³

Table 5.1: Airwave Solutions, financial performance and forecast, 2019 to 2026, £m

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Total 2019-2024 | Total 2019-2026 |
|-------------------|------|------|------|------|------|------|------|------|--------------------|--------------------|
| Revenues | 424 | 434 | [X] | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Operating profit | 198 | 192 | [X] | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit margin | 47% | 44% | [X] | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit before tax | 196 | 191 | [X] | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit margin | 46% | 44% | [X] | [X] | [X] | [X] | [X] | [X] | [X] | [X] |

Sources:

2019-2020: Airwave Solutions Limited statutory accounts

2021: Airwave Solutions Limited preliminary statutory accounts (Motorola response to Q20 of CMA RFI dated 16 December 2021.)

2022-2026: forecasts provided by Motorola (Motorola response to Q20 of CMA RFI dated 16 December 2021.)

Note: the operating loss and loss before tax in 2026 are due to the write-off of all remaining assets at the National Shutdown Date

5.28 Airwave Solutions' total revenues over the six- and eight-year periods are approximately £[X] billion and £[X] billion and total overall profits for each period amount to approximately £[X] billion with margins of [X]% and [X]% respectively (there is little difference between operating profit and profit before tax).

5.29 We obtained two sets of forecasts for Lot 2's revenues and profitability from 2019 to 2024 and 2022 to 2027.⁴²⁴ The first of these, which is set out in Table 5.2: below, is taken from forecasts dated 18 September 2018⁴²⁵ and shows Lot 2 forecasts from 2019 to 2024.

⁴²¹ These figures are those provided by Motorola and do not reflect any adjustments we make in section 6, for example for any changes we make to transfer pricing between Motorola and Airwave Solutions.

⁴²² Airwave Solutions Limited annual report and accounts for the year ended 31 December 2020.

⁴²³ Motorola response to Q20 of CMA RFI dated 16 December 2021.

⁴²⁴ We do not set out actual results contained in published financial statements as Motorola Solutions UK Limited (the operator of ESN) carries out other operations in addition to ESN.

⁴²⁵ Forecast prepared by Motorola, 18 September 2018.

Table 5.2: Lot 2, financial performance and forecast, 2019 to 2024, £m

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Total 2019-2024 |
|-------------------|------|------|------|------|------|------|-----------------|
| Revenues | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Operating profit | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit margin | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit before tax | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Profit margin | [X] | [X] | [X] | [X] | [X] | [X] | [X] |

Source: Motorola forecasts, CMA analysis

5.30 Total revenues for Lot 2 over the six-year period are approximately £[X] million and the total overall profit is £[X] million, with a profit margin of [X]%.⁴²⁶

5.31 The second forecast is dated March 2021 and comes from Motorola financial spreadsheets containing a tab entitled ‘Pricing Scenarios – internal’.⁴²⁶ These forecasts run from 2022 to 2027 and show revenues, costs, gross margin for Kodiak, MS access and other Lot 2 services and are summarised in Table 5.3: below.⁴²⁷

Table 5.3: ESN, financial forecast, 2022 to 2027, £m

| £k | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Total 2022-2027 |
|---------------------|------|------|------|------|------|------|-----------------|
| Revenues | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Gross profit | [X] | [X] | [X] | [X] | [X] | [X] | [X] |
| Gross profit margin | [X] | [X] | [X] | [X] | [X] | [X] | [X] |

Source: Motorola forecasts, CMA analysis

5.32 Based on this data, total revenues for Lot 2 for the six-year period (2022-2027) are £[X] million and the total gross profit (not operating profit) is approximately £[X] million, with a margin of [X]%.⁴²⁷

⁴²⁶ Motorola response to Q8 of CMA RFI dated 13 December 2021.

⁴²⁷ There is another tab in this spreadsheet entitled ‘Summary’ which shows two views of profit: ‘internal’, and ‘customer’. The ‘customer view’ shows a profit margin of [X]% and the ‘internal view’ shows a profit margin of [X]%. The difference is due to increased costs for ‘Kodiak SMP’, where the costs are £[X] million [X]. We present the ‘internal view’ as we would expect this would be the figures on which Motorola would have based its commercial decisions, as opposed to the ‘customer view’.

- 5.33 We note that there is a profit-sharing mechanism in the Lot 2 contract whereby, in the event that the profit margin achieved exceeds [X]%, a proportion of that saving is passed back to the Home Office.⁴²⁸

Provisional assessment

- 5.34 We have compared the financial performance and forecast over the six-year period from 2019 to 2024 for Airwave Solutions with the Lot 2 financial forecast over the same six-year period. Our analysis shows that Airwave Solutions' profits (~£[X] billion) are expected to be more than ten times the size of the Lot 2 profits (~£[X] million).
- 5.35 The more recent forecasts for Lot 2 for the six-year period 2022-2027 show total revenues over the period of £[X] million. Assuming the same operating profit margin percentage of [X]% as the earlier Lot 2 forecast for 2019-2024, this would result in forecast operating profits of £[X] million, which is a quarter of the Airwave Solutions profits forecast for any six-year period. Additionally, we note that a single year of Airwave Solutions' profit over the forecast period 2019-2024 is more than the total ESN profit over the earlier or later six-year forecast period.
- 5.36 We also note that the forecast period may understate the period over which the Airwave Network is likely to run. Although there is much uncertainty, it is possible that the Airwave Network may operate until 2029 and possibly longer, depending on the eventual length of the transition period. As noted by the Home Office, while using a six-year time-period, of 2019-2024, reflects the anticipated expiry of the Lot 2 contract:
- ... should Motorola not deliver on its ESN commitments by 2024, and [X], the financial benefits that it derives from the Airwave Network could extend for a number more years, [X].⁴²⁹
- 5.37 It is our provisional view that the financial forecasts set out above provide a good indication that Motorola's incentives to deliver Lot 2 effectively and efficiently are dulled by the profits it derives from the Airwave Network. This effect was implicitly acknowledged by Motorola itself in a meeting with the Home Office in September 2020. When asked whether Motorola had any 'appetite to accelerate the ESN business case (Airwave shutdown)', Motorola indicated that closing down Airwave sooner was not commercially attractive. It stated: 'commercially, MSI would have very little to play with – the Airwave shutdown generates a [X]% reduction in

⁴²⁸ The profit margin (the anticipated cash margin percentage) is calculated as the cumulative relevant charges less the cumulative relevant costs, including operational costs and capital investments including associated personnel. The contract requires Motorola to calculate and report the cash margin percentage achieved on an annual basis in providing the services to the Home Office. At the end of the term, [X]. Sources: ESMCP Financial Report April 2021 and Annual Financial Report Review dated 5 May 2021.

⁴²⁹ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 107.

revenue, ... and any commercial incentives would have to be so large to compensate for Airwave they would not likely fly for either party'.⁴³⁰

- 5.38 We have also considered whether Motorola's exposure to claims for damages by the Home Office could impact on Motorola's incentives. The Home Office told us that there are two types of liquidated damages that are available to the Home Office under the Lot 2 contract. These are for 'Delay Payments'⁴³¹ and 'Service Credits'⁴³² and both relate to direct and indirect costs incurred as a consequence of default by Motorola.⁴³³ Both the Delay Payments and Service Credits fall within the overall limitation of liability cap, where this cap limits Motorola's total liability under the contract for direct losses to 150% of Motorola's previous year's revenue on the contract (estimated at approximately £[>] million earlier this year; at the time of this provisional decision report, the Home Office estimates it at approximately £[>] million).⁴³⁴
- 5.39 Given the above, it appears that Motorola's maximum exposure under the ESN Lot 2 contract is around £[>] million.⁴³⁵ On that basis, Motorola's maximum liability exposure for failing to deliver Lot 2 would be less than the annual operating profit which Motorola would make in (seven of the eight years of) the forecast period from 2019-2026 from operation of the Airwave Network.
- 5.40 Given the above evidence, we provisionally find that Motorola has a direct financial incentive to prioritise the continued operation of the Airwave Network for as long as possible over the effective and efficient delivery of Lot 2.

Wider financial and strategic incentives

- 5.41 This section considers whether the direct financial incentives that we have identified may be offset by wider financial and strategic incentives. In particular, we examine whether and to what extent any failure to deliver effectively and efficiently its Lot 2 obligations could negatively affect Motorola's reputation and the potential future profits and revenue streams which it can earn within other markets.

Motorola's submissions and internal documents

- 5.42 Motorola told us that:

⁴³⁰ Deloitte's contemporaneous note of 16 September 2020 meeting with Motorola, with Motorola's confirmation that the meeting note was an accurate representation of what had been discussed.

⁴³¹ If Motorola fails to achieve a Key Milestone Date then the Home Office is entitled to Delay Payments.

⁴³² If and when the ESN goes 'live' and Motorola fails to meet certain performance levels, then the Home Office would be entitled to Service Credits. Service Credits are only applicable once the ESN service is live.

⁴³³ Home Office response to Q1 and Q4 of CMA RFI dated 13 October 2021, and additional evidence provided by the Home Office on 16 September 2022.

⁴³⁴ Home Office response to Q1 of CMA RFI dated 13 October 2021.

⁴³⁵ We note that, in the event of wilful default Motorola's maximum liability would be around £[>] million.

- (a) It has a strong strategic incentive to deliver ESN, and that it was 'keen to ensure the handover from the Airwave Network to ESN was smooth, and Motorola believed that its corporate reputation would be enhanced accordingly'.⁴³⁶
- (b) Its global acquisition strategy over the last four to five years has been focused on the broadband ecosystem that pioneering technologies like ESN are delivering.⁴³⁷
- (c) It has been talking to other customers throughout the world on similar types of projects which involve the Kodiak technology.⁴³⁸
- (d) It is therefore in its interest that ESN is viable and working as quickly as possible.⁴³⁹

5.43 Motorola did not provide evidence of the magnitude of these wider strategic incentives. Nor evidence of how they compare to any reduction in profits that Motorola would experience once customers switch from the Airwave Network to ESN.

5.44 Motorola also told us that, in the longer term, there may be upsell opportunities for Motorola in Great Britain, once ESN is operational. During the site visit, Motorola told us about 'all the investment Motorola's been putting into new technologies. [X]. ... All of these things are things that Motorola is invested. And as we have done, we've invested over £[X]bn. That's stuff that we want to sell into our second biggest market, which is the UK'. In response to our request for supporting evidence on this point, Motorola clarified that 'these comments were purely speculative. ... it is Motorola's firm belief that – once fully deployed – ESN will not only be a crucial piece of national infrastructure, but a key driver of innovation and transformation within the mission critical safety environment. This is the key message that [X] [Motorola] sought to convey to the Group when making the statement set out above.'⁴⁴⁰

5.45 At other times, Motorola has told us that it maintains a strong focus on LMR networks, noting that 'customers very much regard LMR networks as current technology and as such are willing to invest significant sums in their development to maintain that technology in the future.'⁴⁴¹ Motorola told us that:

⁴³⁶ [Motorola's response to the CMA's Issues Statement](#), 10 January 2022, paragraph 68.

⁴³⁷ Motorola Hearing with the CMA on 10 February 2022.

⁴³⁸ Motorola Hearing with the CMA on 10 February 2022.

⁴³⁹ Motorola Hearing with the CMA on 10 February 2022.

⁴⁴⁰ Motorola RFI response to CMA RFI dated 13 December 2021, paragraphs 212, 213.

⁴⁴¹ Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, paragraph 2.

- (a) It is currently involved designing and developing LMR systems that are expected to be in operation until 2039 (in [REDACTED]) and 2040 (in [REDACTED] and [REDACTED]).⁴⁴²
- (b) It continues to invest approximately \$[REDACTED] million per annum in LMR R&D.⁴⁴³
- (c) It has invested 'significantly, developing products that facilitate the 'hybrid' operation of both LMR and broadband networks (including the development of dual mode devices) while such transition takes place, or even on a longer basis.' It has also tried to explore discussions of '... a 'hybrid' solution with the Home Office, but these were rebuffed.'⁴⁴⁴

5.46 Additionally, and as we note in section 2 of this report, since the launch of this investigation, Motorola has informed the Home Office of [REDACTED].⁴⁴⁵ In its letter about that, which was sent before the Group published its issues statement or any working papers, Motorola noted that one potential remedy resulting from the CMA's market investigation was divestiture of the Airwave business and, as such, it had [REDACTED]. We are required to take this step in order to directly address the CMA's concerns.'⁴⁴⁶

5.47 Motorola also explained its reasons for this decision at a hearing held on 10 February 2022, stating that [REDACTED].⁴⁴⁷ When we put it to Motorola that we considered it to be counterintuitive for a technology business to choose to exit a 'ground-breaking cutting-edge project'; Motorola told us that we should 'consider the impact if we [Motorola] were forced by a government authority to divest a business that lies at the very heart of what we do and our company's mission and purpose'.⁴⁴⁸

Provisional assessment

5.48 We have identified five factors that may have an impact on the magnitude of any incentives Motorola has to protect its global reputation and generate future profits in other markets:

- (a) The size of global opportunities that could flow from its involvement in ESN, that is primarily in relation to future sale opportunities for its Kodiak application, against the size of future opportunities linked to LMR technology.

⁴⁴² Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, paragraph 2.

⁴⁴³ Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, paragraph 3.

⁴⁴⁴ Motorola's Fifth Supplementary Submission to the CMA's Oral Hearing on 10 February 2022, paragraph 7.

⁴⁴⁵ Letter from Motorola to Home Office dated 16 November 2021.

⁴⁴⁶ Letter from Motorola to Home Office dated 16 November 2021.

⁴⁴⁷ Motorola Hearing with the CMA on 10 February 2022.

⁴⁴⁸ Motorola Hearing with the CMA on 10 February 2022.

- (b) The strength of the competition faced by the Kodiak application globally.
- (c) The importance of reputation as a driver of choice, relative to other factors.
- (d) The extent to which Motorola's performance can be observed by customers.
- (e) The incremental impact of further ESN delays on Motorola's reputation.

5.49 Our provisional analysis of Motorola's wider financial incentives is summarised below. A more detailed description of the relevant evidence and analysis is set out in Appendix F, paragraphs 8 to 27.

5.50 Using Motorola's internal database of opportunities, we estimated future sales opportunities for the Kodiak application and profits that Motorola could expect to derive from these.

5.51 We estimated that the average annual profits from Kodiak opportunities outside Great Britain are likely to be below a maximum of £[X] million a year from 2022 until 2027 – and that only a proportion of these are likely to be impacted by further delays to Lot 2. We are minded to regard the scale of these potential future profits as unlikely to materially change Motorola's incentives to deliver Lot 2 effectively and efficiently given that doing so would also result in the reduction, and ultimately elimination, of profits for Motorola from the continued operation of the Airwave Network (which as set out above amount to approximately £[X] billion from 2019 to 2026, around ten times as the size of its Lot 2 profits).

5.52 We have also considered whether reputational consequences could impact on Motorola's incentives. In this regard, we note that the delivery of ESN would be only one factor in Motorola's overall reputation, alongside delivery of other projects. Based on the evidence and analysis set out at paragraphs 21 to 27 of Appendix F, our provisional assessment is that while reputation likely matters to international customers, the impact of delays in Great Britain on Motorola's international reputation could be limited by the fact that:

- (a) Impacts on Motorola's reputation would not necessarily cause Motorola's international profit opportunities to drop to zero as Motorola would likely win a proportion of contracts for which it competes internationally in any event and reputation is not the only factor driving choice;
- (b) the Kodiak MCPTT application appears to have a strong competitive position and international customers may as a result have limited outside options in any event;
- (c) international customers would likely find it difficult to assess the performance of Motorola in Great Britain and/or disentangle to what extent outcomes are due to Motorola's performance or driven by external factors; and

- (d) any impact of ESN delays on that reputation is likely to have already occurred, reducing the incremental impact of any further delays.

- 5.53 We note that Motorola has submitted that it has a strong incentive to deliver ESN effectively and efficiently in order to build its reputation as it considers there to be significant future opportunities to offer other customers products involving the Kodiak technology. However, as highlighted in paragraph 5.45 above, it has also submitted that it maintains a strong focus on investing in LMR networks and that LMR networks are viewed as current technology by customers. We consider that the fact that LMR technology is expected to continue into the future is likely to weaken the significance of the wider financial incentives from effectively delivering ESN.
- 5.54 We also note that Motorola's financial and strategic incentives to deliver Lot 2 would appear to vary significantly at different stages of the contract (as seen with the DoR). As noted by the Home Office, 'near the end of the Lot 2 contract, Motorola will be aware that it may take additional time for the Home Office to find a replacement provider, and then further time for that replacement provider to deliver the ESN service that the Home Office requires. Thus, in, for example, 2023, should Motorola do nothing on its ESN commitments it would only forgo ESN profits for one year, but could expect to earn multiple additional years of Airwave profit.'⁴⁴⁹
- 5.55 Given the above, our provisional view is that the evidence we have obtained does not indicate that Motorola's potential future profits resulting from global opportunities that could flow from its involvement in ESN and/or reputational effects would be sufficient to change materially the incentives flowing from the profitability of the Airwave Network.

Motorola's business strategy

- 5.56 In this subsection we consider Motorola's business strategy, based on a review of internal documents of Motorola's senior management. An analysis of the strategic intentions can be informative when considered alongside an analysis of financial benefits to see if they are consistent.
- 5.57 A more detailed description of the evidence and analysis is set out in Appendix F, paragraphs 28 to 47. In summary, in our provisional view, the available evidence shows that:
- (a) Motorola's acquisition of Airwave Solutions was mooted in 2014. Motorola's strategic rationale for the acquisition of Airwave Solutions was based on an expectation that the end result would be a 'merger' of TETRA and LTE

⁴⁴⁹ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 108.

(rather than a solution in which the LTE system replaces the TETRA system, with a hard deadline for the switch-off of the Airwave Network, as envisaged by the Home Office).

- (b) Motorola expected ESN to be delayed and in financial terms, it considered the acquisition of Airwave Solutions as an ‘arbitrage play’ against ESN.⁴⁵⁰ Evidence suggests that delays to ESN were the main factor in making the acquisition a sound investment. Motorola told the Home Office during the 2016 negotiations that, if ESN was delivered on time, its acquisition of Airwave Solutions appeared to make little financial sense.⁴⁵¹ As discussed above, the evidence available to us of ‘wider strategic reasons’ does not indicate that these materially change the incentives created by the profitability of Airwave Solutions at the time or currently.
- (c) Motorola’s commitment to ESN both in terms of its scope and timelines, as conceived by the Home Office, was ambivalent at best, based on comments made about the project at various points in time: in 2015, ESN was expected to ‘struggle along and falter (in the voice domain)’⁴⁵²; in Spring 2017, as part of a presentation prepared for a strategy session,⁴⁵³ Motorola stated that its aim for ESN was for it ‘to succeed in some form, as minimum as a data/backup voice network for MCV [Mission Critical Voice] users’; whereas, what it wanted for the Airwave Network was ‘Extensions for as long as possible at lowest discount’ and ‘Significant user groups remain on Airwave for voice eg Police’. Motorola’s internal scenario modelling suggested that a scenario in which ESN is ‘delayed but successful’ was the most financially lucrative option for Motorola.⁴⁵⁴ In January 2020, in an internal email [redacted] (Motorola [redacted]) set out his view that he expected it to become ‘clear that ESN won’t work as envisaged’ and that the ‘whole project could even be moved to some other body ... depending on how bad it looks.’⁴⁵⁵
- (d) Motorola preferred a long-term outcome in which the Airwave Network infrastructure would co-exist alongside a much-reduced ESN, with the former delivering voice and the latter data only. In 2020, Motorola suggested to the Home Office that ‘the proven Airwave Service could continue to provide reliable voice services and the new ESN Service would focus on enhanced

⁴⁵⁰ Motorola internal email dated 18 February 2021.

⁴⁵¹ Motorola email to Home Office dated 27 January 2016.

⁴⁵² Motorola internal email dated 30 June 2015.

⁴⁵³ Motorola internal presentation. Motorola told us that the Home Office was at the time [redacted], and therefore this was not Motorola’s strategy as such. (Motorola Hearing with the CMA on 10 February 2022,. Our review of internal documents indicates that at the time the project had just gone through a major replanning exercise (CR110, concluded in February 2017). Motorola’s internal documents suggest that the Home Office [redacted] (see: Motorola internal email dated 11 May 2018. [redacted]. The strategy meeting (in May 2017) in fact coincided with some of the events detailed in the review by a senior Motorola executive ([redacted] (in June/July 2017), that found that there were significant issues in Motorola’s delivery of its Wave 7000 software.

⁴⁵⁴ Motorola internal presentation.

⁴⁵⁵ Motorola internal email dated 21 January 2021.

services'.⁴⁵⁶ Motorola also wanted Airwave Solutions to obtain a long (10-year) extension to the provision of the Airwave Network. One internal email notes that: 'Our ideal position is to have [X]. In essence, we should have a 10-year deal for MC [Mission Critical] Voice and Priority Data with a price per user per month that includes PTT voice on Airwave and XGBs of data.'⁴⁵⁷ Motorola also carried out analysis in 2020 that showed that an option/scenario in which the Airwave Network continues for the foreseeable future 'provides improved and more stable long-term financials and de-risks the UK public safety modernization effort'.⁴⁵⁸

- 5.58 The above attitudes, objectives and approaches have been in existence since 2015. They have been privately reflected in internal documents on a regular basis by Motorola's management from 2015 to at least late 2020. We are minded to regard such attitudes, objectives and approaches as being not necessarily aligned with Motorola's customer's priorities, nor necessarily consistent with its customer's financial incentives. The evidence we have seen suggests that Motorola anticipated, and on occasions appears to have sought, a long term future for public safety communication in Great Britain that would be very different from what its customer, the Home Office, envisaged when it awarded the contract to Motorola.
- 5.59 Motorola is by far the largest supplier of LMR technology for public safety in the world and analysts have often commented on the risk that LTE technology posed to the future of the company. In this respect, ESN was closely monitored and its success seen as a potential risk to Motorola's long term future, particularly in the years to 2018. The perceived threat and analysts' views of the company shifted significantly when it became apparent in 2018 that the ESN project was being significantly delayed.⁴⁵⁹
- 5.60 The importance of Airwave Solutions to Motorola's investors is underlined in an email exchange between Motorola's [X] ([X], Motorola) and [X] ([X] Motorola) (dated 18 February 2021), in which [X] stated that 'I had subconsciously forgotten how impactful this acquisition was and still is to our company..... too bad there aren't other deals out there like this one!!!! \$[X] of EBitda per annum for a \$1.1 B purchase price!' ... 'I remember hearing in that 1st year was the LMR is dead thesis and you bought another dying LMR business. Would love to have some

⁴⁵⁶ Email from Deloitte to Motorola dated 16 September 2020.

⁴⁵⁷ Motorola internal email dated 21 January 2020.

⁴⁵⁸ Motorola internal presentation dated 16 October 2020.

⁴⁵⁹ See [X] ([X], Motorola Solutions) comments in the Motorola Q4 2018 trading call in which he described the importance of the £1.45 billion extension to Airwave from 2019 to 2022 and stated he was 'thrilled about the Airwave extension'. IWCE, 8 February 2019, [Motorola Solutions announces details of \\$1.45 billion Airwave deal, projections for 2019 growth - Urgent Comms](#)

more LMR dying businesses with [X]% EBITDA's!!' [X] responded saying that 'AW was a great arbitrage play that was executed to near perfection.'⁴⁶⁰

- 5.61 We are accordingly minded to assess the evidence as showing that Motorola's business strategy is consistent with its direct and wider financial and strategic incentives to keep the Airwave Network operational and to continue developing LMR systems for as long as possible given the profitability of both. Those factors are consistent, in our provisional assessment, with a dulling of its incentives to deliver Lot 2 effectively and efficiently.

Provisional conclusions on incentives created by Motorola's dual role

- 5.62 In a well-functioning market, we would expect Motorola's incentives to deliver Lot 2 effectively and efficiently to be greater than its incentives to benefit from the continued operation of the Airwave Network. However, based on the above analysis, our provisional overall view is that Motorola's incentives to deliver Lot 2 effectively and efficiently are likely to be significantly dulled by its ownership of Airwave Solutions. This is because Motorola has compelling financial incentives to prolong the operation of the Airwave Network which are not offset by its wider financial and strategic incentives. This provisional conclusion is supported by the body of evidence suggesting that Motorola's business strategy is consistent with such direct and wider financial and strategic incentives.

Ability

- 5.63 This subsection assesses Motorola's ability to act on the incentives described above, focusing in particular on whether:
- (a) Motorola has the ability to have a material effect on the overall delivery of ESN, through its delivery of Lot 2, and thus on the likelihood that Airwave Solutions' operation of the Airwave Network (and associated profits) continues for longer; and
 - (b) Motorola's ability to act on the incentives described above is constrained by the contractual provisions agreed between the Home Office and Motorola, including the DoR.
- 5.64 A summary of our provisional analysis is set out below. A more detailed description of the evidence and analysis is set out in Appendix F, paragraphs 77 to 81.

⁴⁶⁰ Motorola internal emails dated 18 February 2021.

Motorola's role in Lot 2

- 5.65 Motorola is responsible under Lot 2 for delivering the MCPTT application (Kodiak), which is to be installed on users' mobile devices, to specification; a core network;⁴⁶¹ and service support.⁴⁶² We focus on Motorola's role as a key supplier of two critical components or aspects of ESN: the Kodiak MCPTT application and infrastructure and testing environment.

Kodiak MCPTT application

- 5.66 Motorola is the sole supplier responsible for building, testing and providing a Kodiak MCPTT application which is to be installed on users' mobile devices.
- 5.67 The Kodiak MCPTT application provides push-to-talk voice communications over cellular networks, including 4G. Kodiak has historically been used primarily in the USA and by 'yellow light' services,⁴⁶³ for example highways, energy, and other agencies.⁴⁶⁴ Motorola develops the software in [X], before it is shipped to the UK for testing.
- 5.68 The Kodiak MCPTT application is a core component of ESN because, without it, user organisations will have no ability to use push-to-talk voice communications. Evidence demonstrating the importance of Kodiak is set out in Appendix F at paragraphs 67 to 76.
- 5.69 In other words, Motorola is the only supplier of an essential component of ESN. Its delivery is, as Motorola acknowledged at its hearing with us on 10 February 2022, on the critical path of the ESMCP⁴⁶⁵ and this gives Motorola the ability to delay ESN (unless the DoR is effective to prevent that).⁴⁶⁶

⁴⁶¹ Including (i) server rooms in two data centres; (ii) Operational Support Systems (OSS), fault management systems, event and protective monitoring systems, and service management systems; (iii) Business Support Systems (BSS), to enable billing and services to users such as a product catalogue and order management; (iv) Home Subscriber Server (HSS); (v) other core network hardware and software; and (vi) a Security Operations environment.

⁴⁶² Including: (i) user service desk and support capability; (ii) user device management and SIM card provisioning; and (iii) interface documentation.

⁴⁶³ The difference between 'blue' and 'yellow' light communications is the additional set of features required to provide mission critical capability, for example, prioritisation and pre-emption of calls when circumstances dictate, the emergency assist button and more.

⁴⁶⁴ IAP, ESMCP report, dated February 2019.

⁴⁶⁵ Motorola Hearing with the CMA on 10 February.

⁴⁶⁶ Motorola Hearing with the CMA on 10 February. This was explained further in the 5 May 2022 hearing with Motorola where Motorola stated that it had a theoretical ability to delay but no actual ability to delay. Motorola stated that it had '... substantially completed in our Lot 2 deliver contract, therefore, we do not have an actual ability to delay the programme, given the substantial progress that has been made so far and the state we are in terms of the, the contractual delivery on the programme'. Motorola Hearing with the CMA on 5 May 2022. We are not persuaded by this argument as Lot 2 has not been fully delivered yet.

Deed of Recovery

- 5.70 The acquisition of Airwave Solutions by Motorola shortly after it had been awarded the ESN Lot 2 contract⁴⁶⁷ was recognised by the Home Office as a ‘conflict of interest’. The available evidence suggests that the Home Office recognised that the acquisition had the potential to dull Motorola’s incentives to deliver Lot 2 effectively and efficiently. The DoR was put in place in early 2016 with the aim of mitigating the issue.
- 5.71 The DoR contains a number of provisions setting out financial consequences for Airwave Solutions in the event that delays in the shutdown of the Airwave Network are regarded as solely attributable to Motorola for a period in excess of 90 days (in aggregate).⁴⁶⁸ The DoR, as amended in 2018, provided that the ‘discount rate’ for missing delivery would reduce by specified ‘step-downs’ if specific delivery milestones were met. The first ‘step-down’ would be from [X]% to [X]% and would occur if the milestone relating to the roll-out of Kodiak 9.1 was met.⁴⁶⁹
- 5.72 Motorola told us that the DoR was designed to address or mitigate risk as a result of Motorola’s dual role and specified remediation and financial remedy in the event of delay. Motorola submitted that:
- (a) The DoR ensures, through the discount sums available, that Motorola remains highly incentivised to deliver its part of ESMCP;
 - (b) the Home Office has not claimed under the DoR, which confirms that Motorola has not caused ESN to be delayed; and
 - (c) the incentives to deliver under the DoR have been key to Motorola, as Motorola delivered its components of ESN despite delay issues caused by the Home Office.⁴⁷⁰
- 5.73 We have therefore considered the extent to which the contractual mechanisms that are in place (ie the DoR and other contractual provisions aimed at incentivising suppliers to deliver the programme) are sufficient to counteract the

⁴⁶⁷ Motorola was told by the Home Office that it had won the Lot 2 bid on 13 November 2015. The sale and purchase agreement for Airwave Solutions was signed on 3 December 2015. A few days later the Home Office and Motorola entered into the Lot 2 contract.

⁴⁶⁸ In 2017, the DoR was amended to delete the time period of ‘in excess of ninety (90) days in aggregate’ so that Motorola may be liable for delays of any duration it solely causes.

⁴⁶⁹ The milestone number changed over time as other milestones were agreed, but at the time it was met this was Milestone 23.

⁴⁷⁰ [Motorola’s response to the CMA’s market investigation reference](#), 15 November 2021, paragraphs 5-6. Also, paragraph 18: ‘Put another way, if, but for Motorola’s failure to deliver its Lot 2 elements on time, the ESMCP mobilisation would be complete (and users confirm they are ready to start transitioning to ESN) the Home Office may seek to claim under the Deed of Recovery (which it has not done). Otherwise, Motorola is not liable for ESN programme delays.’

incentives that we have provisionally identified in paragraphs 5.21 to 5.62 above. In that regard, we note the following.

- 5.74 First, the DoR appears to have had some effect on Motorola's efforts to deliver Kodiak software by the agreed milestone in 2019. Internal documents indicate that reducing the DoR rate from [X]% to [X]% was a significant incentive to Motorola to achieve the milestone relating to the roll-out of Kodiak 9.1 (Milestone 23). As early as January 2019, this was referred to in internal documents as the 'DoR stepdown milestone'.⁴⁷¹ In an internal email dated 10 January 2019, [X] (Motorola's [X]) stated that 'From MSI perspective we are financially motivated to achieve [X] and the [X]'.⁴⁷² However, as the deadline approached, this approach changed to a more 'pragmatic' one to avoid any issues 'which could jeopardise the DoR stepdown milestone'.⁴⁷³ The evidence suggests that the incentive to reach the milestone that would see the DoR reduced to [X]% incentivised Motorola to deliver its contractual commitments. There is also evidence, dating from prior to 2019, of the incentivising effect of the DoR in March 2017 when Motorola [X] expressed concerns about a five-week delay in Motorola's failover testing that risked leading to DoR issues.⁴⁷⁴
- 5.75 Second, any effect that the DoR may have had on Motorola's incentives appears to have been reduced by the tapering down of the DoR to the [X]% mark at the end of 2019, combined with the contract payment mechanism put in place in that year.⁴⁷⁵ In comparison with the period leading up to the end of 2019, we have identified very limited reference to the DoR in Motorola's internal documents since the stepdown milestone was achieved.
- 5.76 Third, our review of the DoR indicates that the circumstances in which the Home Office may claim under the DoR are restrictively defined to include situations in which Motorola is regarded as solely responsible for 'mobilisation delays' or 'transition delays' and in the case of termination for 'catastrophic failure'. This limits the circumstances in which the DoR could be invoked by the Home Office.
- 5.77 That said, although the DoR has not been invoked in the Home Office taking legal action against Motorola, a variation of its terms in 2017 was used by the Home Office (as part of wider negotiations) to secure a £[X] million discount. Motorola's agreement to a payment (equivalent to [X]% of its revenue) is, it appears to us, consistent with an implicit acknowledgement that it had caused delays.

⁴⁷¹ Motorola internal email dated 4 February 2019.

⁴⁷² Motorola internal email dated 10 January 2019.

⁴⁷³ Motorola internal email dated 9 October 2019.

⁴⁷⁴ Motorola internal email dated 13 March 2017.

⁴⁷⁵ Linked to Gate 4 delivery, ie delivery of the software to Motorola's UK team for testing, rather than the fully tested and functioning software. In this context, we have seen evidence of Motorola acknowledging poor build quality of its outputs, due to a 'aggressive delivery timelines', Motorola internal presentation, slide 72. See also 2017 Review by senior Motorola executive ([X]) in Appendix F.

5.78 Finally, as explained below there appears to be some evidence that suggests Motorola has been able to materially influence the scope of the review of the remedial advisor (ThoughtWorks) in the context of the DoR. In particular, there is evidence of:

- (a) Motorola having considerable control over the scope of what the remedial advisor reviewed. In an email from Motorola to the remedial advisor at ThoughtWorks dated 7 December 2020, it set out the scope of work to be carried out:

Please find attached our statement of works for you to review and confirm that you're okay with. ...

The process will be limited to the UK as the Motorola [software] development process is out of scope of the ESN Agreement, as such no access would be required to personnel in [X]. If there were any questions, then these would be fielded by our UK Kodiak representatives....⁴⁷⁶

- (b) Although the Home Office tried to reject the proposed scope of work,⁴⁷⁷ Motorola was successful in significantly restricting the parts of its delivery that the remedial advisor was allowed to look at. In the review by ThoughtWorks in April 2021, Kodiak and Operations Support Systems/ Business Support Systems were considered to be out of scope, and as such were considered not relevant for exploration. ThoughtWorks' report noted that this exclusion would not be the case in a normal remedial assessment and limited the recommendations it made (see paragraph 114, Appendix F).

5.79 Taken together, we provisionally conclude that:

- (a) The DoR has incentivised some aspects of Motorola's Lot 2 delivery, for example, significant efforts were made by the Kodiak developers to deliver version 9.1 in October 2019 due to the prospect of the tapering down of the DoR if the deadline was met, and resulted in certain remedial discounts to the Home Office;
- (b) nonetheless, the contract payment mechanism put in place in 2019 and tapering down of the DoR at the end of 2019 have reduced the effectiveness of this contractual provision; and
- (c) the effectiveness of the mechanism through which the remedial adviser can act is limited, as Motorola has been able exert material influence over the

⁴⁷⁶ Email from Motorola to ThoughtWorks dated 7 December 2020.

⁴⁷⁷ In emails from the Home Office to Motorola dated 11 December 2020 and 22 December 2020, the Home Office rejected the proposed scope of work for the Remedial Advisor but remained keen to get the remedial advisor appointed as soon as possible.

scope of the review and obligations do not necessarily flow from the recommendations of the remedial advisor.⁴⁷⁸

Provisional conclusions on Motorola's ability to act on incentives created by its dual role

- 5.80 Having considered the available evidence, our provisional view is that Motorola has the ability to have a material effect on the overall delivery of ESN, through its delivery of Lot 2. That view is supported by Motorola's acknowledgment to us that Kodiak is on the critical path for the ESMCP,⁴⁷⁹ giving it the ability to delay ESN.⁴⁸⁰ A delay to this programme results in a necessity to prolong the operation of the Airwave Network.

Observable outcomes in relation to the delivery of ESN

Motorola's submissions

- 5.81 Motorola submitted that, as part of our assessment of its dual role in the provision of the Airwave Network and the delivery of ESN, we must investigate the delays to the latter and determine whether Motorola is wholly responsible for them. It stated that:

... in order to check whether Motorola's dual role has in fact had an impact on outcomes, the CMA would have to look at whether the alleged shortcomings in relation to Motorola's ESN engagement are:

(i) obviously different from what one would expect from an alternative, conscientious, supplier of the Lot 2 deliverables, taking account of the fact that such an alternative supplier would also work in an environment where (for example) effective systems integration and project management from the prime contractor (the Home Office) are absent, the Home Office continually changes both its requirements and the criteria for success, communication between key suppliers to the programme is restricted, and

⁴⁷⁸ Under the terms of the Lot 2 contract, Motorola is required to implement reasonable recommendations by the remedial advisor that the Home Office approves of. On the face of it, it appears that there is scope for both the Home Office and Motorola to avoid the implementation of the remedial advisor's recommendations. Where the Home Office does not approve some or all of the remedial advisor's recommendations, Motorola would not be required to implement them. ESMCP Terms and Conditions - Lot 2, Version 4.0 [3<].

⁴⁷⁹ Motorola Hearing with the CMA on 10 February.

⁴⁸⁰ Motorola Hearing with the CMA on 10 February. This was explained further in the 5 May 2022 hearing with Motorola where Motorola stated that it had a theoretical ability to delay but no actual ability to delay. Motorola stated that it had '... substantially completed in our Lot 2 deliver contract, therefore, we do not have an actual ability to delay the programme, given the substantial progress that has been made so far and the state we are in terms of the, the contractual delivery on the programme'. Motorola Hearing with the CMA on 5 May 2022. We are not persuaded by this argument as Lot 2 has not been fully delivered yet.

the supplier is prevented from any meaningful engagement with end users; and/or whether they are

(ii) materially different from the shortcomings of other suppliers of ESN, i.e. whether Motorola is behaving in any way worse than the other contributors to the project.

Put differently, the CMA could have examined: (i) if Motorola's Lot 2 deliverables were in delay; and if so; (ii) who was responsible for such delays (e.g. Motorola, the Home Office, EE, KBR, Chelton, Samsung, Deloitte etc.); and (iii) if Motorola is responsible, is it reasonable to conclude that such delay would not have happened absent Motorola's ownership of Airwave.⁴⁸¹

Provisional assessment

- 5.82 We obtained a large number of documents from both Motorola and the Home Office, with particular focus on the negotiations that have taken place between them and possible sources of delays to ESN.
- 5.83 Our review of this evidence provides a nuanced picture of what may have caused delays to ESN. That picture would not enable us to allocate responsibility in the way that Motorola considers necessary. The evidence we have obtained is not sufficiently clear-cut for us to be able to conclude whether, or the extent to which, Motorola is likely to have been the main cause of delays to ESN, or the precise extent to which it, or other parties or factors have been responsible for delays.
- 5.84 However, we do not consider that such an exercise is necessary to identify whether a party has the incentives and ability to distort the competition that would otherwise apply in a well-functioning market, nor as a means of sense-checking that analysis by identifying whether there are observable outcomes that are consistent with such incentives, ability and distortion.
- 5.85 This subsection therefore considers the observable outcomes in relation to the delivery of ESN to assess whether these could be indicators of distortions of competition in the relevant market. We do so not with the aim of determining conclusively whether Motorola or other parties are specifically responsible for delays but as a sense check of concerns flowing from our provisional views of Motorola's incentives and ability. That is, to see whether or not there are observable outcomes that are consistent with such concerns.
- 5.86 In this context, we have considered three questions:

⁴⁸¹ [Motorola Response to Dual Role working paper](#), 11 May 2022, paragraphs 12 and 13.

- (a) What might be expected from Motorola, if it is trying to meet its customer's needs in the manner that would be expected in a well-functioning market (eg by improving quality, introducing better products, innovation and supplying the products customers want)?⁴⁸²
- (b) What are the outcomes⁴⁸³ observed by third-party experts that have reviewed the programme and examined Motorola's delivery of Lot 2?
- (c) Are these outcomes consistent with concerns about Motorola's incentives and ability in relation to delivery of ESN?

What might be expected from Motorola absent the dual role?

- 5.87 In relation to the first question, absent the dual role, Motorola might reasonably be expected to be incentivised to deliver Lot 2 effectively and efficiently given that:
- (a) the revenues Motorola earns from ESN would be more than the revenues that Motorola earns as a subcontractor to Airwave (see Appendix F); and
 - (b) delays to ESN would be likely to have a direct negative financial impact⁴⁸⁴ on Motorola.⁴⁸⁵
- 5.88 Given its status and understanding of the nature of the challenge to deliver Lot 2, Motorola may reasonably be expected to have anticipated the need to do some, if not all, of the following:
- (a) Invest in infrastructure and capabilities which would allow it to deliver Lot 2 effectively and efficiently;
 - (b) recruit and invest in skilled personnel to ensure it had the right people at all levels to so deliver;

⁴⁸² See [CC3 \(Revised\)](#), paragraphs 10, 12. 'Competition is a process of rivalry as firms seek to win customers' business. It creates incentives for firms to meet the existing and future needs of customers as effectively and efficiently as possible – by cutting prices, increasing output, improving quality or variety, or introducing new and better products, often through innovation; supplying the products customers want rewards firms with a greater share of sales.' ... 'Vigorous competition between firms also fosters economic growth, as firms respond to competitive pressure by striving for efficiency and directing their resources to customers' priorities.'

⁴⁸³ [CC3 \(Revised\)](#), paragraph 127. As noted in the Markets Guidance, 'prices and costs are not the sole indicators of the level of competition in a market. Poor quality, lack of innovation, or limited product ranges are prominent among other indicators of weak competition in a market. Evidence about this kind of indicator tends to be qualitative, coming particularly from surveys, questionnaires or discussions with customers, investors, or other market observers. In several past market investigations, such analysis has spotlighted various negative non-price factors as important indicators of weak competition.'

⁴⁸⁴ For example on 1 September 2017, Motorola was projecting a negative gross margin for the ESN contract, and noted that 'each month of delay reduces GM by US\$[X]m', Motorola presentation dated 1 September 2017.

⁴⁸⁵ For example, delayed revenue from future sales opportunities in relation to the Kodiak MCPTT application.

- (c) try to address identified problems as impeding the progress of delivery or creating friction with the customer;
- (d) increase the effort required to make ESN work given:
 - (i) its assessment that inherent issues and/or complexity was likely to have made ESN falter and this was a highly complex and first-of-its-kind programme; and
 - (ii) its knowledge that contracts do not include exhaustive provisions for all relevant elements of project delivery, especially when products or services are complex.

What are the observable outcomes?

5.89 In relation to the observable outcomes, based on the multiple independent reviews that have been carried out (including by the IAP), it seems to us that the root causes of the overall delays to ESN are complex. It is likely to be a reasonable conclusion that the government's own approach to the programme⁴⁸⁶ played a major part in the issues that have been experienced in its delivery since its inception. That is likely to be the case both in the government approach to procurement, and in setting an original deadline for ESN transition that, notwithstanding suppliers' agreements to meet it, might now be seen as having been overly optimistic and as driven by the desire to end its reliance on the Airwave Network.

- (a) However, we note that various third-party experts who have reviewed the ESN programme have pointed out significant issues in the delivery of those parts for which Motorola is responsible, as summarised below. A more detailed summary of such expert reports is set out in Appendix F at paragraphs 89 to 127.⁴⁸⁷
- (b) Both the IBM and ITHC reports (commissioned by Motorola) identified serious issues with regard to **Motorola's ability to deliver software and infrastructure environments**. They identified various serious security and software faults. IBM found that 'delivery quality is not to the expected level' and both ThoughtWorks and IBM identified a series of problems which could be 'linked to a lack of automation practises and tooling'.⁴⁸⁸ This was

⁴⁸⁶ ThoughtWorks Final Report and Recommendations, April 2021.

⁴⁸⁷ In considering the evidence of third parties that have reviewed the programme, we are minded to place weight on the reviews carried out by third party IT experts for three main reasons: (i) each of the reports considered in Appendix F was commissioned by Motorola; (ii) the reviews involved experts experienced in reviewing complex IT projects; and (iii) the reports were not written with customer or public confidence in mind and, as such, are more likely to provide an unbiased description of events.

⁴⁸⁸ ThoughtWorks Final Report and Recommendations, April 2021, page 8. ESMCP Programme IBM Review Summary, 3 May 2021.

consistent with observations made by a senior Motorola executive ([§<]) in 2017 in his review of the delivery of the Wave 7000 application.

- (c) A need for Motorola to **recruit and invest in skilled personnel** to ensure it had the right people at all levels to deliver Lot 2 was also identified. IBM recommended that Motorola ‘inject additional skilled resources to implement the recovery actions’ and ‘identify skill gaps (eg performance test) and secure skilled resources to recover the delivery’. We also note that the IAP thought ‘it is valid to ask whether Motorola were putting all their best people onto fixing programme issues, in contrast with EE’.⁴⁸⁹
- (d) Third-party experts have commented on the **need for, and lack of, a partnership relationship between Motorola and Home Office**. Some of them have also cited the need for the parties to establish more open communications. For example, the IAP’s 2019 recommendation⁴⁹⁰ of a collaborative and (if possible) co-located approach to testing echoed a similar 2016 recommendation by the first remedial advisor (Actica). Both ThoughtWorks and IBM in 2021 also recommended implementing integrated organisation for testing and pointed to the need for joint Home Office/Motorola leadership.
- (e) **The importance of transparency (openness)** as a pre-requisite for the timely delivery of ESN has also been noted by various third-party experts. This was identified in 2016 by Actica and again, in 2021, by ThoughtWorks who noted the need for improvements in this area within two months, otherwise future delays would be inevitable.
- (f) Some third-party experts have commented on **Motorola’s inertia to address issues as they arose**. The IAP (2022) told us that it felt ‘the Home Office team was struggling to escalate resource and capability issues and get resolution, compared with EE.’⁴⁹¹ IBM also considered that Motorola was demonstrating a lack of ownership and passive behaviour, citing ‘process rather than problem management’ and a ‘lack of ownership’ for problems.⁴⁹²

5.90 We also note that there are areas where it is unclear from the view of third-party experts whether Motorola has the ability to address the identified issues. For example, ThoughtWorks noted that ‘the lack of demonstrable software development and delivery good practice by MSI will very likely result in ongoing problems when the platform does eventually go live’. It also noted that: ‘In the case of the Operations Support System (OSS), Business Support System (BSS) we would have expected these services to be the sole responsibility of EE, as it is a

⁴⁸⁹ Comments from the IAP following the Hearing on 24 February 2022.

⁴⁹⁰ IAP, ESMCP report, dated February 2019.

⁴⁹¹ Comments from the IAP following the Hearing on 24 February 2022.

⁴⁹² IBM, ESMCP Review summary, 3 May 2021.

clear divergence from MSI's core Kodiak competencies and has resulted in various issues which could have been avoided had this not been the case'.⁴⁹³

- 5.91 Third-party experts note that prior to 2019, there were multiple causes and sources of delays to ESN. This includes Actica in 2016 and the IAP (and the observations made in Motorola's own review conducted by a senior Motorola executive ([§<]) in 2017 are to similar effect). However, since 2019 third-party experts have highlighted the role of Motorola's performance in contributing to delays. For example, the IAP say that: 'From 2019 onwards, performance issues have been largely associated with deviations from mutually agreed delivery plans. Those issues relate to the infrastructure and app that Motorola have to deliver. Infrastructure issues (ie the environments) are well documented and concern for example, the removal of the B+ reference environment, late delivery of the production mirror environment and the delays in BSS release 2. The app (Kodiak) is well regarded, but during testing (and inevitably) some of the 'blue light features' have been found not to work as intended/hoped for. Given that so much else on the programme has now been delivered, it is understandable that these issues are now in sharp focus.'⁴⁹⁴
- 5.92 We note that Motorola has submitted that findings by the PAC and NAO show that the Home Office is responsible for delays to ESN. For the following reasons, we are not minded to consider that this evidence demonstrates, as claimed by Motorola, that the 'latest National Audit Report (NAO) lays the blame for delays to the development of ESN squarely at the feet of the Home Office',⁴⁹⁵:
- (a) The NAO's role is independently to examine public spending, overseen by the PAC. Its remit is to check whether government departments have used their resources effectively and efficiently. Its focus on that issue means its views do not necessarily provide a rounded assessment of the delivery of Lot 2. It did not review Motorola's delivery or that of other suppliers, or the approach to delivery (as carried out by IT experts) and relied on a much more limited range of evidence relating to the efficiency of the Home Office's spending.
 - (b) There is evidence that the Home Office took a 'no blame approach',⁴⁹⁶ to replanning ESN in 2016 and 2018 and managed its communications with the parties and publicly with this in mind. The nature of the 2018/19 reset meant that the parties agreed to take a 'clean slate' approach.⁴⁹⁷ As such, the Home Office did not speak publicly about the challenges it was facing with

⁴⁹³ ThoughtWorks Final Report and Recommendations, April 2021.

⁴⁹⁴ Comments from the IAP following the Hearing on 24 February 2022.

⁴⁹⁵ [Motorola's response to the CMA's proposal to make a market investigation reference](#), 18 August 2021, paragraph 24.

⁴⁹⁶ ESMCP Programme Board Paper, 10 October 2016.

⁴⁹⁷ Motorola internal document, 17 September 2018.

Motorola's delivery. More generally, the Home Office has been concerned about not undermining customer confidence which is required for the effective transition to ESN.

5.93 We have also considered two additional sources of information on causes of delays to ESN, our observations on which are summarised in the following paragraphs:

- (a) evidence from Simon Ricketts and the IAP; and
- (b) evidence from Motorola's internal documents.

Evidence from Simon Ricketts and the IAP

5.94 We have considered Simon Ricketts' assessment to the Parliamentary Under Secretary to the Home Office in October 2017. That assessment summarised a range of factors causing delays (including the alleged failure of KBR to deliver Lot 1, the slower than anticipated mast deployment by EE and alleged failures in the Home Office's procurement process). They also included Motorola's 'late mobilisation of UK resources and confusion around their undertakings.' Mr Ricketts also said the following:

'Without doubt, the major set of supplier issues concern Motorola. The programme leadership team are spending hours trying to reconcile what ESMCP is expecting, what they believe they were promised in the supplier solution and what is actually being delivered in terms of functionality, practicality and quality. An important part of this is not just the Motorola solution for User Services but the interface specifications and architectures that others have to adhere to in order to integrate with the overall solution, and assumptions on testing. This is having knock on effects in planning, user acceptance, trust and ultimately confidence that Motorola can deliver.'⁴⁹⁸

5.95 In this context, Mr Ricketts told us that 'It is correct (at the time of writing [the report]) that the major set of supplier issues concern Motorola. The efforts being incurred by the [programme] leadership team to reconcile expectations and the comments concerning interface specifications and architectures relate mainly to the fact that changes had been made to Lot 3 content, and the final set of projects that the [Home Office] were to be accountable for. As a result, some of the assumptions concerning Motorola's accountability were no longer valid.'⁴⁹⁹ In other words, Motorola's role was, in Mr Rickett's view, one of a range of relevant factors

⁴⁹⁸ Emergency Services Mobile Communications Programme (ESMCP), Independent Review by Simon Ricketts – Advisor to Permanent Under Secretary (HO).

⁴⁹⁹ Response to CMA putback request dated 22 September 2022.

in the period to 2017, not the factor exclusively responsible for the progress of the ESMCP.

5.96 We asked the IAP to describe any issues that have delayed or otherwise hampered Motorola's delivery of its ESN responsibilities since CAN 500 in 2019, and to distinguish (if possible) between:

- (a) Any such issues solely within Motorola's control; and
- (b) any other issues, their cause and how they have contributed to delays.

5.97 The IAP identified the following three issues that it considered were solely within Motorola's control and others, described in the next paragraph, that were not:

- (a) The construction and delivery of Kodiak software releases: in relation to this, the IAP noted that there was considerable 'heat' between Motorola and the Home Office in relation to changes or addition of features to the software and the extent to which they represent a change of scope. The IAP said there were 40 such issues that caused delays because user representatives considered that ESN transition could not start until they were resolved and there was an ongoing commercial debate between Motorola and the Home Office concerning feasibility and whether the request was in scope. Motorola on the other hand was responsive to fixing obvious 'bugs'.
- (b) Building and operation of hardware and software environments: The IAP said this area has at times been problematic. For example, the accidental removal of a reference environment in September 2020 caused a six-month delay,⁵⁰⁰ and the current challenges to gain security approval for the ESN Beta production environment are causing delays of between nine and twelve months. More generally, the IAP said initiatives to automate software installation would have a material effect in reducing the length of time taken to promote new releases of Kodiak into the reference environment, thereby allowing earlier testing and facilitating more time to get changes into the next planned release.
- (c) Operating the environments to high levels of security and stability: The third issue identified by the IAP was that of Motorola experiencing challenges in meeting security accreditation. The IAP commented that 'whilst this certainly

⁵⁰⁰ Motorola strongly disagreed with this statement and was of the view that the only delay was the [3<] to [3<] weeks of downtime of the environment (Motorola ESN Hearing, 6 May 2022), ie it did not agree that this had had a knock-on effect on the rest of the programme.

needs to be a core competence before transition can be entertained, it is also important that the HO are clearer on precisely what needs to be achieved.’⁵⁰¹

- 5.98 In relation to other sources of delays, the IAP told us that certain other delays had an impact on the overall timescales of ESN and that Motorola was not responsible for these. It also noted that any impairment in the delivery of handsets, control room interfaces or vehicle devices affected the timing and success of the delivery of ESN too, and that these were also not in Motorola’s control.⁵⁰²

Evidence from Motorola’s internal documents

- 5.99 We have obtained and reviewed a number of contemporaneous emails and internal documents in some of which either Motorola admitted to having caused delays or others reported that it had acknowledged having caused delays. For example:
- (a) In February 2017, Motorola agreed to give a [X]% discount in respect of delayed regions, on the understanding that the DoR, which rests on delays caused by Motorola, would not be invoked for a period of six months. [X] (Motorola [X]) stated at the time that Motorola’s own internal reviews ‘do not find that we have delayed ESN by [X] months’.⁵⁰³
 - (b) A draft internal note prepared by Motorola in September 2017 stated that ‘MSUK would [X] months of this delay as a result of some [X]’, referring to an overall [X] months.⁵⁰⁴
- 5.100 Simon Ricketts reported in October 2017 that: ‘There has rightly been much focus on Motorola and their performance, not least their late mobilisation of resource, poor UK leadership and very poor software quality, which has been acknowledged by their leadership team in Chicago.’⁵⁰⁵

⁵⁰¹ Competition and Markets Authority: Mobile Radio Network Services market investigation, Briefing on the Emergency Services Mobile Communications Programme (ESMCP) by the ESMCP Independent Assurance Panel (IAP) pages 22 to 23.

⁵⁰² Competition and Markets Authority: Mobile Radio Network Services market investigation, Briefing on the Emergency Services Mobile Communications Programme (ESMCP) by the ESMCP Independent Assurance Panel (IAP), page 23.

⁵⁰³ Email from Motorola to the Home Office dated 7 February 2017.

⁵⁰⁴ Motorola internal note dated 14 September 2017.

⁵⁰⁵ Emergency Services Mobile Communications Programme (ESMCP), Independent Review by Simon Ricketts – Advisor to Permanent Under Secretary (HO). In a letter to the Home Office, 27 October 2017, Motorola denied having acknowledged that its software performed poorly in testing.

Are the identified outcomes consistent with concerns about Motorola's incentives and ability in relation to delivery of ESN?

- 5.101 Our provisional view is that the above evidence is consistent with our concerns about Motorola's incentives and ability in relation to delivery of ESN. In particular, it appears to us that:
- (a) There is evidence of both poor performance and failure to address issues that are consistent with a company that is not as commercially incentivised, as it could be expected to be in the absence of its dual role, to deliver Lot 2 effectively and efficiently;
 - (b) Motorola's behaviour appears to be consistent with the intent expressed, in a presentation for the [redacted] of Motorola, by [redacted] (Motorola [redacted]) in late 2017 that if the ESN timetable was delayed (as opposed to ESN being cancelled or ESN being rescoped to focus on data transmission) Motorola would 'execute to the letter of the contract'.⁵⁰⁶ The presentation suggests that for the purposes of re-planning ESN timelines, Motorola preferred 'Scenario 3', which involves co-existence of Airwave and ESN to 'Scenario 2', which would have involved delays only. The presentation also demonstrates that, while Motorola refers to the impact of the DoR on its incentives, the only scenario in which '[redacted]' is if '[redacted]'. On the other hand, even if the Home Office sued for breach and termination, in two of the three scenarios, '[redacted]'. Given the context in which this presentation was prepared⁵⁰⁷, we are minded to regard its contents as probative of the distortive effects of the ownership of Airwave Solutions on Motorola's commercial approach to the delivery of Lot 2; and
 - (c) incidences of underperformance and failure to address issues can be split between two time periods: (i) the period up to 2019, and (ii) the period between 2019 and 2021. Whilst third party experts note that prior to 2019, there were multiple causes and sources of delays to ESN, since 2019 there has been greater focus on Motorola's performance as a cause of delays.

Provisional conclusions on observable outcomes

- 5.102 Overall, we provisionally consider that the available evidence in relation to observable outcomes is consistent: (i) with Motorola not being commercially incentivised to deliver Lot 2 effectively and efficiently; and (ii) with its incentives and ability to prolong the operation of the Airwave Network.

⁵⁰⁶ Attachment to Motorola internal email dated 7 December 2017.

⁵⁰⁷ This presentation was prepared at the time when Motorola was preparing to negotiate with the Home Office in late 2017.

Provisional conclusions on Motorola's dual role

- 5.103 Our provisional assessment has focused on analysing Motorola's incentives and ability to deliver Lot 2 effectively and efficiently.
- 5.104 Our assessment has enabled us provisionally to identify Motorola's incentives and ability to prioritise the continued operation of the Airwave Network for as long as possible over the effective and efficient delivery of Lot 2. We have also identified outcomes that are consistent with such incentives and ability.
- 5.105 In particular, our provisional finding is that Motorola's incentives to deliver ESN effectively and efficiently are dulled by the profits it makes from the continued operation of the Airwave Network; that it is able to act on such incentives by virtue of its central role in the delivery of ESN and the limited counter-incentives created by the effects of the DoR and the ESN contractual framework; and that observable outcomes in the delivery of ESN are consistent with such incentives and ability.
- 5.106 We therefore provisionally conclude that Motorola's dual role may strengthen, and has the potential to prolong, the unilateral market power of Motorola described in section 4 of this provisional decision report.

Interworking

- 5.107 In this subsection, we consider interworking. An interworking solution is required to enable the transition from the Airwave Network to ESN and Motorola has a key role in delivering it.
- 5.108 We examine the current market situation to understand the extent to which the Home Office is dependent on Airwave Solutions, the incumbent supplier of communications network services for public safety. We consider specifically whether such dependency creates the potential for Airwave Solutions and Motorola, as its owner, to extract a supernormal profit for the interworking solution and/or delay or hamper its delivery, thereby prolonging the operation of the Airwave Network. The subsections below set out:
- (a) The purpose of interworking and its importance to enabling the transition from the Airwave Network to ESN;
 - (b) a brief background on how the current interworking solution has developed over time and the roles of Motorola and Airwave Solutions in delivering it; and
 - (c) our assessment of the current situation and the extent to which there is potential for Airwave Solutions and Motorola, as its owner, to extract a supernormal profit for an interworking solution and/or delay or hamper its delivery.

5.109 The provisional conclusions we reach in relation to interworking are:

- (a) If Kodiak is to be replaced with an alternative MCPTT application, an alternative interworking solution is required for the transition to ESN.
- (b) The Home Office is dependent on Airwave Solutions and, potentially Motorola, delivering and/or facilitating the development and delivery of an alternative interworking solution. Whilst Airwave Solutions is obligated to develop an alternative interworking solution if required to do so by the Home Office, the terms of this, including the price and timing, are not contractually specified.
- (c) As a result, key parameters are dependent on Airwave Solutions' / Motorola's incentives to deliver or facilitate an alternative interworking solution, which we provisionally consider are dulled by the profits Motorola derives from its position as the owner of Airwave Solutions, the monopoly incumbent for the provision of communications network services for public safety.
- (d) The likely need for an alternative interworking solution strengthens the market power of Airwave Solutions and Motorola as it enables them to delay or hamper and/or make more costly the transition of users from the Airwave Network to ESN.
- (e) Our provisional conclusions in relation to interworking are not dependent on Motorola's role as a key supplier to ESN. In other words, we would have materially the same concerns even if Motorola had no such role in relation to ESN.

The purpose of interworking

5.110 Interworking is needed as part of the transition of users (ie phasing-out of the Airwave Network and the phasing-in of ESN). The interworking solution is intended to facilitate emergency communications between those regions which have migrated onto the new ESN and those which have not yet been migrated onto the new ESN during the transition period, to ensure public safety.⁵⁰⁸

5.111 The Home Office and Motorola agree on the importance of interworking to emergency services users:

- (a) Motorola told us that 'delivery of an interoperability solution will play a fundamental role in enabling users to transition safely with access to both communication platforms simultaneously';⁵⁰⁹ and

⁵⁰⁸ [Motorola/Airwave](#), paragraph 30.

⁵⁰⁹ Motorola's response to the CMA's market investigation reference, 15 November 2021, paragraph 77.

- (b) the Home Office has identified the strategic importance of interworking not just for transition, but in terms of determining whether alternative MCPTT applications can work with ESN.⁵¹⁰

5.112 An interworking solution can be delivered in a number of ways from a technical perspective.⁵¹¹

- (a) Standards-based, network-to-network level interworking: using international standards, once established, to interface between the Airwave Network and ESN;
- (b) Proprietary network-to-network level interworking: developed and owned by Motorola; and
- (c) Non-network interworking: not involving full interworking between the Airwave Network and ESN but instead interconnection of the relevant services, specifically connecting ('patching') the audio between selected group calls on Airwave and ESN within the user organisation.⁵¹²

5.113 The solution chosen by the Home Office in 2016 was a proprietary network-to-network solution to be delivered by Airwave Solutions.⁵¹³ It involves two interfaces, both of which are proprietary to Motorola. One interface is provided at the Airwave Network end and is required to support transition to ESN. The other interface is at the ESN end and is required to support the MCPTT application used within ESN, which is currently Motorola's MCPTT application, Kodiak.

The development of the interworking solution

5.114 Motorola provided a detailed proposal for an interworking solution to the Home Office in early February 2016. This was incorporated into the HoTs (as Schedule 4), with its implementation specified as being the responsibility of Airwave Solutions, contractually as a change to the PFI Agreement⁵¹⁴ and subject to the DoR.⁵¹⁵

⁵¹⁰ [Home Office response to the Issues Statement](#), paragraph 26.

⁵¹¹ Another option is for users and vehicles to have both ESN and Airwave capability during transition. This solution is not discussed further, due to its operational and cost drawbacks.

⁵¹² This does not involve full interworking between the Airwave Network and ESN, but instead interconnects the relevant services, specifically connecting ('patch') the audio between selected group calls on the Airwave Network and ESN within the user organisation (Note on interworking provided to the CMA by an industry expert, May 2022).

⁵¹³ The interworking solution has variously been known as, or referred to as 'Sitelink', 'Wave 7000', 'interoperability' and 'Network Interworking'.

⁵¹⁴ This was under change control notice CCN171.

⁵¹⁵ Motorola internal email dated 1 March 2016.

5.115 The initial interworking solution was to be delivered to work with Motorola's Wave 7000 PTT solution.⁵¹⁶ However, as part of the wider ESN reset in 2018/19, a decision was taken to move from Wave 7000 PTT to Motorola's Kodiak PTT solution. This meant that it was necessary to further update the interworking solution so that it could operate in conjunction with the Kodiak MCPTT application.⁵¹⁷

5.116 This resulting updated interworking solution is considered by Motorola to be 'proprietary' and can only be used with its Kodiak MCPTT application. As explained in a Motorola internal email:

The [interworking] ce Radio Gateway).

- The WRG communicates into Airwave via our [X].

- The WRG itself cannot exist without Kodiak. All management interfaces of the WRG ([X]) are integral to Kodiak and it's [sic] NNI subsystem.

Without Kodiak & the NNI, the WRG would cease to function.⁵¹⁸

(emphasis in bold and underlined as per original.)

The current situation

5.117 In this subsection we consider the extent to which the current market situation where the Home Office is dependent on Airwave Solutions, the incumbent supplier, for the delivery of an interworking solution creates the potential for it and Motorola, as the owner of Airwave Solutions, to extract a supernormal profit for the solution and/or delay or hamper its delivery, thereby prolonging the operation of the Airwave Network. We begin by summarising relevant submissions before presenting our assessment.

Parties' submissions and internal documents

5.118 Motorola told us that an interworking solution had been successfully delivered and that 'the interworking technology, as demonstrated, was already live due to Motorola's efforts', noting that 'by owning Airwave, Motorola directed Airwave's activities towards ensuring that interworking was developed promptly, to facilitate

⁵¹⁶ This was set out in CCN171, signed in March 2016, under which Airwave Solutions is responsible for developing the Wave 7000 Solution which includes various elements, including the need to provide 'Airwave enablement: in order to provide voice interoperability between the Airwave Dimetra system and ESN network, part of the Airwave Network must first be refreshed to Dimetra Generation 3 (Gen 3)'. The deliverables, set out in the Statement of Work (Appendix D) included: equipment; software and services; the software was to be delivered in three phases from 7 April 2017 to 18 August 2017 and there was a detailed implementation plan, including in relation to testing and acceptance. It was amended by subsequent CCNs 177 and 183.

⁵¹⁷ CCN186, dated May 2019, facilitated this update, March 2016 CCN 171 (Wave 7000); 19 May 2017 CCN 177 (Wave 7000); 15 December 2017 CCN 183 (Wave 7000); 14 May 2019 CCN 186 (Kodiak Interoperability).

⁵¹⁸ Motorola internal email dated 16 May 2021.

the switch to ESN.⁵¹⁹ The Home Office also confirmed that Motorola had delivered an interworking solution compatible with the Kodiak MCPTT application.^{520,521}

- 5.119 The Home Office has, however, told us that it is so concerned by Motorola's delivery of the elements of ESN that it is responsible for (see the subsection above on Motorola's dual role), that it intends to procure an alternative MCPTT application, which would require network access to, and a new interworking solution with, the Airwave Network. The Home Office said:

As a result of Motorola's delivery failures, resulting in substantial delay to ESN, the Home Office intends to procure an alternative MCPTT service (Alt-MCPTT). For all users to effectively transition from the Airwave Network to the ESN utilising an Alt-MCPTT, the Alt-MCPTT would require network access to and interworking with the Airwave Network on at least the same or on an as equivalently good basis as the access and interworking Motorola has developed between the Airwave Network and the ESN for the Kodiak MCPTT.⁵²²

- 5.120 As discussed above, the evidence we have obtained shows that the interworking solution put in place by Motorola (and agreed by the Home Office), which is based on Motorola's Kodiak/Wave Radio Gateway, is a proprietary network-to-network solution. This means it cannot be used without Motorola's MCPTT application, Kodiak. As indicated above, the Home Office has expressed an intention to replace Kodiak with an alternative MCPTT solution but it is uncertain whether or when this might happen. To facilitate such a replacement and the transition from the Airwave Network to ESN in such circumstances, it would be necessary to develop an alternative interworking solution.⁵²³

- 5.121 An internal Motorola email sets out a series of activities that would have to take place before a third party MCPTT solution can interwork with the Airwave interface:

To interwork Airwave to a 3rd party MCX [MCPTT] solution would be to do so as per the standards track. To enable this, the following needs to occur:

1) Airwave Enablement. Tetra-ISI (Inter System Interface) would need to be added to Airwave to create the standards-based presentation. Due to

⁵¹⁹ [Motorola's response to Issues Statement](#), paragraph 70.

⁵²⁰ Home Office Hearing with the CMA on 6 May 2022, page 5.

⁵²¹ The Home Office submitted on 16 September 2022 that, while Motorola has delivered the interworking solution, because neither the Prime or the Beta products have been delivered under Lot 2, the Home Office has not been able to verify all the expected functionalities from the interworking solution.

⁵²² [Interworking submission on behalf of the Home Office](#), 28 April 2022, paragraphs 17 and 18.

⁵²³ This would use international standards, once established, to interface between the Airwave Network and ESN. We note that, at present, there is no established standardised interworking function that works between TETRA and LTE, although work is under way under the European Telecommunication Standards Institute's (ETSI) TETRA standards workstream (Note on interworking provided to the CMA by an industry expert, May 2022).

the age and scale of Airwave, this is not as simple as adding ISI. The following prerequisites are required

- a) The [X] Airwave switches running on the 10 year old legacy software need refreshing
- b) Tetra RD team would need to extend the maximum scale of a Dimetra system to enable an ISI subsystem to be added ...
- c) ... the entire nationwide system needs upgrading. (historically an [X] month activity with all the testing and [X])
- d) The system architecture then needs to be migrated to a new zoning plan to enable the addition of ISI. ...

The above Airwave enablement steps are going to take until [X] at the very earliest and would include assumptions that the Tetra RD was prioritized More realistically we would have to be guiding late [X] as an optimistic but perhaps [sic] do-able date.

2) Parallel to Airwave enablement, Motorola or another vendor would need to create the standards based LMR to MCX [MCPTT] interworking function to the required scale ...⁵²⁴

- 5.122 We note that the Home Office has a different view in terms of the cost and time it would take to develop an alternative interworking solution. It has suggested that by sharing details of its existing proprietary interworking technique, Motorola could facilitate alternative MCPTT application suppliers more rapidly and at lower cost than a standards-based approach could be implemented. As evidence of this, the Home Office explained that Motorola acquired and integrated Kodiak in a relatively short period of time and met the functional and performance requirements for transition, and that therefore this could be repeated for another MCPTT application supplier. The Home Office told us that:

Our view is that Motorola have already built that interface and have the documentation and we've paid for it, and it wouldn't take very much time. My view is that to provide any alternative to the current wave radio gateway approach, will take time and will cost money.

We know that the Wave 7000 team developed against it. We know that the Kodiak team have developed against it. Therefore, it must be -- so it's tested, it's documented, and we've paid for it. I don't believe other than tidying up the documentation and providing support to an alternative vendor during their development process -- there will be development to do on the alternative vendor side, definitely. They will need support and

⁵²⁴ Motorola internal email dated 16 May 2021.

they will need to be able to test and they will -- and it will need supporting and operation. And all of those kind of things, but there's definitely cost there but in terms of development I believe it's an interface that exists.⁵²⁵

- 5.123 We note that the cost of delivering an alternative interworking solution would depend on a number of factors, including the technical specifications of the interworking solution needed. The Home Office has told us that it would expect that the costs of delivering an alternative solution could be absorbed by Motorola within the £[<] million,⁵²⁶ which Motorola is being paid for the original interworking solution – given that some of the investment and work already carried out would not need to be re-done.
- 5.124 Motorola told us that (via Airwave Solutions) it is contractually obliged to facilitate an alternative interworking solution between the Airwave Network and any alternative third party MCPTT application that the Home Office chooses in place of Kodiak. It also told us that it is 'committed to providing the required interfaces and updates to its Airwave infrastructure to enable the interworking service to operate with an alternative MCPTT application chosen by the Home Office.'⁵²⁷ Motorola told us that 'as a direct result of the circa £[<]m capital investment upgrade programme that Motorola is undertaking in respect of the Airwave Network, the facilitation of standards based integration with other MCPTT applications is now much more straightforward than was envisaged in 2018 when the contractual commitment was given.'⁵²⁸
- 5.125 The Home Office told us that 'The current contractual requirements on Airwave to provide interworking are limited and do not extend to Motorola; the requirements are set out in the 2018 Airwave Extension Term Sheet, at Schedule 1'.⁵²⁹ It submitted that, notwithstanding the contractual obligation, it is concerned that an effective interworking solution is dependent on Motorola and that 'the need for interworking provides Motorola with a mechanism through which to delay transition, should Motorola so choose.'⁵³⁰

Provisional assessment

- 5.126 We note that there are two distinct scenarios:
- (a) There is currently a functioning interworking solution. Consequently, if Kodiak remains the MCPTT application employed on the ESN interface, Motorola has no apparent ability to delay transition from the Airwave Network to ESN by extracting a supernormal profit for an alternative interworking solution

⁵²⁵ Home Office Hearing with the CMA on 6 May 2022, page 16.

⁵²⁶ Home Office Hearing with the CMA on 6 May 2022, page 28.

⁵²⁷ Motorola's Response to the CMA's Questions on Remedies, 4 March 2022.

⁵²⁸ Motorola's Supplementary Submission to the CMA on Kodiak, 6 April 2022, paragraph 14.

⁵²⁹ [Interworking submission on behalf of the Home Office](#), 28 April 2022, paragraph 21.

⁵³⁰ [Interworking submission on behalf of the Home Office](#), 28 April 2022, paragraph 2.

(because it is not required) or to delay or hamper the delivery of the existing interworking solution (because it has been developed).

- (b) However, to the extent that there is a need to develop an alternative interworking solution, the timely and effective development of an alternative interworking solution, and the terms on which this is provided, is likely to depend on Motorola's incentives. If Airwave Solutions' and/or Motorola's cooperation is required to facilitate the development of an alternative interworking solution, this would provide them with an ability to extract a supernormal profit for an alternative solution and/or delay or hamper its delivery, thereby delaying the transition from the Airwave Network to ESN and prolonging the operation of the Airwave Network.

- 5.127 We firstly assess the extent to which the timely and effective development of an alternative interworking solution, and the terms on which this is provided, are likely to depend on Motorola's incentives. We then consider how Motorola's incentives are likely impacted by its position as owner of Airwave Solutions, the current monopolist incumbent, and its dual role as a key supplier of ESN and owner of Airwave Solutions.
- 5.128 Our first observation is that an interworking solution is critical for enabling the emergency services to progressively move their operations to ESN whilst not losing the ability to communicate with colleagues still using the Airwave Network. The Home Office has told us that an interworking solution is critical to managing the transition period.⁵³¹ A Motorola internal document also notes that '[<]'.⁵³² It follows that any deficiencies or delays in the delivery of an effective interworking solution would have an impact on the success of the transition to ESN and the length of time the Airwave Network is required.
- 5.129 Relatedly, as the current ultimate owner of the Airwave Network, Motorola controls access to the interworking capability at the Airwave interface and, from a technical perspective, it plays a key role in ensuring interworking between the Airwave Network and potential new suppliers of MCPTT applications. The available evidence shows that the development of an interworking solution relies significantly on the active cooperation of Airwave Solutions. For instance:

⁵³¹ Home Office Hearing with the CMA on 6 May 2022.

⁵³² Motorola internal presentation dated 14 June 2018.

- (a) Motorola's internal documents show that it considers its internal sitelink protocol to be [redacted] and [redacted].⁵³³ This suggests that any alternative interworking solution would need Motorola's cooperation to be developed.⁵³⁴
- (b) In an internal email,⁵³⁵ Airwave Solutions estimated that to prepare Airwave Solutions to support standards-based interworking could take several years (and not be completed before at least [redacted]) and take several technical steps. This highlights that the successful and timely delivery of an effective alternative interworking solution is likely to be challenging and will require significant effort on the part of Airwave Solutions.

5.130 For a more detailed analysis of Motorola's ability to delay transition from the Airwave Network to ESN through its approach to delivery of an alternative interworking solution, see Appendix F, paragraphs 130 to 137.

5.131 We have considered Motorola's submission that it is (via Airwave Solutions) contractually obliged to deliver interworking. From the contractual documents we have reviewed, our provisional view is that whilst Airwave Solutions has an obligation to facilitate an alternative interworking solution between the Airwave Network and an alternative third party MCPTT application of the Home Office's choice, the contracts do not specify the terms for this, including the price and timing, and therefore this commitment would be difficult, if not impossible, to enforce. The 2018 Airwave Terms Sheet and UCCN2 specify Motorola's obligations as owner of Airwave Solutions as follows:

[redacted];⁵³⁶

5.132 Based on our review of the 2018 Airwave Term Sheet and UCCN2, our provisional view is that neither the price, nor the timing for the implementation of this obligation are contractually specified.

5.133 Real Wireless has told us that the contractual obligation placed on Airwave Solutions to provide an interworking solution (as reproduced above) was 'inadequately specified to assure Lot 2 replacement'.⁵³⁷ Simply delivering a solution 'to link the Airwave Network' would not ensure that an alternative supplier could develop and support ongoing MCPTT functionality either during transition or beyond. Similarly, a solution could be entirely compliant with the reference standards without providing the required set of features and performance to satisfy

⁵³³ Motorola internal email dated 16 May 2021.

⁵³⁴ Consistent with this, Motorola has previously invoked its intellectual property rights as a reason to refuse access to certain aspects of the ESN project to ThoughtWorks when the latter acted as a remedial advisor. In its report, ThoughtWorks outlined that it did not agree with this justification for refusing access (see in Appendix F).

⁵³⁵ Motorola internal email dated 13 May 2021.

⁵³⁶ Blue Lights Contracts Umbrella CCN2, Annex 3, Part 1, paragraph 6.

⁵³⁷ Note on interworking provided to the CMA by an industry expert, May 2022.

the user needs. Given also that standards on their own are generally insufficient to ensure interworking, a solution ‘to link’ the Airwave Network may not achieve the goals of ensuring the required level of interworking. This assessment further highlights the limitations of the existing contractual obligations and reinforces the fact that the development of an effective alternative interworking solution is likely to be impacted by Motorola’s incentives.

- 5.134 It is our provisional view, based on the evidence set out above, that the Home Office is dependent on Airwave Solutions, and potentially Motorola, delivering and/or facilitating the development and delivery of an alternative interworking solution to facilitate a replacement of Kodiak with an alternative MCPTT solution.
- 5.135 The terms for the provision of such an alternative interworking solution have not yet been agreed and there are no alternatives available to the Home Office. We consider that this is likely to give Airwave Solutions and Motorola significant power to dictate the terms of such a solution, including price, and exercise control over aspects such as its timing. In other words, it creates the potential for them to extract a supernormal profit for the solution and/or delay or hamper its delivery, thereby prolonging the operation of the Airwave Network.
- 5.136 In this respect we note that Motorola has submitted that its successful delivery of the current interworking solution should be taken into account. However, our provisional assessment is that the incentives that Motorola had in 2016 to deliver an interworking solution (in particular, its desire to acquire Airwave Solutions) do not necessarily apply today (see paragraph 129 in Appendix F).
- 5.137 In light of the above dependency, we have considered how Motorola’s incentives to deliver or facilitate an alternative interworking solution in a timely and efficient way, and the terms on which this is provided, might be impacted by the fact that it owns Airwave Solutions, the current monopoly provider of communications network services for public safety.
- 5.138 As set out in paragraph 5.34 above in the context of Motorola’s dual role, our analysis shows that Airwave Solutions’ profits (~£[X] billion) are expected to be more than ten times the size of its Lot 2 profits (~£[X] million). If, as may be the case, Motorola ceases to have any involvement in the delivery of ESN, the financial incentive would be even greater. Accordingly, we provisionally conclude that Motorola has a direct financial incentive to keep the Airwave Network operational for as long as possible given its profitability and that consequently its incentives to deliver its ESN commitments is dulled by the profits it derives from the continued operation of the Airwave Network.
- 5.139 It is our provisional assessment that these profits are also liable to impact Motorola’s approach to the delivery or facilitation of an alternative interworking solution required to facilitate the transition of users from the Airwave Network to

ESN. While Motorola may derive some profit from the development of an alternative solution, any such profit would constitute only a small fraction of the profits Motorola stands to make from the continued operation of the Airwave Network.

5.140 The provisional conclusions we reach in relation to interworking are therefore that:

- (a) If Kodiak is to be replaced with an alternative MCPTT application, an alternative interworking solution is required for the transition to ESN.
- (b) The Home Office is dependent on Airwave Solutions, and potentially Motorola, delivering and/or facilitating the development and delivery of such an alternative solution. Whilst Motorola (via Airwave Solutions) is obligated to develop an alternative interworking solution if required by the Home Office, the terms of this, including the price and timing, are not contractually specified.
- (c) As a result, these key parameters are dependent on Airwave Solutions' / Motorola's incentives to deliver or facilitate an alternative interworking solution, which we provisionally consider are dulled by the profits Motorola derives from its position as the owner of Airwave Solutions, the monopoly incumbent for the provision of communications network services for public safety.
- (d) The likely need for an alternative interworking solution strengthens the market power of Airwave Solutions and Motorola as it enables them to delay or hamper and/or make more costly the transition of users from the Airwave Network to ESN.
- (e) Our provisional conclusions in relation to interworking are not dependent on Motorola's role as a key supplier to ESN. In other words, we would have materially the same concerns even if Motorola had no such role in relation to ESN (since Airwave Solutions / Motorola would still have the incentives and ability to delay, hamper or make more costly the development of an alternative interworking solution in order to prolong the super-profitable monopoly position in relation to the Airwave Network).

Provisional conclusion on interworking

5.141 Accordingly, we provisionally conclude that the position in relation to interworking is liable to strengthen and has the potential to prolong the unilateral market power of Airwave Solutions and Motorola described in section 4 of this provisional decision report by enabling them to delay or hamper and/or make more costly the transition of users from the Airwave Network to ESN.

6. OUTCOMES: PROFITABILITY ANALYSIS

Introduction

- 6.1 Evaluating outcomes of the competitive process in their different forms in a market – eg prices and profitability, levels of innovation, product range and quality – helps the CMA determine whether there are competition issues and, if so, the extent to which customers may be harmed by them. Prices and profits are among the more observable and measurable outcomes and an analysis of these may be useful in quantifying the extent and nature of competition and can be helpful in measuring potential customer detriment.
- 6.2 The purpose of conducting profitability analysis is to understand whether the levels of profitability (and therefore prices) achieved are consistent with the levels we might expect in a competitive market. If supernormal profits (ie profits above the levels that we would expect in a competitive market) have been sustained over a sufficiently long period of time, this could indicate limitations in competition.
- 6.3 The extent to which the results of profitability analysis indicate limitations in the competitive process may depend on both the size of the gap between the level of profitability and the cost of capital, and the length of the period over which the gap persists. The appropriate time period over which to examine the persistence of the gap between profitability and the cost of capital may therefore vary according to the specific market.

Approach to profitability analysis

Overarching conceptual approach

- 6.4 The analysis of profitability as a means of understanding competitive conditions in a market is based on the premise that in a competitive market firms would generally earn no more than a 'normal' rate of profit. Our Guidance⁵³⁸ defines a 'normal' level of profit as:

...the minimum level of profits required to keep the factors of production in their current use in the long run, ie the rate of return on capital employed for a particular business activity would be equal to the opportunity cost of capital for that activity.
- 6.5 The opportunity cost of capital is the weighted average cost of capital (WACC), which investors expect for providing capital to firms undertaking the activities

⁵³⁸ CC3 (Revised), paragraph 116.

under investigation. This can be thought of as a market-based return on investment, to compensate investors for providing money to firms in the market.

- 6.6 The rationale for benchmarking return on capital with the opportunity cost of capital is that, in a competitive market, if firms persistently earned in excess of the return required to compensate investors for the risks taken, we would expect entry and/or expansion. This entry/expansion would serve to compete away profits in excess of the cost of capital up until the point where firms cover their total costs, including a market-based cost of capital and no more. Where firms persistently earn in excess of a normal return, this therefore signals that there may be limitations in the competitive process.
- 6.7 Our Guidance, therefore, refers to the rate of return on capital as a means of measuring profitability. Return on capital can be based on cash flows (internal rate of return (IRR)) or profits (return on capital employed (ROCE)). In this case, we have adopted the discounted cashflow approach over a given segment of an activity's lifespan,⁵³⁹ given its strong theoretical basis, including that it reflects the economic principle of the time value of money.⁵⁴⁰
- 6.8 We have calculated supernormal profits, ie the profits left over, after the providers of capital have been paid a market-based return on their investment.⁵⁴¹ This is calculated as the net present value (NPV) of profits when the IRR is set equal to the WACC. We calculated supernormal profits because their extent (and, consequently, any detriment to customers) is not immediately clear from a percentage gap between IRR and WACC.
- 6.9 We also compare the IRR, where possible to calculate, to the relevant WACC.⁵⁴² Our provisional assessment of the relevant WACC for Airwave Solutions is set out in Appendix G.

Practical application of approach

- 6.10 We determine the TIRR and/or NPV by using cash inflows and outflows relating to operating activities, and the value of assets at the beginning and end of the relevant period(s). We then compare the IRR to the relevant WACC. The general principle is that all cash inflows and outflows and assets relating to the operation of

⁵³⁹ A discounted cashflow approach over a given segment of an activity's lifespan is also called a truncated IRR, or TIRR.

⁵⁴⁰ Due to data limitations, the CMA often uses ROCE analysis for its assessment of profitability. Provided that analysis is undertaken carefully, with various adjustments made, it is equivalent to an IRR assessment and is also, therefore, conceptually robust. See (1987), Edwards, J, Kay, JA, Mayer, CP (1987), The Economic Analysis of Accounting Profitability for a fuller discussion of the conditions under which the ROCE and IRR approaches are equivalent.

⁵⁴¹ Supernormal profits are also called economic profits.

⁵⁴² Calculation of an IRR requires an initial cash outflow. In circumstances where there is no initial cash outflow, calculation of an IRR is not possible.

the business to supply the activities under investigation should be included. In practice this means that financing costs, including any cash held for financing purposes, should be excluded.

- 6.11 When estimating IRR and/or NPV, our approach is to start with accounting figures from the profit and loss account and balance sheet of the relevant activities, and then make adjustments to arrive at an economically meaningful measure of profitability. Deriving an economically meaningful measure of profitability from accounting data, in practice, usually requires adjustments to the following areas:
- (a) Identification and valuation of the capital employed by investors at the beginning and end of the relevant period(s): an assessment of economic profitability requires an estimate of the value of the capital employed by investors at the beginning and end of the relevant period(s) in order to estimate a cash outflow at the beginning of the relevant period(s) and a cash inflow at the end of the relevant period(s). In order to estimate the value of capital employed by investors, we look to ensure that all assets owned by the business have been identified and valued according to the current opportunity cost of owning the asset or the value to the business (VTB). This ordinarily requires an adjustment to one or more balance sheet values, as explained below.
 - (b) Common cost and asset allocations: where a firm undertakes other business activities, in addition to those which we are reviewing in the market investigation, and/or where there are material intercompany transactions, all costs should be recorded on an objectively justifiable basis that reflects the arm's-length value of such costs. We note that Airwave Solutions is a subsidiary of a significantly larger group, the ultimate parent company of which is Motorola Solutions, Inc., and that there are significant intercompany/intragroup transactions. As set out in paragraphs 6.89 to 6.125 below, we have reviewed a range of intragroup transactions – both operating and capital costs – and made adjustments where we have provisionally found that these have not been recorded on an arm's-length basis. We have also excluded some activities which take place within Airwave Solutions but which are not core to the Airwave Network (see paragraphs 6.14 to 6.35).
- 6.12 We set out in Appendix G further detail on the various adjustments that we have made to arrive at an economically meaningful measure of profitability based on Airwave Solutions' accounting profits.
- 6.13 In response to our Profitability Methodology Working Paper,⁵⁴³ Motorola stated⁵⁴⁴ that it generally agreed with the use of IRR measures to establish profitability

⁵⁴³ [Profitability Methodology Working Paper \(publishing.service.gov.uk\)](#)

⁵⁴⁴ [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraph 22.

instead of the ROCE approach used by the CMA in its consultation on the proposal to make a market investigation reference relating to the Airwave Network. However, it rejected the use of the truncated analysis, which it said was not justified in this case for the reasons set out in the section on time period under consideration (see paragraphs 6.36 to 6.54).

Scope of profitability analysis

Business activities

6.14 LMR network services for public safety are defined in our terms of reference⁵⁴⁵ as follows:

services provided through a secure private communications network, based on land mobile radio technology, that is used by personnel involved in public safety (namely the police, emergency and fire services, and those who need to communicate with such services) when in the field.

6.15 And ancillary services are defined in our terms of reference as follows:

services that are interlinked with the provision of LMR network services for public safety and for which customers have limited alternative suppliers including for example services such as those provided at the testing facilities for radio terminals used by LMR network public safety users.

6.16 The only supplier of these services in Great Britain is Airwave Solutions, and thus our profitability assessment focused on this company only. We initially assumed that all its revenue streams were linked to the provision of LMR services for public safety (including all ancillary services).

6.17 We needed to make sure that the revenues and costs contained in the starting operating profit figure only related to the provision of Airwave Network services, relevant ancillary services and nothing else. Airwave Solutions' statutory financial statements include the results for all services supplied under the Airwave contracts (the PFI Agreement and Police Service Contracts, the Ambulance Contract, and the Firelink Project Agreement), as well as from contracts with the Sharer organisations.

6.18 These financial statements also include the results for the other services to emergency services and other organisations/firms which are provided outside the Airwave contracts, namely certain data solutions provided under separate business lines (Pronto and CCCRS) and consultancy services leveraging Airwave

⁵⁴⁵ [Terms of Reference](#), 25 October 2021.

Solutions' expertise in rolling out and running TETRA networks for emergency communications.

6.19 In considering which activities should be excluded, our focus has been on Pronto, CCCRS, Ambulance Bundle 2 and interworking:

- (a) Pronto is a suite of applications and CCCRS is a control room solution;
- (b) Ambulance Bundle 2 is the supply of control room services and devices to ambulance services (procured as a separate lot from the network service) and currently outsourced to Capita;⁵⁴⁶
- (c) interworking is the solution for connecting users of the Airwave Network and ESN during the transition period from the Airwave Network to ESN, commissioned by the Home Office as part of the agreement reflected in the Heads of Terms agreed on 17 February 2016.⁵⁴⁷

6.20 The costs and revenues for these four activities are also included in Airwave Solutions' statutory financial statements.

6.21 The following paragraphs set out Motorola's and the Home Office's submissions and our provisional assessment of which business activities should be included and which business activities should be excluded from our profitability analysis.

Parties' submissions

6.22 Motorola and the Home Office each made submissions, on both whether certain activities that took place within Airwave Solutions should be included in our profitability analysis and, to the extent that they were excluded, the basis on which common costs should be allocated within service lines.

6.23 Motorola told us that we were correct to focus on Airwave Solutions' business activity, and that some parts of Airwave Solutions' activities went beyond the provision of LMR network services; specifically, the two software business lines (Pronto and CCCRS) were not integral to the provision of LMR network services; they were run separately by a different leadership team and their costs and revenues were also tracked separately.⁵⁴⁸ Motorola told us that it had already made adjustments to exclude these costs and revenues from the internal rate of return (IRR) model submitted to us in August 2021 (the August Model).

⁵⁴⁶ See Appendix C, Key Airwave Solutions contracts.

⁵⁴⁷ See Section 5 and Appendix F, and Appendix C, Key Airwave Solutions contracts.

⁵⁴⁸ [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraph 11.

Pronto is a data solution offered to police services, while CCCRS is a command central control room solution offered to police services. See [Airwave Solutions Pronto brochure](#) and Motorola's response to the Financial RFI dated 16 February 2022.

- 6.24 The Home Office told us that it agreed with the exclusion of the two software business lines if it could be done in a robust manner – that is, both revenues and equivalent costs (including a share of common costs) should be removed.
- 6.25 We asked Motorola to explain whether the business activities of Ambulance Bundle 2 and interworking were related to the provision of the Airwave Network.
- (a) For Ambulance Bundle 2, Motorola told us⁵⁴⁹ that the contract covered the provision of control room services and terminals (including terminal support) and was outsourced.⁵⁵⁰ Motorola told us that the line of revenue was not related to the Airwave Network and could be provided by various suppliers as evident from the DoH's decision to award elements of the Bundle 2 contract to Frequentis and Terrafix.
 - (b) For interworking, Motorola told us that interworking was the provision of a bridge service which allowed the Airwave and ESN networks to be linked. Motorola stated⁵⁵¹ that interworking 'arguably should not be excluded as being able to support the transition to ESN is part of the core Airwave service going forward' and noted that the provision of interworking was [X] in any case.
- 6.26 The Home Office told us⁵⁵² that the Ambulance Bundle 2 services were provided together with the core Airwave Network services, and that it did not consider that outsourcing a contract was a sufficient justification for excluding it from the scope of the analysis: it stated that it had a contract with Motorola to deliver these services and it was Motorola's choice whether to deliver these services with its own resources or to outsource them.
- 6.27 In respect of interworking, the Home Office told us⁵⁵³ that there was no conceptual basis to exclude interworking activities. It stated that the ownership of Airwave Solutions provided Motorola with market power in terms of the provision of interworking services – nobody else had control and direct access to the Airwave Network infrastructure, and therefore nobody else could provide the interworking service. It stated that Motorola's ownership of Airwave Solutions was, therefore, likely to have enabled it to charge a disproportionately high price for the

⁵⁴⁹ [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraph 11.

⁵⁵⁰ The provision of these services is outsourced to Capita, which itself (alongside other providers) offers such services directly to Airwave Solutions customers. Motorola told us that the DoH had split the Ambulance Bundle 2 requirements and awarded contracts to Frequentis (control room services) in 2016, Terrafix (mobile data services) in 2019, and Exponential E (service partner) in 2021, and was looking to tender for LTE devices. The Ambulance Bundle 2 contract with Airwave Solutions is set to roll off in 2022-2023 once the new providers go live.

⁵⁵¹ [Motorola's Response to the CMA's Working Papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 42.

⁵⁵² [Home Office submission and response to working papers](#), 24 May 2022, paragraph 34.

⁵⁵³ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 36.

interworking service compared to the costs needed to deliver the service.

Therefore, to fully understand the extent to which Motorola has market power over the Home Office, it was relevant to include revenues and costs associated with interworking in the profitability analysis. It also stated that the provisions to provide interworking (ie originally the SiteLink provisions) have been added to the core services of the PFI Agreement (see Appendix C).

- 6.28 In our profitability working paper⁵⁵⁴ we had excluded revenues and costs relating to Ambulance Bundle 2 and interworking, as well as Pronto and CCCRS. Motorola had been able to identify revenues and costs of sales relating to these two activities (Ambulance Bundle 2 and interworking), but not administrative expenses. We estimated an amount by allocating administrative expenses between Airwave Solutions' various business lines on the basis of revenues. Therefore, we calculated the proportions of Ambulance Bundle 2 and interworking turnover to total turnover, applied these proportions to the total administrative expense, and removed those estimates of administrative expense.
- 6.29 Motorola told us⁵⁵⁵ that it took issue with our calculation of administrative costs associated with Ambulance Bundle 2 and interworking. It told us that Ambulance Bundle 2 was mostly outsourced and therefore administrative costs associated with the provision of this service were minimal; similarly, interworking was a service with minimal administrative costs. Therefore, taking out administrative costs based on an attribution of revenue significantly overstated the cost of these two services. Motorola did not, however, suggest an alternative basis on which to allocate administrative costs, or provide an estimate.
- 6.30 The Home Office told us⁵⁵⁶ that the Ambulance Bundle 2 services were provided together with the core Airwave Network services, there was a significant proportion of common costs between the Ambulance Bundle 2 contract and other services offered by Airwave Solutions to the Home Office, and identifying all the relevant costs could be challenging. As such, it considered that it would be more robust to include both revenues and costs associated with the Ambulance Bundle 2.
- 6.31 The Home Office also told us⁵⁵⁷ that attempting to exclude interworking may result in errors. While the Home Office understood that the CMA had made some adjustments for the costs of delivering the interworking service, it was possible that not all costs relating to interworking arrangements had been removed. Interworking costs were part of the core operating costs of the Airwave Network and shared common overheads; for example, there was no separate division

⁵⁵⁴ [Profitability modelling and results \(publishing.service.gov.uk\)](https://publishing.service.gov.uk), 6 May 2022.

⁵⁵⁵ [Motorola's Response to the CMA's Working Papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 43.

⁵⁵⁶ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 34.

⁵⁵⁷ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 37.

delivering the interworking services, and it was delivered by the same people who delivered the remaining services to the Home Office. Identifying a fair allocation of staff costs between interworking services and other Airwave Network services, might not be straightforward, and if only some costs were removed, but all revenues, this would understate Motorola's true profitability of operating the Airwave Network. For these reasons, the Home Office requested that the CMA included interworking in the analysis.

Provisional assessment

- 6.32 We noted broad agreement with our proposal to exclude Pronto and CCRS from our profitability analysis given both the contestable nature of these services and the existence of separate cost recording for them. Therefore, we have excluded these services for the purposes of our provisional assessment.
- 6.33 We considered whether the Ambulance Bundle 2 and interworking activities should be included in our analysis.
- (a) For Ambulance Bundle 2, we are not minded to treat the outsourcing of a contract as sufficient reason to exclude it, and consider that the common costs showed that it was not a separate activity. Therefore, we have included it in our provisional analysis. We also noted the potential complications of allocating common overhead costs between these services and those of the core network.
 - (b) Interworking is integral to the transition away from the Airwave Network at the end of its useful life and could only be provided by Airwave Solutions to the Home Office at the point at which this addition was agreed. This is reflected in the fact that it has been added to the core services of the PFI Agreement. We have therefore also included it in our provisional analysis.
- 6.34 We therefore did not make any adjustment for costs for these revenue streams (ie Ambulance Bundle 2 and interworking), so the issue we noted of making a robust or accurate estimate for the concomitant amount of administrative expenses to exclude is no longer relevant. We note that the inclusion of these services does not have a material impact on measured profitability.
- 6.35 We call the resulting scope of business activities which we analyse for the purposes of profitability analysis: Airwave Network Services.

Time period under consideration

- 6.36 We aim to examine profitability over a time period that is sufficiently long to provide a representative picture of profitability and that is not unduly distorted by unusual macroeconomic conditions or one-off events. Our Guidance recognises

that the appropriate time period may vary depending on the specific market under consideration.⁵⁵⁸

- 6.37 The PFI Agreement was executed on 29 February 2000 (see Appendix B) and the Airwave Network switch-off date is now set at 31 December 2026, albeit there is the possibility that it will be extended beyond that date. This gives, in theory, a 26-year time period over which one could analyse the profitability of the Airwave Network.
- 6.38 In our profitability working paper, we set out our emerging view that the most relevant and informative time period to consider for the purposes of our analysis was the ‘extension’ period, ie the period from 2020 to 2026, although we also analysed the profitability of Airwave over the 2001 to 2019 period (separately). We explained that this was because:
- (a) The purpose of profitability analysis is to understand outcomes in the market, which may give insight into competitive conditions.
 - (b) We are primarily interested in recent and current competitive conditions in the market, rather than those which may have been present more than twenty years ago.
 - (c) The terms governing the original PFI period, ie the period to 2019 were negotiated and agreed at the start of that period, with further, separate negotiations taking place following Motorola’s acquisition of Airwave Solutions in 2016 and determining the financial performance of the business from 2020 onwards.
 - (d) A backward-looking profitability analysis for the original 2001-2019 time period would not necessarily provide a good indicator of potential market power and potential to extract supernormal profits at the time that the extension was agreed.
 - (e) Similarly, assessing the profitability of the business over the whole 2001 to 2026 period would mix the picture from across the PFI and post-PFI periods and would risk masking the degree of profitability / market power enjoyed post-extension.⁵⁵⁹
- 6.39 We set out in detail the representations made by Motorola and the Home Office relating to the appropriate time period to use in this case in the following paragraphs. In summary, Motorola submitted that the appropriate time period to analyse the profitability of the Airwave Network ran from 2001 to 2026, because extensions had been integral to the original PFI Agreement, Motorola never had

⁵⁵⁸ CC3 (Revised), paragraph 121.

⁵⁵⁹ [Profitability modelling and results](#), paragraphs 19 to 21.

the ability to ‘walk away’ in 2019, and the shutdown of the Airwave Network was now fixed at 2026. The Home Office, on the other hand, considered that the profitability analysis should focus on the extension period (ie from 2020), as it reflected the outcome of negotiations that had taken place since Motorola had completed the acquisition of Airwave Solutions.

Motorola’s submissions on time period

- 6.40 Motorola submitted⁵⁶⁰ that it was artificial and not appropriate to split the original PFI Agreement period (2001-2019) from the extension period to look at profitability, ie the profitability of the Airwave Network should be assessed over the whole of the 2001 to 2026 period. In particular, Motorola submitted that:
- (a) The contract was never structured as an initial period of 2001-2019, at which point there was a full re-negotiation for the ‘extension’ period; any notional ‘extension period’ (a concept Motorola disagreed with) must have been set in 2016 when Motorola acquired Airwave Solutions;
 - (b) the terms on which the Home Office would require continued provision of service up to a National Shutdown Date were fully agreed in 2016 when Motorola acquired Airwave Solutions; at this point the Home Office did not specify an end date and so Motorola took on the entire risk associated with the uncertain duration over which Motorola would be required to provide the Airwave Network, including making all requisite investments to ensure that the Airwave Network remained fit for purpose;
 - (c) in economic or competition terms 2019 had no economic or competition relevance;
 - (d) Motorola never had the ability to walk away in 2019;
 - (e) Motorola stated that ‘well-advised parties had agreed contractual terms with reference to an agreed fair internal rate of return (IRR) *for the life of Airwave*, [Motorola emphasis] whatever that would be;⁵⁶¹
 - (f) Airwave Solutions was a project company whose economic life was tied to the period for which the Airwave Network was required; the investments

⁵⁶⁰ [Motorola’s response to the profitability methodology working paper](#), 10 January 2022, paragraphs 12-18.

⁵⁶¹ A financial model was created by BT which set out the anticipated cashflows in relation to the Airwave Network at the inception of the PFI agreement (the PFI Model). Motorola told us that a copy of the model was originally placed in escrow with a third party and transferred to another third party in late 2000 / early 2001. Although this third party was unable to locate the original model, Motorola provided us with a copy of the model which had been sent to Airwave Solutions in 2009 from the National Policing Improvement Agency (NPIA). Motorola told us it had no reason to believe that the model provided to the CMA was in any way different from the copy placed in escrow.

made by Airwave Solutions and the costs incurred over this period must be set against the revenues earned; and

- (g) regarding any potential extension beyond 2026, [redacted]⁵⁶² [redacted]; for this reason, Motorola told us that it considered it unnecessary to assess any longer duration [redacted], subject to any further changes requested by the Home Office. Motorola also stated that further changes created additional risks for Motorola that would need to be taken into account.

6.41 In its response to our working paper on profitability,⁵⁶³ it further submitted that:

- (a) There were never any negotiations over an extension period and the notion of an extension period was entirely the CMA's construct;
- (b) the Home Office negotiated and obtained in 2016 simply the unilateral right to require the provision of Airwave Network services beyond 2019 if this should be required because of the replacement solution – ESN – being delayed;
- (c) there was never, in 2016, any negotiation of or agreement to any specific extension period beyond 2019;
- (d) the Home Office did not, at any time, ask Airwave Solutions or Motorola, or any other prospective supplier, to quote for the provision of LMR services from 2020 to 2026;
- (e) the Home Office essentially obtained insurance against potential delays in the deployment of ESN and that there was no commitment to use the Airwave Network beyond a National Shutdown Target Date that was initially set to be the end of 2019; however the fact that we know now that the Airwave Network will be required to provide mission-critical communication services for the emergency services until 2026 must not be misconstrued as there having been negotiations for an extension period of 2020 to 2026 at any point in time;
- (f) as a matter of contractual fact there was never intended to be, nor was there, certainty as to the National Shutdown Date until the Home Office [redacted]. The National Shutdown Date was, at that moment, set at 31 December 2026 and the contractual obligation for Airwave Solutions to target switch-off of the Airwave Network nationally on that date crystallised. Prior to that point no such contractual obligation or certainty existed; and

⁵⁶² [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraph 21.

⁵⁶³ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraphs 10-18.

(g) the closest that the parties came to contracting a more certain outcome was when, in April 2018, the Home Office asked for a 10-year term with break points, in response to which Airwave offered discounts on its charges.

6.42 Motorola also stated⁵⁶⁴ that it was an ‘inconvenient truth ... that Airwave has made lower returns than anticipated, overall, and it is extraordinary poor competition policy to create artificial temporal constructs to try to show excess profits of a sub-period in which Airwave Solutions could only provide the services because it had made substantial investments into its network’; and that the ‘CMA’s evident desire to find excess profits cannot be allowed to be a substitute for good decision-making.’

6.43 Finally, Motorola noted that the CMA initially stated that it would consider profitability over the period from 2000 to 2026 as a whole and that it had not explained its reasonings for not publishing its findings on ‘lifetime IRR’.⁵⁶⁵

Home Office submissions on time period

6.44 The Home Office told us⁵⁶⁶ that it considered it key to assess the profitability of the extension period (from 2020) to understand the extent to which Motorola had had a position of unilateral market power since its acquisition of Airwave Solutions in 2016. This was because the contract terms of this period reflected the outcome of negotiations since Motorola completed the acquisition of Airwave Solutions and therefore inform as to whether, from this date, it held a position of unilateral market power: in other words, if Airwave Solutions were earning excess profits over this extension period, it could reflect its market power in contract negotiations for the extension.

Provisional assessment

6.45 We have considered the submissions by Motorola and the Home Office. In line with our assessment at working paper stage, our provisional conclusion is that it is appropriate to split the lifetime of the Airwave Network between an original ‘PFI period’ and an extension period when conducting profitability analysis for competition purposes for the reasons set out in paragraph 6.38 and discussed in more detail below. In particular, we note the following points in response to Motorola’s submissions:

⁵⁶⁴ [Motorola’s response to the CMA’s working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 15.

⁵⁶⁵ [Motorola’s response to the CMA’s working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraphs 7 and 8.

⁵⁶⁶ [Home Office’s response submission to the CMA’s profitability methodology working paper](#), 11 January 2022, paragraphs 2 and 11.

- (a) Whenever and however the terms were agreed, the lifetime of the Airwave Network has been extended beyond that originally envisaged when the PFI Agreement was signed. Absent such later agreement, either side could, indeed, contractually have 'walked away' in 2019;
- (b) There are good reasons provisionally to conclude that conditions of competition are likely to have been different when the extension was negotiated than when the original PFI Agreement was negotiated due to, inter alia, the incumbency of the Airwave Network and the limited expected further time requirement for use of the Network given the development of ESN;
- (c) The uncertainty over how long the Airwave Network will be required is not relevant to the question of whether there has been an extension; and
- (d) The risks and costs of the uncertainty over the length of the extension are reflected in our analysis in both the WACC used and the operating and capital costs of Airwave Solutions. That is to say, we consider that the full costs of the 'insurance' Motorola submits was provided by Airwave Solutions to the Home Office is reflected in our analysis.

6.46 We provide further analysis of these specific points in the following paragraphs.

6.47 The evidence that we have obtained supports the provisional view that any extension that has been negotiated since 2016 should not be regarded as integral to the original PFI Agreement for the following reasons:

- (a) The OJEC notice of 23 January 1996 (see paragraph 2.53) did not provide for the possibility of the PFI Agreement to be extended beyond the 15-year term of the services contracts. Internal documents obtained from the Home Office demonstrate that the Home Office considered that there was significant risk that an extension of its contract with Airwave Solutions would be open to legal challenge under the Public Contracts Regulations 2015 and this was one of the reasons why it could not entertain the price offers made by Airwave Solutions in 2010 when under Macquarie ownership in exchange for an extension to 2035.⁵⁶⁷
- (b) The original PFI Agreement was priced and negotiated on the premise that the Airwave Network would be terminated around the end of 2019 or early 2020 and the Home Office's original intention was, as Motorola acknowledged, to shut down the Airwave Network at the end of 2019. The PFI Model, the economic model in relation to the Airwave Network only

⁵⁶⁷ Permanent Secretary Challenge Session on the Emergency Services Mobile Communications Programme (undated) and internal Home Office email dated 26 October 2016.

covered the period 2001 to 2019/2020. The PFI Model also showed that the assets would be written off by the end of the 19-year period.⁵⁶⁸

- (c) The 2002 NAO report and subsequent PAC hearings show that the expectation was that the contract would end by 2019: it was expected that the network would be operating for 15 years, with two years for decommissioning at the end.
- (d) There was an original period over which Airwave Solutions contracted with the various emergency services, which did not have a single end date but instead a 'ragged edge' of contract expiries between 2016 and early 2020.⁵⁶⁹ In 2016, towards the end of the original period, as the contract expiries with the various emergency services were approaching, Airwave Solutions and the Home Office negotiated terms on which those contracts would be aligned, with most being extended beyond their original expiry dates. Any extension to the contracts had to be negotiated and agreed and were not automatic under the PFI Agreement. Absent this further negotiation, either party, Airwave Solutions or the Home Office could, in theory,⁵⁷⁰ have ceased to trade with one another after early 2020 and neither side would have had any basis to seek compensation from the other for such a course of action since there would have been no contractual commitment in place.
- (e) The PFI Agreement makes provision for the transfer of assets to the Home Office or an alternative service provider at the end of the contract (with Airwave Solutions being required under the PFI Agreement to prepare a Service Transfer Plan) at fair market value; and under the Public Contracts Regulations 2015, the underlying assumption is that such a contract would be competed at the end of the term, unless exemptions applied (ie not simply extended as a matter of course).

6.48 We consider that Motorola's submission that Airwave Solutions could not 'walk away' in 2019 potentially reflects a misunderstanding of the purpose of the profitability analysis. One issue that we have been considering is whether charges – including those agreed in the 2016 negotiations – are the outcome of a negotiations process in which competition may have been restricted, distorted or prevented by features of the market. In that context, where the question is whether the Home Office was able to negotiate charges which were at or around the

⁵⁶⁸ The contracts specify that any assets transferred at the end of the original term should be paid for at fair market value. See section 4, and below in this section from paragraph 6.55

⁵⁶⁹ [3<].

⁵⁷⁰ We note, as a matter of practicality, that the Home Office / emergency services in Great Britain were not able to 'walk away' at the end of the original PFI Agreement period due to their critical need for a communication solution. However, that need was practical, not contractual. Were an alternative system to have been available, the Home Office and emergency services could have ceased to use the Airwave network as the various contracts came to an end from 2016 to early 2020 without providing Airwave Solutions/Motorola with any compensation.

competitive level, the relevant question is not whether Airwave Solutions could 'walk away' from the existing contract but rather whether it could 'walk away' from negotiating prices for an extension, and what would be the consequences of doing so. In this case, its 'outside option' was the default price agreed in 2016 (see section 4).

- 6.49 In light of the available evidence, our provisional view is that any continuation after late 2019 / early 2020 was an extension to the original fixed 19 year PFI Agreement period, and that separate profitability analyses of the pre- and post-extension time periods is informative in assessing the competitive conditions in which Airwave Solutions operated over these time periods.
- 6.50 The purpose of profitability analysis is to understand outcomes in the market, which may give insight into competitive conditions. In this context, the specific date on which various terms were negotiated is not relevant: our main concern is to identify the time period over which the results of those negotiations can be observed in profitability. Our provisional view is that this can most reliably be done from 2020 onwards.
- 6.51 We are primarily interested in recent and current competitive conditions in the market, rather than those which may have been present more than twenty years ago. A backward-looking profitability analysis for the original 2001-2019 time period does not necessarily provide a good indicator of potential market power and potential to extract supernormal profits at the time that the extension was agreed. Similarly, the profitability of the business over the whole 2001 to 2026 period would mix the picture from across the PFI and post-PFI periods and would risk masking the degree of profitability and market power enjoyed post-extension. That, it appears to us, would not provide insight into conditions of competition either during the original PFI period or during the extension period. Therefore, we are not minded to pursue this analysis further.
- 6.52 For the above reasons, we have provisionally concluded that we will:
- (a) Divide our profitability analysis into two separate time periods: 2001 to 2019, and 2020 to 2026;
 - (b) focus on 2020 onwards; and
 - (c) not analyse the profitability of the business over the whole 2001 to 2026 period.
- 6.53 We note that, although the Airwave Network switch-off date is now set at 31 December 2026, if there is a delay to the beginning of the transition of users from the Airwave Network to ESN or the transition itself takes longer than currently expected by the Home Office, the Airwave Network switch-off date will be likely delayed beyond 31 December 2026. The HoTs set out that where National

Shutdown Notice has been issued but the schedule needs to change because other customers subsequently need to defer the National Shutdown Target Date, the Home Office can issue a deferred National Shutdown Notice.⁵⁷¹ We set out the effect of this on profitability at paragraph 6.135.

- 6.54 Motorola stated that⁵⁷² a key challenge when using the truncated IRR methodology was to establish the correct opening and closing values of assets for the specific period under investigation; and that there was a critical need to ensure the correct opening asset value since the notional extension period IRR was extremely sensitive to the change in this opening asset value. We discuss the opening and closing values of assets in the next section on valuation of assets and carry out a sensitivity analysis.

Valuation of assets

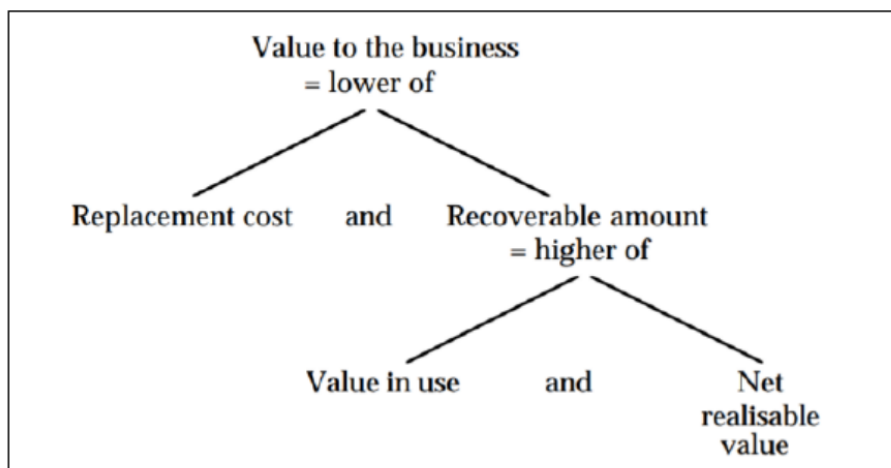
Introduction

- 6.55 The provision of Airwave Network Services relies on a dedicated infrastructure comprising the transmission network, regional switching centres, 3,800 radio transmitters (also known as base stations) providing the TETRA radio voice and data coverage, as well as various network management centres, control systems and specialist technologies (see section 2). The valuation of such assets is therefore critical to the calculation of economic profits in this case. For this purpose, the assets should be recognised at their value-to-the-business (VTB) at the start and end of any assessment periods. Figure 1 sets out how the VTB is established.

⁵⁷¹ Heads of Terms, clause 2.8. See paragraph 147 of Appendix C.

⁵⁷² [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraphs 19 and 20.

Figure 6.1: Establishing which valuation basis for an asset gives its value to the business



- 6.56 In our profitability working paper, we set out the emerging view that, in a well-functioning market, the value to the business of Airwave’s assets at the end of the original PFI period and the start of the extension period would reflect their recoverable amount (specifically, the net realisable value (NRV)) rather than their (new) replacement cost, as the former would be lower than the latter. Therefore, in our analysis, our base case profitability estimates were based on this NRV, which Motorola had estimated at £[<] million. However, we also considered a sensitivity based on the assets’ (depreciated) replacement cost, which we based on the Deloitte Report⁵⁷³ and adjusted for subsequent capex and depreciation to give a valuation of £[<] million.
- 6.57 In coming to that emerging view, we considered the following points to be of particular relevance:
- (a) The natural monopoly nature of the Airwave Network and the fact that it was provided under a PFI Agreement made following a procurement exercise, which provided guaranteed revenues set at a level to allow the supplier of these services to cover its investment in the network and operating costs, as well as to earn a reasonable return, over the period to 2019;
 - (b) the natural corollary to the significant level of protection offered to the supplier of LMR network services (in the form of guaranteed revenues) in a well-functioning market would be material protection offered to customers in the case of an ongoing need for the network beyond its original end date. In the case of the Airwave Network, this was intended to be provided by the contractual provisions relating to asset transfer at the end of the original fixed period of the PFI Agreement, which indicated that the value of the Airwave Network assets should be limited to their ‘fair market value’; and

⁵⁷³ Expert report prepared by Deloitte for Motorola dated 3 August 2016 on the fair market value of Airwave’s assets.

- (c) as highlighted in the Byatt Report, the value of existing assets to a business should be equal to the amount a competitor would be prepared to pay for them *in a competitive market*. We considered this referred to what a competitor would pay for such assets in a situation in which the market for LMR services was competitive.

- 6.58 In this context, we had the view that the sunk costs of the network, which have already been paid for by customers, should not influence pricing during an extension period that was not planned for.⁵⁷⁴ Put another way, we were not minded to consider that in a well-functioning market customers would, in effect, pay twice for the same assets if the life of the network were extended beyond the term originally envisaged when the LMR network was commissioned. We noted that the (new) replacement cost approach, which Motorola put forward as the appropriate benchmark, would result in such an outcome.⁵⁷⁵
- 6.59 In the remainder of this section, we first summarise Motorola's conceptual objections to the approach adopted in our profitability working paper, as well as the Home Office's submissions on the same. We then consider those matters in detail in the context of the well-functioning market benchmark. We consider Motorola's and the Home Office's submissions on the specific figures used in our analysis in detail in Appendix G. We summarise our provisional findings from paragraph 6.129.

Motorola's submissions

- 6.60 Notwithstanding Motorola's views on the appropriateness of splitting the financial performance of Airwave Network Services into sub-periods and calculating profitability separately for these sub-periods (as set out above), it submitted that the key to obtaining any rational result under such an approach would be the correct calculation of the closing value of assets at the end of the first sub-period, which would then determine the opening value of assets at the beginning of the second sub-period. In this context, Motorola noted that it would be incorrect to take the net book value (NBV) of the assets – calculated as the difference between accumulated capex and accumulated accounting depreciation between 2002 and 2019 – stating that it was not the case that the NBV of the assets provided a 'reasonable estimate of the value to the business', and that the results obtained from using NBV as a measure of VTB would be meaningless.⁵⁷⁶
- 6.61 Motorola told us that the most meaningful approach to establishing the replacement value of Airwave's assets on a Modern Equivalent Asset (MEA) basis

⁵⁷⁴ Beyond that NRV of the assets, which Airwave Solutions could realise either via a sale to the Home Office or other authorities under the terms of the original contracts, or on the open market.

⁵⁷⁵ See paragraph 6.60 onwards.

⁵⁷⁶ [Motorola's response to the profitability methodology working paper](#), 10 January 2022, paragraphs 6 and 7.

would be to calculate the cost of a replacement TETRA network, potentially combined with a new core network, as this would be consistent with the MEA providing the same services and with not requiring users to replace their terminal equipment. In this context, Motorola pointed out that other European countries are still deploying and upgrading TETRA for LMR for public safety. Motorola highlighted that valuing assets on an MEA basis introduces further complications. Specifically, if the services were provided over an optimally configured replacement TETRA network, much of the forecast capital expenditure needed to keep the actual Airwave Network operational and to maintain the level of service would not be necessary.

- 6.62 At the same time, Motorola submitted that operating expenditure would be different, without it being clear whether it would be higher or lower than forecast. For example, operating expenditure may be lower if replacement components were more energy efficient, but on the other hand, the MEA design may involve a greater degree of sourcing of services from third parties (eg buying connectivity instead of constructing own network assets or renting tower space from established tower companies rather than constructing new towers). Overall, this means that in addition to establishing the opening value of assets on an MEA basis, one would also have to estimate future cash flows that are consistent with using the MEA replacement in the provision of services. Motorola submitted that this is not a straightforward task.
- 6.63 Finally, Motorola noted that this exercise effectively amounted to asking at what price a competing supplier, building a complete replacement for the Airwave Network from scratch, might be able to supply the Airwave service from 1 January 2020 to 31 December 2026. In Motorola's view, one should be able to conclude without much detailed analysis that this price would be substantially higher than the price the Home Office pays for the Airwave service given that it would need to permit the competitor to recover the considerable investments in an alternative, equivalent network over a short period of time. By implication, Motorola submitted, the CMA's truncated IRR analysis, using a correct approach for establishing the opening value of assets, cannot find any excessive profitability. Motorola believed that the replacement cost of assets at the beginning of the extension period considered by the CMA would be substantially higher than the NPV of cash flows, which Motorola submitted would be confirmation according to the 2003 Oxera paper commissioned by the OFT that Airwave Solutions was not earning excessive profits.⁵⁷⁷

⁵⁷⁷ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraphs 29 to 33.

- 6.64 Following publication of our profitability methodology working paper, Motorola commissioned an expert report dated 28 February 2022 from Analysys Mason,⁵⁷⁸ which estimated the total replacement cost of the Airwave Network to be £[<] million as of 1 January 2020, comprising £[<] million of capex and £[<] million of (preparatory) opex, ie opex required in the couple of years prior to the start of the period while the network was being built.
- 6.65 In response to our profitability working paper, Motorola submitted that if one wanted to look at the terms that might hypothetically have been agreed for a defined extension period, any notion of competition in a well-functioning market must reflect the way in which LMR services needed to be provided. Motorola noted the CMA's reference to the Byatt Report and stated that it was important to consider how the threat of free entry from prospective providers would have played out if negotiations for an extension period had taken place at some point in time. In particular, Motorola submitted that the competitive benchmark price was given by the level of remuneration required by an alternative supplier to permit recovery of the investments required to provide the services needed. These investments were considerable and were set out in detail in the work undertaken by Analysys Mason. Motorola emphasised that:
- (a) It is this level of remuneration that defines the constraint on the terms that the Home Office could obtain from Airwave Solutions in a competitive, well-functioning market with the threat of free entry; and
 - (b) it is this level of investment required by such an alternative provider that also defines the *economic* value of Airwave Solutions' network assets at the start of such an extension period, making appropriate adjustments for the fact that unlike a completely new network the Airwave Network required ongoing maintenance capex. The amount a competitor in a free-entry scenario would be prepared to pay for the Airwave Network is equal to the investment in an alternative network net of the additional cost that have to be incurred as a result of the Airwave Network being old rather than new.⁵⁷⁹
- 6.66 On this basis, Motorola submitted that the revenues that any prospective supplier in a market with free entry would have required to provide the services supplied by Airwave Solutions over the extension period were in fact comparable to those earned by Airwave Solutions and that this demonstrated that a competitive, well-functioning market for the provision of services over the so-called extension period – if it could ever have existed – would have produced outcomes that were indistinguishable from those we observe in reality.

⁵⁷⁸ Report prepared for Airwave Solutions Limited by Analysys Mason entitled Modern Equivalent Asset Valuation of the Airwave Network, dated 28 February 2022.

⁵⁷⁹ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraphs 19 to 20.

- 6.67 Motorola told us that, in our profitability working paper, we had not, therefore, used the Analysys Mason work in the correct manner, which would have been to look at the IRR of a new entrant supplier who would be providing a comparable service using a network that is new and does therefore not require ongoing maintenance capex at the prices charged by Airwave Solutions. Motorola stated that the CMA instead dismissed Analysys Mason's work because '[r]eplacing ... actual / forecast cash flows predicated on the existing worn and aged asset base with hypothetical cash flows which might be incurred if the asset base were different results in IRR estimates that do not correspond with the returns actually being earned by the business.' Motorola considered this to be a fallacious argument.⁵⁸⁰
- 6.68 Motorola noted that the CMA's main reason for rejecting the work commissioned from Analysys Mason in order to establish replacement costs of the Airwave Network on an MEA basis appeared to be that the resulting network would be new and not require maintenance capex, unlike Motorola's ageing network that needs significant investment to be capable of providing the service until the end of 2026. In doing so, Motorola submitted that the CMA:
- (a) Mistakenly assumes that the Analysys Mason report was aimed at establishing the fair value of the Airwave Network. Motorola told us that this was clearly not the case, and nowhere had it made such a claim; and
 - (b) claims, without any justification, that the analysis of the profitability of service provision over a replacement does not provide much insight as it involves hypothetical cash flows that might result in IRR estimates that are different from the returns actually earned by the business.⁵⁸¹
- 6.69 Further, Motorola told us⁵⁸² that the approach of using NRV was in contrast to the recommendations in a paper written by Oxera,⁵⁸³ which stated the following (at paragraph 1.15):
- For the assessment of excessively high profits, assets should be valued on an MEA basis.
- 6.70 Motorola told us⁵⁸⁴ that the Oxera paper did not provide any further discussion of this sentence, as that was not needed as the economic logic was obvious: because in the case of suspected excessive profitability, future earnings would

⁵⁸⁰ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraphs 21 and 22.

⁵⁸¹ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 27.

⁵⁸² [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 25.

⁵⁸³ [Assessing profitability in competition policy analysis, July 2003](#)

⁵⁸⁴ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 26.

always exceed NRV and might include economic rents, and therefore replacement costs would provide an appropriate ceiling on asset values.

- 6.71 Separately, Motorola submitted that in 2018, ie two years before the ‘extension period,’ it offered the Home Office [§<] that, had the Home Office chosen to take it, would have yielded [§<] for the Home Office to the end of 2026/27. Motorola told us that the Home Office therefore had options and this was precisely what a well-functioning market looked like, noting that the fact the Home Office chose the ‘pay as you go’ option which with hindsight turned out to have been the more expensive option reflected the uncertain nature of contracting and nothing more.⁵⁸⁵ We have considered and assessed the implications of the parties’ negotiations and choices in sections 3 and 4. We do not consider them further here.

The Home Office’s submissions

- 6.72 In addition to the standard profitability analysis, the Home Office proposed that the CMA undertake a supplementary piece of analysis, examining the expected profitability of the acquisition of Airwave Solutions by Motorola in 2016. The Home Office submitted that understanding the return that Motorola expected to make in 2016 would provide insights into its assumptions at the time on how long the contract would be extended. In other words, this would allow the CMA to assess whether Motorola expected to achieve an IRR higher than the benchmark WACC by the end of the original PFI contract period, or whether this depended on the terms under which it would agree extensions to the Airwave Network. The Home Office submitted that this can provide indications of Motorola’s ability to exploit its position as monopoly supplier of critical infrastructure to extract supra-competitive rents during the extension periods. The Home Office explained that for this analysis, the CMA would need to look at the purchase price paid by Motorola in 2016 and estimates of financial forecasts for the years from 2016 onwards, and partition the analysis between the period of 2016–2019, 2020–2026, and such additional periods the CMA considers necessary.⁵⁸⁶ We note that the purchase price paid for Airwave Solutions in 2016 can provide an upper bound estimate of the VTB of its assets at that date and that such an analysis can, therefore, be informative in the context of our profitability analysis. We have, therefore, carried out this analysis, as set out in Appendix I and we note that it supports the provisional conclusions that we reach on asset valuations as set out from paragraph 6.86 below.

⁵⁸⁵ [Motorola’s Response: Reimagining the Well-Functioning Market: the CMA’s construction of a market that never existed](#), 20 May 2022, paragraph 5.

⁵⁸⁶ [Home Office’s response submission to the CMA’s profitability methodology working paper](#), 11 January 2022, paragraph 18.

- 6.73 In response to our profitability working paper, the Home Office noted that it considered the CMA's principles in valuing Airwave's assets to be sound and that we have followed those principles 'thoroughly, albeit conservatively'.⁵⁸⁷

Provisional assessment

- 6.74 Motorola's submission on our approach to valuing Airwave Solutions' assets turns on its view of the well-functioning market benchmark and the competitive price associated with that situation. In effect, Motorola submits that the 'competitive price' is that which would be sufficient to incentivise a new entrant with a new network into the market to provide these services for the limited remaining period over which the Home Office requires them.⁵⁸⁸ For the reasons set out in our profitability working paper and reiterated below, we are not minded to agree that such a price represents the outcome of a well-functioning market in the particular circumstances of the Airwave Network since it implies that customers should have both guaranteed revenues to cover the original risks associated with investing in the network, and then pay again (effectively twice) for the use of the LMR assets employed by Airwave Solutions simply because the life of the network was extended beyond that originally envisaged.
- 6.75 The characteristics of LMR networks – in particular, the very large, sunk costs associated with the development of such networks – are such that there is likely to be a single supplier and one or a small number of purchasers (who may group together).⁵⁸⁹ We would not expect to see LMR networks being developed speculatively but rather the main purchaser(s) effectively commissioning a supplier to develop and operate a network.
- 6.76 In return, the purchaser would provide a high level of security to the supplier in terms of demand / remuneration for the services provided. Indeed, this was the case with the Airwave Network where PITO signed a long term agreement with Airwave Solutions for the provision of services, under which revenues were largely guaranteed.⁵⁹⁰

⁵⁸⁷ [Home Office submission and response to working papers](#), 24 May 2022, paragraph 38.

⁵⁸⁸ [Motorola submission, Reimagining the well-functioning market: the CMA's construction of a market that never existed](#), 20 May 2022, paragraph 14.

⁵⁸⁹ Although Airwave Solutions provides services to a couple of hundred organisations, ie the emergency services plus various Sharer organisations, we note that only a small number of customers are of a sufficient scale to make it economic for them to commission this type of service. The other Sharer organisations could be expected to find an alternative solution in the absence of an existing LMR network.

⁵⁹⁰ The core service charge for the original PFI Agreement was based on a baseline figure and adjusted each year to take account of indexation. The core service charge did not vary by volume once all the police forces were in receipt of the service, save for service charge credits which were applied, and in 2016 and 2018 the outcome of the negotiations was that revenue would be maintained until closure of the network, even as individual Police Forces moved over to ESN. Menu charges do have a volume element in that they are levied on individual police forces depending on the level of coverage required locally. However, we understand that this coverage requirement does not vary materially from year to year.

- 6.77 Our provisional assessment is that, in a well-functioning market, in the situation where a supplier is provided with a guaranteed level of revenues to ensure it is able to recoup the significant outlay required to develop a network, we would expect customers to enjoy material protection with respect to the pricing of LMR services in the event of requiring an extension of services beyond the period originally envisaged.
- 6.78 Specifically, we would expect pricing during such an extension period to be constrained at a level at which the supplier was, broadly, only able to recover the incremental investment in the network required to extend its life, its (efficient) operating expenses, and a reasonable return on its capital, taking into account the risks assumed by the supplier over the extension period.⁵⁹¹ This result could be achieved via different mechanisms, including, for example the contract providing effectively for the transfer of the network assets at the end of the contract period. This would allow for the re-tendering of the provision of services using that already built-and-paid-for network.⁵⁹²
- 6.79 We note that rather than being ‘fictitious’, as Motorola has asserted, this well-functioning market benchmark closely mirrors the contractual provisions and expectations at the time that the original PFI Agreement was signed, although we observe that some of these provisions have not been effective (see section 4). For example, we note statements made by Motorola during our site visit about the original pricing of the network and the assets employed therein:
- [X] The original PFI contract will have assumed the shutdown at 2019 and then network decommissioning taking place thereafter? The pricing for that contract will have built in that assumption?
- [X] Yes.
- [X] So, it will have assumed a complete amortised cost of everything by the end of the PFI contract?
- [X] Yes.⁵⁹³
- 6.80 We also note two pieces of evidence that we consider relevant to this question:

⁵⁹¹ We note that this constraint could be provided either by an effective contract, or by competition among several potential LMR network suppliers which were already operating in the market, ie who had already incurred the sunk costs of constructing a network.

⁵⁹² See section 4 for our further consideration of the well-functioning market. A different alternative could be for the contract to require that the original supplier reduce prices during any extension period to reflect the fact that the network assets had already been ‘paid’ for over the original contract term.

⁵⁹³ Site visit. We note also the following in a written response from the Home Office to the Public Accounts Committee: ‘The Airwave contract payments are spread over 15 years for each force starting at the Ready for Service date. There was a planned progressive roll out starting in 2001 and the total life of the programme, including the roll-out and decommissioning phases, will be 19 years.’ Committee of Public Accounts (2002), [Public Private Partnerships: Airwave](#) (HC783).

- (a) First, the PFI Model, which was submitted to us as providing the basis on which PITO and BT originally contracted in the PFI Agreement, [3<]. This suggests that the original pricing agreed between PITO and BT was considered sufficient to fully compensate BT/Airwave Solutions for its investment in the network; and
- (b) second, the main contracts between Airwave Solutions and the emergency services contain provisions for the Home Office (having taken over from PITO) or the relevant authority to acquire network assets at their fair market value if they wish to take control of them at the end of the original contract period:
 - (i) The PFI Agreement states that: 'If the AUTHORITY exercises such option [to purchase the assets of the network on termination or expiry of the agreement], the AUTHORITY or an Alternative Service Provider shall, within 30 days of the exercise of the option, pay to the CONTRACTOR the agreed fair market value of such assets and contracts as are transferred to the AUTHORITY or an Alternative Service Provider. The CONTRACTOR shall not give any warranty whatsoever relating to the quality or fitness for purpose of the Transferable Assets and the fair market value shall be calculated accordingly.'⁵⁹⁴
 - (ii) The Firelink Project Agreement states that: 'In consideration for the transfers provided for under Paragraph 5, the Authority shall, subject to Clause 6.2, pay the Contractor a sum equal to the Total Fair Market Value less (in the case of any termination of this Agreement pursuant to Clause 34.2 (Voluntary Termination) or Clause 28.4 (Termination for prolonged Force Majeure) the amount of any sums payable by the Authority to the Contractor pursuant to Paragraph 4 of Schedule 10 (Reimbursement of Termination). For these purposes the Total Fair Market Value is aggregate of the Fair Market Value of all Transferring Assets shown in the Asset Register...'⁵⁹⁵
 - (iii) The Ambulance Contract states that: 'Upon Termination or Expiry or any other Service Transfer... the Authority (or its nominee) or the Replacement Supplier shall be entitled to acquire, at its option, and the Contractor shall, if so requested by the Authority, transfer to the Authority (or its nominee) or the Replacement Supplier, any one (1) or more of the Transferable Assets, and any such transfer shall... be made at no cost to the Authority (or its nominee): (i) if the Transferable

⁵⁹⁴ PFI Framework Arrangement for the Public Safety Radio Communications Service dated 29 February 2000 between Police Information Technology Organisation and British Telecommunications plc.

⁵⁹⁵ Firelink Project Agreement dated 29 March 2006, [3<].

Assets are transferred to the Authority on Expiry; or (ii) upon Termination, if the Authority has already fully paid for those Transferable Assets through the Charges or any compensation paid pursuant to subclause 42.1, otherwise, the price payable by the Authority for such transfer shall be the lower of Net Book Value (as specified in the Register and calculated in accordance with the Financial Model) and Fair Market Value, less any amount that has been paid by the Authority for those Transferable Assets through the Charges and any compensation paid pursuant to subclause 42.1.⁵⁹⁶

- 6.81 These contract terms suggest that, at the end of the original agreements, the Home Office and other relevant authorities should have the opportunity to purchase the Airwave Network at its residual value. We note that such a value – described as ‘fair market value’ – is that of the assets on the open market absent the contract with the Home Office. To ascribe a higher value to them, as Motorola seeks to do, would in our provisional view allow it to capitalise the value of its incumbent position in serving the Home Office and other relevant authorities, in effect charging its customer twice for the Airwave Network due to the need for an unexpected extension.
- 6.82 In this context, we are not minded to agree with Motorola’s submissions on both the Oxera paper and the Byatt Report.⁵⁹⁷ The former constitutes general guidance which is not tailored to the specific circumstances of this (or any other particular) case. As Motorola acknowledges, the report does not provide any further discussion of its recommendation to use the MEA basis. We agree that, in most competition cases, the MEA will be the appropriate basis but not, in our provisional assessment, in the circumstances of this case for the reasons set out in paragraph 6.57 above. Our provisional view is that, in a well-functioning market, a customer should not be required to pay twice for the same assets, in particular, where that customer originally committed to a long term contract which provided a guaranteed level of revenue to cover the cost of investing in those assets in the first place.
- 6.83 The key insight, it appears to us, from the quoted section of the Byatt Report is that assets should be valued at the level at which they would be traded in the

⁵⁹⁶ Project Agreement for the provision of radio-based voice and data communication services for Ambulance Trusts in England dated 19 July 2005.

⁵⁹⁷ In our [Profitability modelling and results](#) working paper, we highlighted paragraphs 51 to 53 of the Byatt Report (‘Accounting for economic costs and changing prices: a report to HM Treasury, 1986’), which state: ‘In measuring the continuing costs of supply the relevant prices are those that would be paid for resources purchased now in the normal course of business in competitive markets. Such competitive market conditions may result from the actual existence of competing producers or, more generally, from the threat of competition from potential producers entering the market. Even where competitive markets do not exist, it is necessary to estimate the effects that competition would have in order to measure the value of the resources used.’ The assumption of free entry into a market defines the level of profit required to cover the cost of capital, since no-one will enter unless they expect to recover this cost. The assumption of free entry also defines the value of existing assets to a business as equal to the amount a competitor would be prepared to pay for them in a competitive market.’

absence of the existence of market power for any party which controls those assets. We note that this would be the fair market value of the assets employed by the Airwave Network in their state as of the end of 2019, ie their scrap value. The use of (an undepreciated) MEA as the benchmark in this case would seem to us to allow Motorola to capitalise on its incumbent position as owner of Airwave Solutions to realise a windfall gain on the value of its assets (the windfall being the difference between the scrap value of the assets which it would have recovered in the absence of the contract extension and their replacement value). As set out above, we are minded to regard the approach set out in the Byatt Report as more appropriate given the circumstances of this case.

- 6.84 In its response to our working papers on profitability and the cost of capital, Motorola stated⁵⁹⁸ that we had ignored the fact that Airwave Solutions' assets were not fully written down by the end of 2019 and that the cost had therefore not been fully recovered. It cited our model from the first profitability working paper⁵⁹⁹ which showed that accumulated depreciation fell short of the accumulated capex at the end of 2019 by £240m.⁶⁰⁰
- 6.85 As to that submission, we note four points:
- (a) First, the NBV of Airwave Solutions' assets as of the end of 2019 was, in fact, only £170 million in its statutory accounts, rather than £240 million. The higher figure was the product of retrospective changes made to Airwave Solutions' depreciation policy in the August Model submitted to the CMA.
 - (b) Second, this change in depreciation policy was made to reflect the longer expected useful life of the Airwave Network assets as the result of the extension. In other words, in the expectation that they would be used beyond the end of 2019.
 - (c) Third, it is likely that a large amount of capex spent in the final years of the PFI Agreement period was actually with a view to ensuring the longevity of the network for the extension period, and therefore it would not have been written off by the end of 2019 because it was expected to be 'paid for' via revenues collected during the 2020 to 2026 period.
 - (d) Finally, we note that the PFI Agreement was priced using an IRR/cash flow model. In such a model, the depreciation policy chosen has no influence on estimated returns because depreciation is not a cash flow item. Hence, whether or not Airwave Solutions had chosen a depreciation policy that fully

⁵⁹⁸ [Motorola's response to the CMA's working papers on Profitability and the Cost of Capital](#), 20 May 2022, paragraph 38.

⁵⁹⁹ [Profitability modelling and results \(publishing.service.gov.uk\)](#), 6 May 2022.

⁶⁰⁰ £240 million was the figure contained in the financial forecasts Motorola provided in August 2021, however we noted that the relevant figure calculated directly from the figures contained in Airwave Solutions' accounts was £170 million.

wrote off the assets it invested in by 2019 is not in our provisional assessment relevant to the question of whether the original price agreed allowed the business to fully recover those costs.

Provisional conclusions – valuation of assets

- 6.86 Our provisional conclusion therefore is that in a well-functioning market, the value to the business of Airwave Solutions' assets would reflect their net realisable value (NRV) rather than their (new) replacement cost. The NRV reflects the value to Airwave Solutions of the assets in the absence of the market power which it may derive from its position as incumbent supplier of the Airwave Network to the emergency services in Great Britain. As set out in Appendix I, the NRV of the Airwave Network as estimated by Motorola was £[X] million.
- 6.87 We note that the analysis we carried out in Appendix I, using the purchase price of Airwave Solutions in 2016 as a proxy for the VTB of the business' assets as of that date, indicates that Motorola had recovered the large majority of its investment in Airwave Solutions (plus a reasonable return) by the end of 2019 (a shortfall of c.£ [X] million to £[X] million) and had more than recovered its investment plus a reasonable return by the end of 2020. We note that this is consistent with a minimal asset value as of the end of 2019.
- 6.88 We also note that, even if it were appropriate to adopt the replacement cost approach, the most reliable approach in our provisional view would be to use the replacement cost of the existing assets in their current condition, ie the depreciated replacement cost (DRC) together with existing opex and capex forecasts, since this most closely reflects the performance of the existing Airwave Solutions business, ie the actual timing of cash flows into and out of the business (which is essential for a meaningful IRR estimate). As set out in Appendix I, we are minded to consider that the most reliable estimate of the DRC of the Airwave Network is approximately £[X] million, a figure taken from the Deloitte (2016) Report prepared for Motorola on acquisition of Airwave Solutions and adjusted by us to reflect subsequent capex and depreciation of the assets.

Adjustments to costs – transfer charging issues

- 6.89 Airwave Solutions is not a standalone firm transacting exclusively with third parties, rather it is part of the Motorola group of companies and it transacts extensively with other businesses within that corporate group. Airwave Solutions therefore utilises both resources external to Motorola and resources that have been provided internally.⁶⁰¹

⁶⁰¹ For this purpose costs that Airwave Solutions incurs by contracting with third parties (which would include its staff costs) are counted as external costs.

- 6.90 For externally provided resources we note that Motorola, in common with the previous owners of Airwave Solutions, would have had the incentive to select suppliers in a way that minimises its overall cost base. Therefore, the costs reported for these items are likely to reflect reasonably efficient choices at the time Motorola committed to deploy those resources. The default assumption is therefore the costs of utilising these resources would have been measured on an economic basis.
- 6.91 For internally provided resources, however, it is not clear whether resources costed in line with the transfer charging practices of a corporate group would, necessarily, reflect economic costs. In the case of Motorola, we observe that its transfer pricing policy document appears to have been devised primarily for tax planning and compliance purposes.⁶⁰² We note that Motorola may also have an additional interest in reducing the apparent profitability of Airwave Solutions in the context of its ongoing negotiations with the Home Office.
- 6.92 We have, therefore, undertaken a detailed review of Airwave Solutions' transactions with the rest of Motorola that relate to Airwave Network Services. We identified five areas for further scrutiny as follows:
- (a) The provision of a parent company guarantee (PCG) by Motorola Solutions Inc (MSI);
 - (b) the provision of strategic support;
 - (c) the provision of 'MSI field engineers';
 - (d) the recharge of shared selling, general and administration (SG&A) items incurred elsewhere within Motorola; and
 - (e) the purchase of capital equipment.
- 6.93 We summarise our provisional findings in each of these areas below. Full details of our analysis are set out in Appendix H.

Parent company guarantee

- 6.94 This relates to the transfer charges from Motorola Solutions, Inc. (MSI)⁶⁰³ to Airwave Solutions in relation to a guarantee that Motorola provides to the Home Office that, were Airwave Solutions to get into financial difficulty, then it would both ensure the performance of the Airwave contracts and financially underwrite Airwave Solutions up to a value of £[§<] million (indexed up each year by RPI

⁶⁰² Motorola's response to Q1 to RFI 2 dated 9 July 2021, attachment titled ' '. This document indicates that transfer pricing policy is owned by Motorola's Corporate Tax department.

⁶⁰³ The ultimate parent company for the Motorola group of companies.

inflation). The Home Office re-set the level of the requirement for a guarantee from the ultimate parent company of Airwave Solutions in light of the negotiations with Motorola when it acquired Airwave Solutions in 2016.

- 6.95 In 2020 Motorola commissioned KPMG to estimate a range for the annual charge that a third party would incur for the provision of such a guarantee. KPMG arrived at a range for the charge between US\$ [0.5 to 1.0 million] [£] million (£ [0.3 to 0.8 million]) [£] million) and US\$ [9.0 to 10.0 million] [£] million (£ [6.8 to 7.7 million]) [£] million) per year dependent on whether one took into account the probability of Airwave Solutions defaulting or Motorola defaulting. KPMG used the credit ratings of Airwave Solutions and Motorola respectively to estimate these probabilities, with both businesses having strong credit ratings but that of Airwave Solutions being significantly stronger than that of Motorola (suggesting that Motorola had a higher probability of default than Airwave Solutions).
- 6.96 Our provisional assessment is that the US\$[9.0 to 10.0 million]) [£] million per year estimate is an inappropriate basis for assessing the value of this guarantee since the guarantee's primary purpose is to provide protection (from Motorola to customers) in the case in which Airwave Solutions were to default. We note the PCG does not provide protection against a default by Motorola itself and that, if Motorola were to default, then the guarantee would be worthless. We therefore consider an internal charge set at a level which takes into account the probability of Airwave Solutions defaulting to be appropriate.
- 6.97 We are minded to regard KPMG's estimate based on Airwave Solutions' probability of defaulting as setting an upper limit for the appropriate charge. It is an upper limit because KPMG's estimate for the charge based on Airwave Solutions probability of defaulting is computed on the basis that, should Airwave Solutions default, Motorola would be required to fund £[£] million to Airwave Solutions. The amount Motorola would in fact be required to fund, however, would depend on how much money Airwave Solutions actually needed in order to operate until the transition to ESN was completed. It may well be the case that Airwave Solutions would require a sum less than the £[£] million cap in order to meet its ongoing operational and financial obligations.
- 6.98 In our provisional analysis, we have taken a conservative approach, ie assumed the upper bound is appropriate, and used a PCG cost of £[0.3 to 0.8 million] [£] million per year.

Strategic support

- 6.99 Motorola told us that, as of 2019, it had introduced a strategic management fee of around £[£] million a year in order to compensate the rest of Motorola for:
- (a) ongoing supply of know-how;

- (b) commitment to provide TETRA technology advances and fixes as needed;
- (c) management commitment to the customer at the highest levels within MSI;
- (d) guarantees of system operation; and
- (e) ensuring the coordination for ESN transition.⁶⁰⁴

- 6.100 In 2020 Motorola commissioned KPMG to estimate a range for the annual charge that a third party would incur for the provision of such services as set out in paragraph 6.99. In arriving at a suggested range for this charge, between 3% and 7% of revenues, KPMG benchmarked Motorola strategic support against a franchisor / franchisee model whereby the franchisee pays the franchisor a royalty fee. Motorola adopted a figure towards the lower end of the range, ie [X]%, to calculate the level of the internal charge to Airwave Solutions.
- 6.101 We are concerned, however, that the approach adopted by Motorola with respect to charging for strategic support is inappropriate for two key reasons. First, our provisional assessment is that it is likely to result in the double counting of costs. We would expect many, if not all, of the know-how and support services set out in paragraph 6.99 to be covered by other pre-existing transfer charges within Airwave Solutions' financial statements such as the normal provision of management services (see SG&A support below), the charges for field engineers, hardware and software support ('MSI field engineers') and charges for Motorola-branded equipment, on which Motorola charges a significant mark-up on sale to Airwave Solutions. As set out in further detail in Appendix E, the descriptions and explanations of the strategic support services provided by Motorola have not, in our provisional view, identified different and additional services provided to Airwave Solutions that have not been remunerated via these other intragroup transfers.
- 6.102 Second, we are not minded to regard the relationship between the rest of Motorola and Airwave Solutions as analogous to that between a franchisor and a franchisee. In this context, we note that Airwave Solutions supplied LMR network services to emergency services in Great Britain for 15 years prior to Motorola's acquisition of the business and we have not observed any material change to the nature or quality of those services in the period since 2016. As a result, our further provisional assessment is that a royalty fee is not an appropriate basis for setting an internal charge in this case.
- 6.103 In a genuine franchisor / franchisee relationship there is a strong interdependency of the performance of the franchisor and the performance of the franchisee. In that circumstance it would make sense for commercial arrangements between the two

⁶⁰⁴ Motorola's response to the FQ1 (24/01/22), paragraph 32.

(which may well include a royalty fee payable by the franchisee to the franchisor) to be such that they seek to optimise their joint performance. But we do not see that interdependency in this case. Airwave Solutions is able to optimise its own performance with the aid of inputs from Motorola such as 'MSI Engineers' and equipment for which there are already separate transfer charges.

- 6.104 For the above reasons, therefore, we have provisionally set the level of this internal fee to be zero for the purposes of the profitability analysis.

'MSI field engineers'

- 6.105 We noted a charge for 'MSI field engineers' shown within the August Model – there was a doubling of the internal charge to profit and loss account from around £[§<] million per year in years 2016 to 2019 to £[§<] million in 2020.
- 6.106 We learned that in fact 'MSI field engineers' referred not just to field engineers but also, and more significantly, a contract for hardware and software support that had been renegotiated between Airwave Solutions and MSUK in 2020.⁶⁰⁵ That contract for hardware and software support had previously been negotiated in 2014 when Airwave Solutions was owned by Macquarie. Motorola told us that the 2014 agreement was out of date and it had undertaken an extensive piece of work in order to ascertain what would be an appropriate software support charge for what had become an increasingly aging asset.
- 6.107 We asked Motorola to give us a year-by-year analysis of internal charges for maintenance on two bases: one based on transfer charges and the other based on the costs attributed to maintenance as reported within Motorola's management accounts for the Airwave Business Unit (ABU). The costs in the management accounts are reported on the basis of the 'actual expense incurred (labour and repairs)'. We summarise that analysis in the table below.

⁶⁰⁵ See Appendix H.

Table 6.1: Internal charges for maintenance costs 2016 to 2021, £ million

| Contract negotiated with | per Airwave Solutions transfer charges basis | | | | | | per Airwave Business Unit basis | | | | | |
|-----------------------------|--|------------|------------|------------|------------|------------|---------------------------------|------------|------------|------------|------------|------------|
| | Macquarie (see Note) | | | | Motorola | | Macquarie | | | | Motorola | |
| | 12 months to | | | | | | 12 months to | | | | | |
| Categories | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| "MSI field engineers" | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Software & hardware support | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Total | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

Note: The contract with Macquarie is dated December 2013 and covers the period from 1 January 2015 to 30 June 2017. The parties to the contract, Airwave Solutions and Motorola, then agreed on 30 June 2017 to extend the duration of the contract to December 2019.

- 6.108 Motorola explained that, in contrast to the approach taken within the management accounts for the ABU, Airwave Solutions' financial statements also reflected a large component of cost attributable to software licensing and support. That, Motorola explained, covered the upfront costs for software development, labs, testing etc, and all the support that comes with the right to use Motorola software such as software updates, patches, security updates and engineering support on various levels for troubleshooting, defect resolution and maintenance. Those costs were not, Motorola explained, allocated to the ABU but attributed centrally to Motorola's R&D departments.
- 6.109 Motorola also told us that prices charged from 2014 to 2019 were below fair market price because of a pricing concession offered to Airwave Solutions in 2014 that should have been reversed much earlier.
- 6.110 The documentation created at the time of the renegotiation that Motorola provided us did not, in our assessment, provide evidence of increased activity levels which would justify the higher level of charge. We gave Motorola an opportunity to make further submissions presenting any additional evidence or analysis that supported the higher level of internal charging. We received no response.
- 6.111 We do not consider that Motorola has submitted evidence sufficient to support its submission that the prices charged from 2014 to 2019 reflected below fair market prices. In our provisional view, the level of charge reflected the outcome of a negotiated bargain between two large and well-informed firms covering the period from 2014 to 2019 inclusive, Macquarie and Motorola respectively. We also note that the sharp increase in charges for software and hardware charges from 2020 (see Table 6.1) appear to reflect an increased recovery for software overheads,

rather than any change in levels of activity or costs of provision (noting that ABU's total costs do not appear to have changed).

- 6.112 In the absence of evidence for increased support activity on the ground, or that previous prices were below the market level, our provisional assessment is that the level of the economic costs should be set at the previous level ie at approximately £[X] million per year for the purposes of the profitability analysis.

Selling, General & Administration (SG&A)

- 6.113 This area covers the routine provision of sales, marketing, distribution and administrative/management services to Airwave Solutions which are centrally provided by Motorola, either regionally through regional hubs or from head office. Such services relate to management, IT, marketing, legal, treasury and cash management, HR, tax, training, procurement, accounting and finance.
- 6.114 Motorola told us that it used a variety of allocation keys (such as sales or headcount) to attribute these costs to the relevant legal entities, including Airwave Solutions, generally with a [X]% mark-up.
- 6.115 We have not seen any evidence to suggest that these transfer charges have not been determined on an objective and arm's length basis. Therefore, we do not propose to make any changes to the figures for Airwave Solutions that Motorola has given us for the purposes of the profitability analysis.

Equipment

- 6.116 In any one year Airwave Solutions sources up to half its expenditure on equipment⁶⁰⁶ (ie items which are all capitalised in its financial statements) from the rest of the Motorola group. We would expect the internal charges levied on Airwave Solutions to be consistent with those prices payable by independent third parties.
- 6.117 The internal charges the rest of Motorola levies to Airwave Solutions for such equipment are based on either:
- (a) An agreement made in 2012 between Airwave Solutions, then owned by Macquarie and Motorola as set out in the 2012 Price Book; or
 - (b) for items not appearing in that price book, the mark-ups on labour and materials costs reflected in Motorola's costings for its interworking proposal to the Home Office in 2015. In other words, if the item of equipment does not

⁶⁰⁶ In this context 'equipment' includes not only the equipment itself but any associated labour needed to bring that equipment into use.

appear in that price book, the internal charge is based on cost mark-ups that were reflected in a proposal to the Home Office.

- 6.118 We note that the Analysys Mason and Deloitte reports indicate that the costs of TETRA (ie LMR) equipment has declined significantly in the last two decades. We are therefore concerned that the use of outdated price books may result in a higher price than justified by market conditions. Furthermore, we observed that the mark-ups proposed to the Home Office on an interworking solution which it could not procure from another source (than Airwave Solutions) might not reflect the competitive level one might expect to see where a purchaser had a choice of suppliers.
- 6.119 We therefore sought to compare the level of the internal charges for equipment levied on Airwave Solutions with those payable by independent third parties. We were only able to do this at an aggregate level because the detailed specification of the equipment Airwave Solutions procures from the rest of Motorola differs from that of other LMR customers.
- 6.120 We therefore asked Motorola to provide us with the mark-up on costs it achieves on its global sales of equipment to third parties in order to compare those with the mark-up on costs it told us it is reflecting within the internal charges to Airwave Solutions for equipment. A comparison of those mark-ups would test whether, as a whole, prices on sales to third parties are lower or higher, when compared to costs, than those for internal charges.
- 6.121 Motorola provided us with mark-ups analysed for a single bundle of LMR equipment and services.⁶⁰⁷ That analysis showed that mark-ups on costs on third party sales were as a whole generally significantly lower than those markups that Motorola told us were being reflected in the internal charges for equipment – see paragraph 6.117 above for an explanation of the basis of those internal charges.
- 6.122 In order to give ourselves an indication of the magnitude of the difference in the level of charges that would be levied if the level of charging to third parties as a whole were reflected within internal charging, we performed an indicative calculation. We took the materials and labour costs associated with all the internal equipment purchases that Motorola was planning for the Airwave Network over the period 2021 to 2026 (ie a six-year period) as part of the Airwave Network refresh programme and applied to this sum the average mark-up achieved in 2021 by Motorola on sales to third parties of [150 to 200] [%].⁶⁰⁸ Total charges on this basis would come to around £[<] million over the period. We then compared this

⁶⁰⁷ As a result, what Motorola provided us did not isolate third party *equipment* sales. It also included services which utilised that equipment. An example of the latter would be the Airwave contract itself – that is a service which utilises LMR equipment in order to provide the contracted-for service. See Appendix H.

⁶⁰⁸ We simply added the figures we had been provided with across the years 2021 to 2026, ie we did not discount figures that related to later years back to 2021 cash values.

£[X] million to the sum of internal charges that Motorola plans to charge for this equipment over the same period. That figure is around £[X] million. So, on this basis, the level of charging over a six-year period was roughly £30 million higher than it would be if based on the 'average' level of charging to third parties. This difference equates to roughly £5 million a year.

- 6.123 It therefore appears to us that the mark-ups charged by Motorola to Airwave Solutions may be higher than one would expect on a purely arm's-length basis. However, we recognise that our analysis is only indicative given the difficulties in benchmarking the specific equipment provided to Airwave Solutions that we are interested in against the bundle of equipment and services sold by Motorola globally. Therefore, we have not sought to make any adjustment to Motorola's internal charges for capital equipment. (However, in coming to a provisional conclusion on the level of forecast capex, we have reviewed Airwave Solutions' proposed capex programme and made some adjustments. These are discussed in detail in Appendix G.)

Summary of adjustments

- 6.124 The sum of our analysis in the preceding paragraphs is that we have, provisionally, made the following adjustments to the operating expenditure for Airwave Network Services:
- (a) Reduced the charge for the PCG from £[6.8 to 7.7 million]) [X] million to £[0.3 to 0.8 million] [X] million per year from 2019 onwards;
 - (b) reduced the charge for strategic support from £[X] million to zero per year from 2019 onwards; and
 - (c) reduced the charge for 'MSI field engineers' from £[X] million to £[X] million per year [ie roughly by half] from 2019 onwards.
- 6.125 We have, provisionally, not made any adjustments to the charges for SG&A or to the internal charges for equipment reflected within outturn or forecasts for the Airwave Network refresh programme.

WACC

- 6.126 Consistent with our approach to the calculation of profits achieved from the operation of the Airwave Network (see paragraph 6.45 onwards), we have estimated the cost of capital for two separate time periods:
- (a) At the start of the 'historical' or 'PFI' period, ie around 1 April 2001; and
 - (b) as of late 2019/early 2020, ie after the original fixed period of the PFI Agreement and at the start of the 'extension' period. This is the cost of capital

that in our provisional view is of primary relevance to our profitability analysis since it provides the benchmark for the ‘extension’ period.

- 6.127 The detail of our calculations is set out in Appendix J, where we also discuss whether, in light of the risks associated with constructing and operating the Airwave Network, it is appropriate to uplift a WACC to reflect a ‘hurdle rate’ or the risk of loss from an innovative/uncertain investment.
- 6.128 We summarise the results of our provisional analysis set out in Appendix J in Table 6.2 below.

Table 6.2: **Estimates** of nominal pre-tax WACC

| | % | |
|------|---|---|
| | <i>Mid-point of estimate for ‘PFI’ period</i> | <i>Mid-point of estimate for ‘extension’ period</i> |
| | <i>(as of April 2001)</i> | <i>(as of late 2019 /early 2020)</i> |
| WACC | 8.6 | 5.5 |

Source: CMA analysis

Results

- 6.129 We set out the calculations underlying the results in Appendix G.
- 6.130 We set out the results for our base case asset value, ie an asset value of £[~~3~~] million, as of the end of 2019. We have also considered a sensitivity profitability analysis using a higher 2019 asset value of £[~~3~~] million. However, as explained above, we do not propose to treat this depreciated replacement cost as the appropriate value on which to base our assessment. Our analysis assumes that the Airwave Network is switched off, as announced by the Home Office in April 2021, at the end of 2026.⁶⁰⁹
- 6.131 As stated in paragraph 6.8 above, we made a provisional calculation of supernormal profits,⁶¹⁰ which are the profits left over after the providers of capital have been paid a market-based return on their investment. This is calculated as the NPV of profits when the IRR is set equal to the WACC. We calculated supernormal profits because their extent (and, consequently, any detriment to

⁶⁰⁹ [Letter](#) from Matthew Rycroft, Permanent Secretary to Meg Hillier MP, Chair, Public Accounts Committee, 6 April 2021; [Public Accounts Committee evidence session, 7 June 2021](#).

⁶¹⁰ Economic profits are also called supernormal profits.

customers) is not immediately clear from a percentage gap between IRR and WACC.

6.132 We also compare the IRR, where possible to calculate, to the relevant WACC.⁶¹¹ Our provisional assessment of the relevant WACC for Airwave Solutions is set out in Appendix G.

6.133 As set out from paragraph 6.7 above, we have also provisionally calculated the IRR, where possible to calculate, based on cash flows and truncated over a segment of an activity's lifespan, which reflects the economic principle of the time value of money. The IRR is expressed as a percentage and is then compared to the relevant WACC.

Table 6.3: IRR results 2020-2026, % / £m

| Results | <u>Base case</u> | <u>Sensitivity</u> |
|---------|------------------|--------------------|
| NPV £m | £1,135m | £969m |
| IRR % | n/a | 137% |

Source: CMA analysis

6.134 If there were a delay to the beginning of the transition of users from the Airwave Network to ESN or the transition itself took longer than currently expected by the Home Office, then the Airwave Network switch-off date may be delayed beyond that date. We have therefore also provisionally calculated the annual supernormal profits that Airwave Solutions would achieve under this scenario.

6.135 Based on our calculations, we estimate that any additional year of delay of transition to ESN would result in approximately £159 million of supernormal profits for each year.⁶¹²

6.136 For completeness, we also calculated the profits achieved from operating the Airwave Network in the period from 2001 to 2019 and estimated that the IRR was between 10.6% and 11.1%.⁶¹³

Provisional conclusions

6.137 We therefore provisionally conclude that Motorola is likely to derive supernormal profits in relation to the supply of LMR network services for public safety following

⁶¹¹ Calculation of an IRR requires an initial cash outflow. In circumstances where there is no initial cash outflow, calculation of an IRR is not possible.

⁶¹² Calculated as the average annual NPV of operating cashflows (ie not including beginning and end lump sums) over the period 2020-2026 totalling £[>] billion.

⁶¹³ The range is driven by the range of closing asset values as at 31 December 2019.

the end of the original fixed period of the PFI Agreement, ie for the period from 2020 onwards.

7. PROVISIONAL DECISIONS ON AEC

- 7.1 Under section 134(1) of the Act we are required to decide whether ‘any feature, or combination of features, of each relevant market prevents, restricts or distorts competition in connection with the supply or acquisition of any goods or services in the United Kingdom or a part of the United Kingdom’. A feature for the purposes of section 134(1) of the Act can take the form of the structure of the market and/or the conduct of any of the participants in the market, including customers.⁶¹⁴ We can consider either individual features or a combination of features of a market. ‘Conduct’ includes any failure to act (whether or not intentional) and any other unintentional conduct.⁶¹⁵
- 7.2 The framework for our analysis of the product market definition is explained in the final part of section 3 of this report. We have provisionally defined the product market as the supply of communications network services for public safety and ancillary services.
- 7.3 The framework for our analysis of geographic markets is also explained in the final part of section 3 and we have provisionally found that the relevant geographic market is Great Britain.
- 7.4 We refer to the defined market in this provisional decision report as ‘the market for the supply of communications network services for public safety’.
- 7.5 In the following paragraphs we first provide an overview of our competitive assessment, which is described more fully in section 4 of this provisional decision report. We then set out the features which, in our provisional judgement, give rise to an AEC in this market and estimate the level of customer detriment resulting from it.

Overview of the competitive assessment

- 7.6 We set out below our provisional views on the way the market for the supply of communications network services for public safety operates and the aspects of this market that do not work well, based on the evidence that we have assessed.
- 7.7 At the centre of our provisional findings is the unique nature of the communication needs of Great Britain’s emergency services. It was decided by the government nearly 30 years ago that, at that time, the emergency services’ needs would be best met through the provision of a highly resilient network covering Great Britain, that would require its own dedicated infrastructure of base stations and specialist hardware, and dedicated support teams to ensure 24/7 support and rapid recovery

⁶¹⁴ [EA02, section 131\(2\)](#) and [CC3 \(Revised\)](#), paragraph 155.

⁶¹⁵ [EA02, section 131\(3\)](#).

from any technical failures. Initially, that network would serve police forces, with fire and ambulance services joining later. Once in place, this network would provide essential services which all organisations (and a total of around 300,000 staff) involved in emergency situations would rely on to save lives. It would therefore become a critical piece of infrastructure on which the emergency services in Great Britain, and ultimately lives, depend.

- 7.8 The decision to build a network of the kind described meant that a single supplier would be best placed to provide for the emergency services' needs under long term contracts including, the government decided, a PFI Agreement. Under these contracts, the large upfront investment necessary for the building of the underlying bespoke telecoms infrastructure could be recouped, and an estimated rate of return earned, by the supplier over the life of the contracts.
- 7.9 An important source of competitive constraints on suppliers in this market,⁶¹⁶ therefore, is competition for the market, when long term contracts are first tendered and when they expire (or, more specifically, in anticipation of their expiry when a replacement network is competed for).
- 7.10 The terms of the PFI Agreement under which the Airwave Network is provided resulted from a process – tendering under public procurement rules – that can broadly be characterised as such competition for the market. We have therefore not focused our competitive assessment on the original period of the PFI Agreement.
- 7.11 It appears to us that, in that original period, the Home Office had the opportunity to run an open competition for a supplier and, as a result, to agree terms that constrained the price of the provision of the network.⁶¹⁷ In such a competition, the winning supplier would reasonably have been expected to set the price at a level that would enable it to cover its expected costs and earn a reasonable return for the period of the contract. There was inevitably uncertainty upfront for the supplier as to whether it would be able to cover its costs and make a sufficient profit margin. However, that was a risk it was reasonably expected to bear, in the same way that it was reasonably entitled to retain any extra profits gained if it delivered its obligations below the expected cost during the original period of the agreement.
- 7.12 The PFI Agreement was for a fixed term ending in 2019.⁶¹⁸ It provided for a contract price designed to recoup the investment required to build the network and offer the possibility of an estimated rate of return over that period, but not beyond. It contained provisions which sought to deal with the end of the contract and the transfer of assets, with no terms relating to or contemplating its extension. These

⁶¹⁶ But not the only one – see section 3.

⁶¹⁷ Although, as described in Appendix B, there were some limitations on the extent of the competition that applied and the National Audit Office reported on these.

⁶¹⁸ Once all related contract end dates were aligned.

appear to us to be consistent with terms we might find in a well-functioning market (up to 2019).

- 7.13 In particular, in a well-functioning market, we might expect that the arrangements made under the PFI Agreement would be replaced, on the expiry of its original fixed term, by: (i) a competitively priced continuation of the operation of the existing network infrastructure (for example, under a retendering process facilitated by the transfer of the assets to the Home Office or the threat of such a process); or (ii) a competitively priced replacement network offering enhanced functionality (for example, one tendered under a new process). The terms of the PFI Agreement were consistent with the former possibility; the Home Office's procurement of ESN with the latter.
- 7.14 The position now that the original period of the PFI Agreement has ended, however, is, in our provisional assessment, materially different from that in the earlier period. The key question is whether the terms that continue to apply after 2019 can be regarded as the result of a competitive process and consistent with what we would expect to see in a well-functioning market.
- 7.15 In our provisional view, the terms on which the Airwave Network is provided after 2019 are better characterised as reflecting a virtually unconstrained monopoly position on the supplier's part rather than the result of a competitive process. Prices are established through bilateral negotiations between Airwave Solutions and its owner, Motorola (the monopoly supplier) and the Home Office (acting on behalf of all emergency services) in which the Home Office has no meaningful alternative option in terms of its choice of supplier.
- 7.16 It is noteworthy, in our provisional view, that the terms on which the network is supplied, particularly the price, have not materially changed as we would expect in a competitive market to reflect that: (i) the original fixed period of the PFI Agreement has ended; and (ii) the incremental cost of providing the Airwave Network will have fallen significantly compared with the previous period where the supplier had to incur the substantial set-up costs of building the network.⁶¹⁹ This is despite:
- (a) The original terms of the PFI Agreement not contemplating their continued application after 2019;
 - (b) the expectation that the supplier's capital expenditure associated with the provision of the network and services to the end of 2019 should have been fully accounted for in its successful bid for the original contract; and

⁶¹⁹ We have noted and considered in section 4 of this provisional decision report the [X].

- (c) the risk borne by the supplier being much reduced after 2019 because the network is built and is operating as a reliable income stream.

In other words, the terms of the PFI Agreement do not appear reliably to constrain the price at which the Airwave Network is provided after 2019 and do not result in a price or a level of profitability that would be expected in a well-functioning market.

7.17 Key reasons for the present position, in our provisional view, are that:

- (a) The contractual provisions put in place under the PFI Agreement to enable competition for the provision of services using the underlying infrastructure at the end of the original fixed period of that agreement have not resulted in the transfer of network assets to the Home Office and Airwave Solutions continues to own them; and
- (b) the fact that the government's chosen replacement for the Airwave Network, ESN, is taking considerably longer to implement than was contemplated: (i) when it was procured; and (ii) in 2016 when the parties negotiated terms that relate to the provision of the Airwave Network after 2019.

7.18 The Home Office and the emergency services in Great Britain appear to be 'locked in' with a monopoly provider, Airwave Solutions, well beyond the duration originally set under the PFI Agreement, and have no other choice but to use the Airwave Network for their key communications needs in critical situations. This situation is likely to continue until at least 2026 and [X] possibly for a [X] period beyond.

7.19 It is our provisional view that Airwave Solutions and its owner, Motorola, now have considerable market power in this market. The available evidence indicates that in the negotiations between Airwave Solutions and the Home Office relating to the continued provision of the Airwave Network beyond 2019, the Home Office is in a particularly weak bargaining position. That weakness results primarily from the absence of any alternative option at the Home Office's disposal for as long as ESN is not operational.

7.20 There are also additional factors that in our provisional assessment reinforce Airwave Solutions' and Motorola's market power and the weakness of the Home Office's bargaining position:

- (a) The criticality of the service provided and concerns about the impact of any service disruption on the emergency services;
- (b) the likely ineffectiveness of the original contractual provisions relating to benchmarking (and the lack of reliable comparators that make any benchmarking exercise practically very difficult (if possible at all)); and

(c) the asymmetry of information between the parties.

- 7.21 The first of those additional factors means that the Home Office and emergency services users are dependent on the continued provision of the network, without disruption or degradation. Moreover, it appears to us that the risks to public safety in the event of reduced or discontinuous network service are so serious that this is likely to limit very substantially the Home Office's ability to challenge the terms Airwave Solutions / Motorola propose.
- 7.22 The other two affect the Home Office's ability to assess the profitability to Motorola of any price offer made and to limit further its scope to challenge the reasonableness of such offers. As a result, in our provisional assessment, not only does the Home Office lack bargaining power in the negotiations, but it is not in a position reliably to determine whether Airwave Solutions is charging (or seeking to charge) prices that result in supernormal returns.
- 7.23 Two further issues relating to Airwave Solutions' and Motorola's roles in the delivery of ESN and the transition to it from the Airwave Network are also relevant. Our provisional assessment is that these add to the competitive distortions in the market.
- 7.24 The first of those further issues is Motorola's dual role as both one of the key suppliers involved in the roll-out of ESN and, from 2016, the owner of Airwave Solutions. This means it has controlled both the Airwave Network (the current network) and key aspects of the delivery of ESN (the replacement network) since 2016 and it continues to do so.⁶²⁰
- 7.25 Delivering ESN is a complex project involving a number of parties and inter-dependencies, and a range of factors affect its timing. Several factors have been assessed, including by the National Audit Office, as hampering its progress, particularly in the early days of its development. They include: contractual ambiguities leading to disputes between Motorola and the Home Office; limits to contract sizes imposed by the Cabinet Office resulting in the delivery of ESN being packaged into a number of different 'Lots'; the replacement of KBR as the supplier of ESN Lot 1; and the impact of the replanning process that took place in 2018 and 2019. We also note that the Home Office, in consultation with its key suppliers, set an ambitious timetable for ESN's delivery in 2019.
- 7.26 Nonetheless, our provisional view is that Motorola's dual role as the owner of Airwave Solutions and a key supplier of ESN give it the incentive and the ability to delay the delivery of the latter and thereby prolong the highly profitable monopoly position of Airwave Solutions.

⁶²⁰ We have noted and considered in section 5 of this provisional decision report in particular [3<].

- 7.27 In particular, our analysis indicates that the profits Motorola derives from the Airwave Network significantly outweigh any profits it can expect to derive from the delivery of its ESN obligations, directly or indirectly, and can be expected to dull its incentive to deliver those obligations in a timely and efficient manner. Motorola's central role in delivering ESN, and the limited effectiveness of the means for addressing any sub-optimal performance (including in the DoR), also appear to us to mean that it is capable of delaying the delivery of ESN and prolonging its position in relation to the Airwave Network.
- 7.28 We cannot, in a project of the complexity of ESN, readily identify the precise impact of every party's actions (or inaction) on the timing of the project's overall delivery. We have, however, observed outcomes relating to the delivery of ESN – including its timing – that are consistent with Motorola having the incentives and ability we have identified.
- 7.29 The second of the further issues that adds to the competitive distortions (in our provisional view) is that during the period (estimated to be at least 27 months) in which the transition between them will gradually occur, the Airwave Network and ESN will need to be linked.⁶²¹ This will occur through interworking, which will support communications between various user groups as they switch networks at different times. The current interworking solution that Airwave Solutions / Motorola have developed involves proprietary interfaces and the Home Office has indicated that it is contemplating changes to ESN which would require the development of an alternative interworking solution.
- 7.30 The development of any such alternative interworking solution appears to rely on the active cooperation of Airwave Solutions and, potentially, Motorola. Consequently, in our provisional assessment, they have an ability to delay, hamper and/or make more costly the development of any such solution and the transition process, if they choose. Further, it appears to us that the competition issues described in paragraphs 7.7 to 7.18 above in particular, and the related high profits to be made by them if the transition from the Airwave Network is delayed, may dull their incentives effectively and efficiently to deliver an alternative interworking solution that works with a replacement MCPTT application, were the Home Office to seek to replace Motorola's Kodiak application at the end of the current contract in 2024 (or sooner).⁶²²
- 7.31 It therefore appears to us that the current situation, in which charges for the provision of LMR network services for public safety by Airwave Solutions are not

⁶²¹ Because of the critical nature of network communication services for public safety and the length of the transition period.

⁶²² We have also noted and considered in section 5 of this report that [3<].

subject to meaningful constraints, is the result of a market that is not functioning well.

AEC in the market for the supply of communications network services for public safety and ancillary services in Great Britain

- 7.32 Based on our analysis of the market, we provisionally find that features of the market for the supply of communications network services for public safety, individually or in combination, prevent, restrict or distort competition in connection with the supply of LMR network services for public safety in Great Britain.
- 7.33 In particular, the following features mean Airwave Solutions, and its owner, Motorola, have unilateral market power and are able, as described further below, to charge prices above the level we might expect in a competitive market and to make supernormal profits:
- (a) The Airwave Network is a critical piece of infrastructure on which the emergency services in Great Britain, and ultimately lives, depend.
 - (b) The Airwave Network is the only network of its kind in Great Britain and is provided by a monopolist. No other such networks exist nor are they likely to be constructed and ready for use before ESN is able to replace it.
 - (c) The Airwave Network assets have not transferred to the Home Office under the terms of the PFI Agreement, Airwave Solutions still owns them (and the related business) and the Home Office cannot retender or realistically threaten to retender their provision.
 - (d) The longer than anticipated lead time for the delivery of ESN and its replacement of the Airwave Network: it will not be ready to replace the Airwave Network until at least 2026 and [X] possibly [X] later.
 - (e) The Home Office and the emergency services in Great Britain are locked in with the incumbent supplier of communications network services – Airwave Solutions (and Motorola) – beyond the period over which its prices were, or should have been, constrained by the terms of the PFI Agreement (and Airwave Solutions should have recouped its investment and a reasonable return).
 - (f) The Home Office has very weak bargaining power.
 - (g) The asymmetry of information between the parties.
 - (h) The lack of effective constraints provided by the terms of the PFI Agreement on the price of the provision of the network after 2019, including the benchmarking provisions which are likely to be ineffective.

- 7.34 In addition, two further features strengthen and have the potential to prolong the unilateral market power described above:
- (a) The dual role of Motorola which dulls its incentive to deliver ESN Lot 2 effectively and efficiently, and which gives Motorola the ability to prolong the operation of the Airwave Network by delaying the delivery of ESN.
 - (b) The role of interworking in strengthening Airwave Solutions' and Motorola's market power, by enabling them to delay, hamper and/or make more costly the transition of users from the Airwave Network to ESN.
- 7.35 In our provisional assessment, these two additional features add to the AEC we have provisionally found but are not determinative of it. In other words, we would be minded to find an AEC even in the absence of these two additional features.

Customer detriment

- 7.36 We have considered the nature and potential scale of the customer detriment arising from the AEC we are minded to find in the market for the supply of communications network services for public safety.⁶²³
- 7.37 A detrimental effect on customers is defined as one taking the form of:⁶²⁴
- (a) Higher prices, lower quality, or less choice of goods or services in any market in the UK (whether or not the market to which the feature or features concerned relate); or
 - (b) less innovation in relation to such goods and services.
- 7.38 Our provisional view is that the AEC we have provisionally identified is likely to result in material customer detriment in the market for the supply of communications network services for public safety. That judgement is based on our reasoned provisional estimation of the supernormal profits that Airwave Solutions (and Motorola) can be expected to make until the Airwave Network is switched off at an uncertain point in the future.
- 7.39 We have estimated that, if the Airwave Network is switched off by 31 December 2026, between January 2020 and that date Airwave Solutions and Motorola can be expected to make total supernormal profits from the operation of the network of approximately £1.1 billion. For each additional year of operation beyond 2026 – if the delivery of ESN is further delayed – we estimate that they can be expected to make around another £160 million of such supernormal profits. Supernormal

⁶²³ [EA02, section 134\(4\)](#).

⁶²⁴ [EA02, section 134\(5\)](#).

profits the firms would be able to generate by making interworking more costly would be additional to this.

7.40 We are minded to regard these supernormal profits as:

- (a) A reflection of Airwave Solutions' and Motorola's ability to set prices very substantially above the competitive level such that the Home Office and the emergency services in Great Britain are paying a much higher price than they should for the provision of the relevant services; and
- (b) a reasonable measure of the transfer of welfare from the emergency services, and therefore from taxpayers who fund these services, to Motorola shareholders that can be expected to result from the AEC we have provisionally identified.

7.41 As such, they amount to a considerable level of customer detriment, particularly considering that these supernormal profits are accruing to a single supplier over a condensed period of time.

8. PROPOSED REMEDIES

- 8.1 This section sets out our provisional assessment of the remedies that would be appropriate to address the AEC we have provisionally identified in the market for the supply of communications network services for public safety. The section begins with a description of the framework we apply when assessing potential remedies. The remainder is then divided into three parts.
- 8.2 The first part sets out the package of remedies that we propose to introduce given the AEC we have provisionally found, after providing a summary of the submissions we have received in relation to those remedy options, and our provisional assessment of the issues raised in those submissions.
- 8.3 The primary remedy we are proposing is a charge control to mitigate the principal detrimental effect of the AEC we have provisionally identified on customers, namely Airwave Solutions' (and its owner, Motorola's) ability to price above levels we would expect to prevail in a competitive market (the 'charge control remedy'). This remedy would also require Airwave Solutions to provide certain information to support the operation of the charge control.
- 8.4 Alongside this, we are proposing to:
- (a) Recommend to the Home Office that it should, as soon as possible, implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029; and
 - (b) require Airwave Solutions and Motorola to deliver, and/or facilitate the development and delivery of, an alternative interworking solution in a timely and effective manner, if requested to do so by the Home Office (the 'interworking remedy'). The interworking remedy would require that services associated with the development and use of the alternative interworking solution be provided on a cost-plus basis and would set out how that requirement should be interpreted.
- 8.5 The second part of this section provides our provisional assessment of other remedies we have considered but are not proposing to take forward, including structural remedies.
- 8.6 The third part provides our provisional assessment of the effectiveness and proportionality of the proposed remedies package. This draws on the analysis set out in Appendix K, which provides our provisional assessment of how the charge control should be applied and, in particular, sets out our provisional views on:
- (a) Charge control design: including the scope, form and duration of the proposed charge control, and the associated review arrangements.

- (b) Charge control calibration: that is, the levels at which charge control allowances should be set.
- (c) Reporting and assurance requirements.

8.7 Finally, at the end of the section, we set out our provisional decision on remedies.

Framework for our assessment of potential remedies

8.8 As set out in the Act and in Guidance, where we identify an AEC we are required to determine:

- Whether we should take action ourselves, or whether we should recommend the taking of actions by others for the purpose of remedying, mitigating or preventing the AEC concerned or any detrimental effect on customers so far as it has resulted from, or may be expected to result from, the AEC;
- where we consider that we should take action ourselves, whether that should be through exercising our order-making powers or through accepting undertakings from parties or, where we recommend that others take action, what they should do; and
- whether a single remedy or a package of two or more remedies is required.⁶²⁵

8.9 In coming to a view on potential remedies, the Act requires us to ‘in particular have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the adverse effect on competition and any detrimental effects on customers so far as resulting from the adverse effect on competition’.⁶²⁶

8.10 Remedies can remedy, mitigate or prevent the AEC or its detrimental effects on customers. Our clear preference is to deal comprehensively with the cause or causes of AECs wherever possible, and by this means significantly increase competitive pressures in a market within a reasonable period of time.⁶²⁷ However, while generally preferring to address the causes of AECs, we will consider introducing measures which mitigate the harm to customers created by competition problems, for example if other measures are not available, or as an interim solution while other measures take effect.⁶²⁸

⁶²⁵ [CC3 \(Revised\)](#), paragraphs 325 to 328. Section 134(4) of the [Act](#).

⁶²⁶ Section 134(6) of the [Act](#).

⁶²⁷ [CC3 \(Revised\)](#), paragraph 330.

⁶²⁸ [CC3 \(Revised\)](#), paragraph 333.

- 8.11 In assessing various potential remedy options, we consider their effectiveness and proportionality. In relation to each of those principles, a number of factors are relevant.
- 8.12 With respect to effectiveness, in line with our Supplemental Guidance,⁶²⁹ we highlight that:
- We assess the extent to which different remedy options are likely to be effective in achieving their aims, including their practicability.
 - We consider the risks associated with different remedy options and will tend to favour remedies that have a higher likelihood of achieving their intended effect.
 - A remedy should be capable of effective implementation, monitoring and enforcement. To facilitate this, the operation and implications of the remedy need to be clear to the persons to whom it is directed and also to other interested persons, such as customers, other businesses that may be affected by the remedy, sectoral regulators, and/or any other body which has responsibility for monitoring compliance.
 - We will generally look for remedies that prevent an AEC by extinguishing its causes, or that can otherwise be sustained for as long as the AEC is expected to endure.
 - We will also tend to favour remedies that can be expected to show results within a relatively short time.
 - When designing remedies we will consider whether to specify a finite duration – for example, by means of a long-stop date in a ‘sunset clause’ – as part of the design of individual measures. This is a material consideration in relation to behavioural remedies, such as charge controls, in particular, because those remedies are designed to have ongoing effects on business conduct throughout the period they are in force.
 - A sunset clause will generally specify when individual measures cease to have effect, whether by reference to a specific date or a clearly defined future event. A number of considerations may be relevant to our decision whether to specify a finite duration for a measure and the duration of any such ‘sunset clause’, including: (i) the length of time over which the AEC is expected to persist; (ii) the role that the measure is expected to play in tackling the AEC and/or resulting customer detriment; and (iii) the extent to which the measure is expected to become obsolete over time. Whether to include a sunset

⁶²⁹ [CMA3](#), paragraphs 4.15-4.24.

clause and any sunset date will therefore depend on the circumstances of the case.

- The duration of an AEC in the absence of an effective intervention by the CMA cannot always be predicted and there will similarly be some uncertainty about the precise timescale over which remedies will be effective. We may nonetheless be able to identify a date or event beyond which we consider it would not be necessary and appropriate to retain a remedy in force and, in these circumstances, we would typically expect to adopt a sunset clause as part of the design of the remedy.
- Consistent with our objective to avoid retaining remedies in force when they are no longer necessary and appropriate, the CMA will also often consider whether remedies should be subject to reviews after certain periods.
- Remedies may need to take account of existing laws and regulations and those which are expected to come into force in the near future.
- Where more than one measure is being introduced as part of a remedy package, we will consider the way in which the measures are expected to interact with each other.

8.13 In making an assessment of proportionality, we are guided by the following principles. A proportionate remedy is one that:

- Is effective in achieving its legitimate aim;
- is no more onerous than needed to achieve its aim;
- is the least onerous if there is a choice between several effective measures; and
- does not produce disadvantages which are disproportionate to the aim.⁶³⁰

8.14 Applying these principles in any case usually involves considering different remedy options relative to one another and relative to the possibility of taking no action. We will also apply the principles to the individual measures within a package of remedies as well as to the package as a whole.⁶³¹

8.15 In reaching a judgement about whether to proceed with a particular remedy, we will consider its potential effects – both positive and negative – on those persons most likely to be affected by it. We will have particular regard to the impact of remedies on customers, as well as on those businesses subject to them.

⁶³⁰ [CC3 \(Revised\)](#), paragraph 344.

⁶³¹ [CC3 \(Revised\)](#), paragraphs 345 and 346.

- 8.16 Beneficial effects might include lower prices, higher quality products/services and/or greater innovation. The potential negative effects of a remedy may arise in various forms, for example:
- (a) Unintended distortions to market outcomes, which may reduce economic efficiency (including dynamic incentives to invest and innovate) and adversely affect the economic interests of customers over the longer term, as well as unintended effects on other interests that may be relevant in this case, such as public safety;
 - (b) implementation costs, ongoing compliance costs, and monitoring costs (for example, the costs to the CMA or other agencies in monitoring compliance); and
 - (c) if remedies extinguish relevant customer benefits (RCBs), the amount of RCBs foregone may be considered to be a relevant cost of the remedy.⁶³²
- 8.17 There can be cases where the desirable features of a remedy may be in tension with one another. For example, it is beneficial for a remedy to be certain and specific, but the precise period for which it may be required may be uncertain and the greater the specificity of a remedy the bigger the risk of it becoming obsolete (each of which points might suggest that remedies can benefit from a degree of flexibility). We will therefore make a judgement in the round about the effective and proportionate remedy or package of remedies that appropriately responds to the findings in an investigation.
- 8.18 We highlight, however, that where businesses have been found to be making profits persistently in excess of their cost of capital as a direct result of one or more features of the market, and are likely to continue to do so in the absence of intervention, we will not usually give any significant weight to the anticipated reduction of such profits as a negative effect of a remedy.⁶³³
- 8.19 The remedies we impose could involve taking action ourselves and / or recommendations to other bodies that they act. We may make such recommendations where it is more practicable, or otherwise preferable, to implement a remedy by that means. That could include where we consider that the legal framework or regulatory arrangements that apply in a market should be changed, and that a recommendation to the government to that effect would be appropriate.⁶³⁴
- 8.20 In evaluating the effectiveness of a recommendation as a potential remedy, we will form a view on the likelihood that the recommendation will be acted on and the

⁶³² [CC3 \(Revised\)](#), paragraph 351-352.

⁶³³ [CC3 \(Revised\)](#), paragraph 353.

⁶³⁴ [CC3 \(Revised\)](#), paragraph 379 and Annex B paragraph 94.

timescale over which this might be expected to occur. In considering the form a recommendation may take, we will normally consider a range of factors including how any necessary change might be best achieved by the party to which the recommendation is addressed.⁶³⁵

Our proposed remedies

8.21 In our December 2021 issues statement,⁶³⁶ we described – and sought views on – three broad categories of remedies we had identified as potentially relevant in this case, given the nature of the theories of harm under investigation:

- Price/charge controls: Airwave Solutions could be required to satisfy specified requirements in relation to the terms upon which it makes services available to users.⁶³⁷
- Information transparency remedies: Airwave Solutions could be required to disclose cost and accompanying operational information to its customers and/or a regulatory body.
- Structural separation remedies: for example, Motorola could be required to divest either Airwave Solutions or other activities it carries out that relate to the roll-out of ESN.

8.22 We considered these broad categories of remedies further in our May 2022 potential remedies working paper, in which we sought views on our emerging thinking on the likely effectiveness and proportionality of different potential approaches, and on whether there were other remedy options that it may be appropriate to consider.⁶³⁸ We have also considered the submissions of Motorola, the Home Office and other interested parties with respect to potential remedies.

8.23 Our provisional view now is that the following package of remedies should be introduced, given the AEC we have provisionally found:

- (a) A charge control remedy to limit what Airwave Solutions is allowed to charge its customers for most of the services it provides.⁶³⁹
- (b) Alongside the charge control remedy, a recommendation to the Home Office to implement, as soon as possible, a plan to ensure that the supply of communications network services for public safety is subject to competitive

⁶³⁵ [CC3 \(Revised\)](#), Annex B paragraphs 98 and 100.

⁶³⁶ [Issues statement \(publishing.service.gov.uk\)](#)

⁶³⁷ We use the term ‘charge control’ in this document – rather than ‘price control’ – as that terminology appears to better reflect the lump sum nature of most of the relevant payments made in relation to Airwave Network services.

⁶³⁸ [Potential remedies \(publishing.service.gov.uk\)](#).

⁶³⁹ The services that the proposed charge control would apply to are set out in Appendix K.

pricing arrangements, or measures to similar effect, by no later than the end of 2029.

- (c) An interworking remedy to set requirements on Airwave Solutions and Motorola relating to the development, delivery, use and price of an alternative interworking solution, if such a solution is requested by the Home Office.

8.24 For each of these remedies, we provide a summary of the submissions we have received in relation to the remedy option, and our provisional assessment of the issues raised in those submissions, before setting out our proposed approach. Our provisional assessment of the effectiveness and proportionality of our proposed remedy package is set out in paragraphs 8.110 to 8.167.

The charge control remedy

8.25 A charge control remedy would limit what Airwave Solutions is allowed to charge its customers for those services included within the scope of the control.

Parties' submissions⁶⁴⁰

Motorola views

8.26 Motorola said that imposing a charge control regime of the kind envisaged in the potential remedies working paper would involve the Airwave service being provided under fundamentally different conditions, and would put at risk service quality and ultimately lives.⁶⁴¹ In explaining this view, Motorola said it would be highly regrettable if it were unable to concentrate on making necessary mission-critical network changes no matter the cost, and to have to engage in a pre-approval process with the Home Office.⁶⁴² Motorola said that its experience from ESN is such that it could not undertake critical investments 'on risk' in the hope that the Home Office might at some point agree to cover the costs. Motorola said that in that scenario – which it said was eminently foreseeable – the CMA's intervention could cost lives by taking key operational decisions out of the hands of Airwave Solutions and putting them in the hands of the Home Office.⁶⁴³

8.27 Motorola also emphasised the need to consider the risks of a charge control being set too tightly, and said that could put at risk necessary investments in the network.⁶⁴⁴ [redacted].⁶⁴⁵ [redacted].⁶⁴⁶ Motorola said that the risk associated with this type of

⁶⁴⁰ We provide our provisional assessment of issues raised in parties' submissions that relate to how a charge control might be applied in Appendix K.

⁶⁴¹ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraphs 4-5.

⁶⁴² [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 5.

⁶⁴³ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 5.

⁶⁴⁴ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 12.

⁶⁴⁵ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 13.

⁶⁴⁶ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 13.

eventuality is already allocated in the Airwave Solutions contract, to the effect that Motorola simply has to ‘get it done’, ‘no matter the cost’, but that the imposition of a charge control would fundamentally change that.⁶⁴⁷

8.28 Motorola further said that a charge control would be disproportionate including because:⁶⁴⁸

- Forcing Airwave Solutions to reduce the contractually agreed price for the last few years of a now-fixed 26-year contract would severely damage trust in contractual agreements with the UK Government.
- Implementing a charge control properly is burdensome and difficult for all parties, involving (among other things) a careful assessment of the competitive price level, of the impact of imposing controls that are too tight, and of the safety margin that should be built into the control.
- Benchmarking provisions have been agreed between the parties from the outset and it would be disproportionate to ignore these.

8.29 Motorola said that a proportionate remedy, if one were to be required, would recognise that 31 December 2026 represents the contractually determined end of the Airwave Network service, and would provide a backstop if the Home Office wanted to continue with the Airwave Network beyond the end of 2026 and the parties could not reach agreement.⁶⁴⁹

Home Office views

8.30 In its main hearing before us, the Home Office said it would be desirable if a charge control was introduced which included a margin set by the CMA.⁶⁵⁰ The Home Office said that a charge control would provide an effective remedy to control the current pricing harm to customers and to mitigate the risks of pricing harm until the Airwave Network is replaced.⁶⁵¹ The Home Office also said that the scale of its financial outlay meant that it needed some ability to control the costs that are included in charges, and ‘to be able to do something about it’ if cost were identified as unreasonable.⁶⁵² The Home Office provided a detailed submission on how a charge control could be applied (in response to our potential remedies working paper) which is considered in Appendix K in the context of charge control design issues.

⁶⁴⁷ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 13.

⁶⁴⁸ Motorola's response to Q1a of the Remedies questions dated 18 February 2022.

⁶⁴⁹ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 17.

⁶⁵⁰ Home Office Hearing with the CMA on 2 March 2022.

⁶⁵¹ Home Office's submission and response to the CMA's working paper on Potential Remedies, 31 May 2022, paragraph 2.

⁶⁵² Home Office Hearing with the CMA on 2 March 2022.

Provisional assessment of issues raised in the parties' submissions

- 8.31 We note Motorola's submission that imposing a charge control regime of the kind envisaged in our potential remedies working paper would put at risk service quality and ultimately lives by taking key operational decisions out of the hands of Airwave Solutions and putting them in the Home Office's.⁶⁵³ We take seriously and have considered carefully the risk that remedies that address any competition concerns have unintended consequences, including on the quality of service and safety. Those aspects of the provision of the Airwave Network are not in issue and in assessing possible remedies for the competition concerns we provisionally identify, relating for example to price, maintaining quality and safety are key.
- 8.32 We understand Motorola's submission to relate to a scenario where the design of a charge control meant that Airwave Solutions' ability to recover future capex was dependent on Home Office approval. We understand Motorola to be saying that the introduction of this dependency would diminish the effectiveness and timeliness of its ability to respond to relevant changes in circumstances.
- 8.33 Motorola's comments also appear to be directed at the statement in our potential remedies working paper that we were considering a number of different conditions that it may be appropriate to include as part of a charge control to determine whether costs should be treated as eligible for recovery through charges. In particular, we said that the eligibility of costs for inclusion within the charge control calculation could be made conditional on Airwave Solutions having met some defined information provision and engagement requirements. We noted that this might include requirements on engagement with the Home Office on material changes to capex plans.
- 8.34 As set out in paragraph 8.44 and Appendix K, our provisional view is that requirements related to Airwave Solutions' provision of information to the Home Office, Airwave Network users and the CMA on the evolution of its capex plans and spend should be included within the proposed charge control arrangements. However, this would not introduce a new requirement for Home Office approval of changes to capex plans. Given the above points, we are not minded to treat Motorola's stated concerns with respect to Home Office decision making as having a material bearing on our proposed approach.
- 8.35 We also note Motorola's submission that if a charge control was set too tightly it could put at risk necessary investments in the network. Our provisional assessment of how the proposed charge control should be calibrated is set out in Appendix K. To support our assessment, we have obtained a significant amount of information from Motorola on its views with respect to the likely level of relevant costs over time, and the assumptions which underpin those views. We have taken

⁶⁵³ Motorola's Response to the CMA's working paper on Potential Remedies, 30 May 2022, paragraph 5.

evidence of Airwave Solutions' outturn costs, and Motorola's own forecasts of relevant costs over time, as our starting point, and made adjustments to Motorola's views of relevant costs only where we consider there to be a strong case for doing so on the balance of available evidence. Our provisional view (as set out more fully in Appendix K) is that this approach provides a robust basis for guarding against the risk of the proposed charge control being set too tightly (where 'too tightly' here would mean that the charge control would not allow Motorola – if operating efficiently – to be able to expect to earn a normal return from the provision of the relevant services).

- 8.36 With respect to Motorola's comment that necessary investments in the network could be put at risk if a charge control were set too tightly, we observe that Airwave Solutions would continue to be subject to the existing service standard requirements after the proposed charge control was introduced, and that it would be for Motorola to determine what investments were necessary in order to meet those service standard requirements. Nevertheless, we consider Motorola's comments to be consistent with Home Office concerns with respect to asset stewardship risks under charge cap arrangements, and – as set out further in Appendix K – those concerns have informed our provisional view that the proposed charge control should include information provision requirements in relation to the evolution of Airwave Solutions' capex plans and spending levels.
- 8.37 As a more general provisional observation, we note that maintaining service quality and safety should not, in a well-functioning market, be dependent on a supplier having the ability to set prices above the competitive level. Where we provisionally find that features of the market give Airwave Solutions / Motorola unilateral market power and the ability to charge such prices, a remedy that addresses those effects will not necessarily reduce quality and safety.
- 8.38 We consider that Motorola's submission about the possibility of [~~§~~]⁶⁵⁴ highlights the potential for some exogenous changes to have a material bearing on cost requirements. Our provisional view is that the inclusion of a charge control review in 2026 provides an appropriate means of taking account of the risks associated with such changes. In Appendix K, we set out our provisional views on how we would expect exogenous changes in circumstances to be taken into account in the proposed 2026 charge control review.
- 8.39 We have considered Motorola's submission that intervening in the pricing of Airwave Solutions' services would undermine trust in contracting with the UK Government. This outcome according to Motorola would, if realised, potentially impose various costs (monetary and non-monetary) across British society.

⁶⁵⁴ [Motorola's Response to the CMA's working paper on Potential Remedies](#), 30 May 2022, paragraph 13, and Email from Winston & Strawn to CMA, 6 June 2022.

- 8.40 We observe that the original PFI Agreement and the subsequent contracts, all envisaged the end of the operation of the Airwave Network as of late 2019 / early 2020. Indeed, this remained the case following Motorola's acquisition of the network in 2016, at which time the 'ragged edge' of contracts were aligned to 31 December 2019. The government provided no guarantees of further revenues beyond that point and, had ESN been delivered and the transition between networks completed on time, there would likely have been no such further revenues for Airwave Solutions. In these circumstances, we do not consider that our proposed intervention to limit the prices charged during an (unforeseen) extension period, to address (only) the supernormal element of Airwave Solutions / Motorola's profits and leaving the terms of the original contracts unchanged, would be likely to undermine trust in contracting with the UK Government.
- 8.41 We note Motorola's submission that benchmarking provisions have been agreed between the parties from the outset and that it would be disproportionate to ignore these. Our provisional views on why we do not consider that the benchmarking arrangements within the existing Airwave contracts would be likely to provide an effective constraint on prices, so as to address an identified AEC, are set out in paragraph 4.213 in section 4 of this provisional decision report.
- 8.42 We also note Motorola's comments on the difficulties of implementing a charge control properly. Our provisional views on charge control design and calibration in Appendix K take account of a range of potential disadvantages that might be associated with specific choices we might make in formulating that remedy.

The proposed charge control remedy

- 8.43 Our provisional view is that a charge control should be introduced to mitigate the detrimental effect on customers of Airwave Solutions pricing above competitive levels. We recognise that a charge control would not address the underlying cause of the AEC we have provisionally identified, but it would mitigate the customer detriment arising from that AEC.⁶⁵⁵
- 8.44 In line with our provisional assessment, in Appendix K, of charge control design and calibration issues, the proposed charge control would:
- (a) Take effect from the commencement date of a Remedies Order, which we expect to be in the first half of 2023, and remain in force until the end of 2029, with a review to be undertaken in 2026 (other than where the shutdown of the Airwave Network made such a review and/or the continued operation of the charge control no longer necessary).

⁶⁵⁵ [CC3 \(Revised\)](#), Annex B, paragraph 86.

- (b) Apply to the products and services provided by all Airwave Solutions' business lines, with the exception of: Ambulance Bundle 2; Pronto; the CCCRS; Radio terminals (except where part of a managed service); and services associated with the development and provision of a new alternative interworking solution.
- (c) Specify an overall revenue allowance for each year of the control that would limit the level at which charges for services within the scope of the control could be set, subject to CPIH indexation of the identified opex component and the relevant identified asset value,⁶⁵⁶ and to adjustments as a result of the cost sharing mechanism described below.
- (d) Include a cost sharing mechanism that applied to capex on external (ie non-Motorola sourced) equipment such that Airwave Solutions would retain 75% of savings achieved relative to a pre-determined target level for the given year (with the other 25% subsequently returned to customers), and Motorola would bear 75% of any over-spend relative to the target level (with the other 25% passed on to customers).⁶⁵⁷
- (e) Require Airwave Solutions to provide information to the Home Office, Airwave Network users and the CMA concerning the evolution of capex plans and spend over time.⁶⁵⁸ These requirements would include an obligation to respond in full, and in a clear and timely manner, to Home Office, user and CMA queries and requests for further clarification and substantiation with respect to the information provided.
- (f) Specify reporting and assurance requirements.

8.45 Our provisional assessment of the revenue allowances that should be provided for under the proposed charge control is summarised in Table 8.1, and the basis upon which this provisional assessment was made is set out in Appendix K. The figures in Table 8.1 include opex allowances that are in 2021 prices, and that would – on the basis of our proposed approach – be adjusted each year to reflect movements in the CPIH inflation measure.⁶⁵⁹

8.46 We note that when this CPIH indexation is taken into account, the introduction of the proposed charge control would be expected to result in Airwave Solutions' allowed revenue in 2023 being around £225 million,⁶⁶⁰ which is around £[X]

⁶⁵⁶ The proposed indexation arrangements are set out in Appendix K.

⁶⁵⁷ The proposed charge control would include a specified basis for determining what adjustments should be made to overall revenue allowances in subsequent years in order to implement the outcome of this cost sharing mechanism.

⁶⁵⁸ Further detail on these proposed information requirements is set out in Appendix K.

⁶⁵⁹ Our provisional assessment of appropriate indexation arrangements is set out in Appendix K.

⁶⁶⁰ Our estimate of the effect of applying the proposed CPIH indexation arrangements set out in Appendix K, assuming annual CPIH increases of 8.2% (this being the identified increase in CPIH between June 2021 and June 2022: [Consumer price inflation, UK - Office for National Statistics](#)).

million ($[>40] [\times]\%$)⁶⁶¹ lower than the level forecast by Motorola for that year for the services included with the scope of the proposed charge control (which was around £ $[\times]$ million).⁶⁶²

Table 8.1: Provisional view of revenue allowances under the proposed charge control (subject to indexation arrangements)⁶⁶³

| | £million | | | | | | |
|-----------------|----------|------|------|------|------|------|------|
| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Allowed revenue | 199 | 197 | 196 | 194 | 192 | 189 | 187 |

Source: CMA analysis

Notes: The Opex component of the allowed revenue figures shown in the table is in 2021 CPIH prices. The depreciation and return on capital components of the allowed revenue figures to be updated in line with CPIH indexation of the Regulatory Asset Base from the beginning of 2023.⁶⁶⁴

The proposed recommendation remedy

- 8.47 Our charge control remedy would not address at source the AEC we have provisionally found to arise from Airwave's Solutions' / Motorola's unilateral market power and the other features we have identified. As set out in paragraphs 8.114 to 8.116, our provisional assessment is that, given the nature of the market and the current circumstances, our remedy-making powers do not enable us to do that.
- 8.48 A charge control is, we provisionally conclude, the effective remedial mechanism available to us to mitigate the detrimental effects of the AEC we provisionally find. Such a remedy can be time constrained rather than permanent, and allow for an enduring solution to be put in place by the end of the period for which it is set.⁶⁶⁵ In this case, we are minded to regard a charge control in place until the end of 2029 as effective and proportionate on the basis of the evidence before us, subject to a review in 2026. Such a time period would, in our provisional view, give the Home Office the opportunity to put in place alternative arrangements to ensure that the supply of communications network services for public safety is subject to competitive pricing, or measures to similar effect.
- 8.49 In forming that view, we have taken into account that the Home Office is the key customer in the relevant market and the government department responsible for procuring the replacement network and / or establishing the arrangements under

⁶⁶¹ We note that the size of this reduction exceeds the estimate of supernormal profits identified in our profitability analysis, because that analysis adopted a more conservative approach to the assessment of opex requirements (including, for example, in its use of Airwave Solutions' indexation assumptions), and assumed that relevant capex would be recovered within the 2020-2026 period.

⁶⁶² Revenue forecast calculated by deducting forecast revenues for PRONTO, CCCRS and Ambulance Bundle 2 from Motorola's forecast of Airwave Solutions' 2023 turnover (based on Motorola response to Q20 of CMA RFI dated 16 December 2021).

⁶⁶³ A breakdown of how these proposed revenue allowances have been arrived at, and of proposed indexation arrangements, is provided in Appendix K.

⁶⁶⁴ The proposed indexation arrangements are set out in Appendix K.

⁶⁶⁵ [CMA3](#), paragraph 4.20(c).

which a relevant network is provided. It should be in a position in the longer term to resolve the AEC we have provisionally identified (for example, by ensuring that an alternative communications network is put in place), or to safeguard against the risk of anti-competitive outcomes arising by taking other measures available to it over this timescale (for example, putting in place a regulatory function). Setting a charge control until 2029 would reflect the period over which we have financial data to inform our assessment and takes account of the evidence we have heard relating to the possible timetable for the replacement of the Airwave Network. It would also give the Home Office the opportunity to make and execute an effective plan, including the appropriate resourcing and programme management processes.

- 8.50 Accordingly, alongside the charge control remedy, we have provisionally concluded that we should make a recommendation to the Home Office that it should, as soon as possible, implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029. At that time our charge control remedy would cease to have effect.

The interworking remedy

- 8.51 An interworking remedy would require Airwave Solutions and Motorola to take steps related to the development, delivery and use of an alternative interworking solution, if requested to do so by the Home Office.

Parties' submissions

Motorola views

- 8.52 As we noted in paragraph 5.124, Motorola told us that it is (via Airwave Solutions) [X], and that it is committed to providing the required interfaces and updates to Airwave Network infrastructure to enable this. As noted in paragraph 5.118, Motorola told us that a (proprietary) interworking solution had been successfully delivered to facilitate the switch to ESN.

Home Office views

- 8.53 The Home Office told us that it wanted there to be a public (instead of the current, proprietary Motorola) interworking interface so that other suppliers could 'plug in' (such that the market could be opened up).⁶⁶⁶ The Home Office said that to enable effective competition and the effective transition of users from the Airwave

⁶⁶⁶ Home Office Hearing with the CMA on 2 March 2022.

Network to ESN, an interworking remedy should be introduced which included the following obligations being put on Motorola and/or Airwave Solutions:⁶⁶⁷

- (a) To negotiate and provide an interworking solution to an access seeker (which may include the Home Office) on reasonable request, within a reasonable period of time (and in any event no longer than a defined number of months that the CMA considered appropriate), on: (i) fair, reasonable and non-discriminatory terms; or (ii) on such terms as the CMA directs from time to time.
- (b) To provide or publish, upon reasonable request by an access seeker, and within a reasonable period of time, such information as may be reasonably required to enable that access seeker to make a request for and negotiate interworking, interconnection and network access. The Home Office said that this should include the provision of all such information in relation to interworking, interconnection and network access as provided by Airwave Solutions to Motorola and/or Kodiak, including the technical specification of the Airwave Network to Kodiak interworking solution.
- (c) To not unduly discriminate against any access seeker in relation to the provision of interworking, interconnection and network access (including by reference to relevant activities carried out by Motorola).
- (d) To provide such associated facilities and services as may be required to ensure or support the delivery of an effective interworking solution.

8.54 The Home Office said we should consider the extent to which specific and detailed interworking remedies or directions were required covering issues such as: (i) the provision of high level and detailed designs; (ii) deliverables, milestones and statements of work; (iii) security; (iv) data sharing; (v) outline and detailed implementation plans; and (vi) testing, verification and acceptance.⁶⁶⁸

EE views

8.55 EE said that, at a minimum, the introduction of an effective interworking remedy was critical to ensure that Kodiak or any other MCPTT application could be adopted for ESN.⁶⁶⁹ EE said it believed that interworking services would require careful definition to ensure they enabled interworking access from the Airwave Network to the ESN solution, unfettered by technical, commercial, security, operational or other limitations, and without delay.⁶⁷⁰

⁶⁶⁷ [Home Office submission on interworking, 29 April 2022](#), paragraph 22.

⁶⁶⁸ [Home Office submission on interworking, 29 April 2022](#), paragraph 23.

⁶⁶⁹ [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

⁶⁷⁰ [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

8.56 EE also said that in broad principle it endorsed the Home Office's interworking submission (as published with redactions) dated 29 April 2022.⁶⁷¹ EE said that for Motorola to withdraw from ESN without material cost and delay, continued provision of Kodiak would need to be required on a 'deconflicted' basis.⁶⁷² EE submitted that this could only be achieved by a remedy that the Kodiak software source code be provided to the ESN programme along with all appropriate documentation and knowledge transfer, so that the programme could continue to develop a separate code branch to deliver the software required to make ESN successful.⁶⁷³ EE said that this type of arrangement is routinely envisaged when escrow agreements are made with software providers.⁶⁷⁴

Provisional assessment of issues raised in the parties' submissions

- 8.57 We note Motorola's submission that it is subject to an existing contractual obligation to facilitate a standards-based interworking solution between the Airwave Network and any alternative third party MCPTT application that the Home Office chooses in place of Kodiak.
- 8.58 As summarised in paragraph 5.134, we have provisionally concluded that if Kodiak is to be replaced with an alternative MCPTT application, an alternative interworking solution is required for the transition to ESN and that the Home Office is dependent on Airwave Solutions', and potentially Motorola's, cooperation for the provision of such a solution.
- 8.59 In paragraph 5.132 we note that, while Airwave Solutions / Motorola are obliged to facilitate the development of an alternative interworking solution if required to do so by the Home Office, the terms of this (including the price and timing) are not contractually specified. Our provisional assessment is that this commitment would therefore be difficult if not impossible to enforce without a mechanism to determine any matters not already agreed between the parties (such as a binding arbitration mechanism).⁶⁷⁵
- 8.60 As a result, key parameters are dependent on Airwave Solutions' / Motorola's incentives to deliver or facilitate an alternative interworking solution, which we have provisionally found to be dulled by Motorola's position as the owner of Airwave Solutions (see paragraphs 5.136 to 5.139).
- 8.61 We note that the Home Office said we should consider the extent to which specific and detailed interworking remedies or directions were required, including project

⁶⁷¹ [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

⁶⁷² [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

⁶⁷³ [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

⁶⁷⁴ [EE response to Potential Remedies working paper](#), 30 May 2022, page 2.

⁶⁷⁵ Scope for arbitration of disputes (by the regulator) is used to make this type of remedy effective in the regulation of electronic communications, for example.

milestones and detailed implementation plans.⁶⁷⁶ Our provisional view is that the development of detailed interworking directions related to these kinds of specific matters would not be likely to provide for an effective remedy. We do not consider that we would be well placed to specify directions in relation to these kinds of detailed requirements, particularly in a context where we understand the specific form of alternative interworking solution that the Home Office may want remains, as yet, not settled.

8.62 We also note the set of interworking obligations proposed by the Home Office, and EE's endorsement of the Home Office's interworking submission (as redacted) in broad principle. We consider these obligations to be concerned with two related issues:

- (a) Reliance on Motorola for the timely and effective delivery of an alternative interworking solution; and
- (b) the level of charges that Motorola should be allowed to apply for the provision of services relevant to the delivery and use of such an interworking solution.

8.63 Our provisional view is that the first of these issues would be best addressed through the introduction of an obligation on Airwave Solutions and Motorola to deliver, and/or facilitate the development and delivery of, an alternative interworking solution in a timely and effective manner, and in line with requirements identified by the Home Office, if requested to do so by it. This obligation would focus attention on the primary outcome that would need to be achieved – the delivery of such an interworking solution, in a timely manner, in the form identified as required by the Home Office.

8.64 The specification of the obligation recognises that Airwave Solutions' and Motorola's role in that process would vary, depending on the extent to which the Home Office had contracted with other parties to deliver the alternative solution, such that Airwave Solutions and Motorola would need to provide the access and support necessary for the development of the solution by one or more other party, rather than having primary responsibility for that development. We set out further provisional views on how this obligation should be interpreted in paragraphs 8.70 to 8.73.

8.65 Considering also the second issue in paragraph 8.62, we note that the Home Office proposed the introduction of a 'fair, reasonable and non-discriminatory' (FRAND) terms requirement in relation to the provision of an alternative interworking solution. We have assessed the possible effectiveness and proportionality of such a requirement in this market.

⁶⁷⁶ See paragraph 8.54.

- 8.66 As to effectiveness, we observe that FRAND requirements are imposed on regulated entities in some sectors, such as telecommunications, where there is a statutory regulator in place to play a backstop enforcement role. Our provisional assessment is that the broadly defined nature of this form of requirement could make it difficult to interpret in the present context, especially in the absence of such a backstop regulator. Those points could materially undermine the likely effectiveness of adopting such an approach in this case.
- 8.67 With regard to the proportionality of a broad FRAND requirement to the outcome that needed to be achieved, our provisional view is that in this case a more narrowly defined obligation, requiring Airwave Solutions and Motorola to provide the services associated with the development and use of an alternative interworking solution on a cost-plus basis, would suffice. The measure could specify how that requirement should be interpreted by reference to the proposed charge control (and we set out further provisional views on how this requirement should be interpreted in paragraph 8.74).
- 8.68 Our further provisional view is that the sorts of additional requirements proposed by EE (including in relation to the Kodiak software source code), go beyond what would be required to provide an effective remedy to the AEC we have provisionally identified.

The proposed interworking remedy

- 8.69 The interworking remedy we propose has two parts:
- (a) An obligation on Airwave Solutions and Motorola to deliver, and/or facilitate the development and delivery of, an alternative interworking solution in a timely and effective manner, and in line with requirements identified by the Home Office, if requested to do so by it; and
 - (b) a requirement to provide the services involved in the development and use of the alternative interworking solution on a cost-plus basis.
- 8.70 The proposed obligation in the first part of the remedy would cover both the delivery of an alternative interworking solution by Airwave Solutions and Motorola, and circumstances in which the alternative interworking solution was to be developed – in whole or in part – by a third party, with the relevance of these circumstances depending on the requirements identified by the Home Office. The second part would cover the price Airwave Solutions and Motorola could charge in either case.
- 8.71 We invite views on how ‘timely’ and ‘effective’ should be interpreted in the context of the first part of our proposal:

- (a) 'Timely' could be defined as meaning, for example, that the alternative interworking solution was in place such as to enable the switch to ESN, but could also be defined in a way that included a specific time period within which an alternative interworking solution should be delivered following a Home Office request. We seek comments on the appropriateness of specifying a time period within which an alternative interworking solution should be delivered, and on what an appropriate time period might be.
- (b) We note that 'effective' could be defined by reference to the desired outcome (for example, as meaning that the alternative interworking solution should deliver the function of connecting the Airwave Network and ESN and enabling the transition between networks). The definition of the term could also, however, include some more specific provisions.

8.72 Our provisional view is that the obligation should be treated as obliging Airwave Solutions and Motorola to take all steps necessary to facilitate the delivery of a solution, including deploying resources, making key personnel available, and incurring costs associated with the provision (or facilitating the provision) of the solution, within such timetable as the Home Office reasonably requests. The reasonableness of such a request could take into account the timing required to enable the switch from the Airwave Network to the replacement network and the nature and complexity of the required solution.

8.73 If the solution were to be provided by a third party, our provisional assessment is that the obligation should require Airwave Solutions and Motorola to cooperate with that party as necessary regarding the relevant interfaces and connectivity within the same timetable. For example, by making key personnel available and/or through the sharing of information (including through non-disclosure agreements (on reasonable terms) if necessary). Our provisional view is that the obligation would be unlikely to be satisfied if they did not take necessary steps because, for example, they chose not to incur the associated costs, or did not share required information (eg source code) under a non-disclosure agreement if required.

8.74 As to the proposed requirement to provide the services associated with the development and use of the alternative interworking solution on a cost-plus basis, our provisional view is that it should be interpreted in line with the following:

- (a) The Airwave Solutions and / or Motorola costs identified as associated with the development, delivery and/or use of an alternative interworking solution, should only cover activities and cost items that are incremental to those required for the provision of services covered by the proposed charge control described in paragraphs 8.43 to 8.46 above (including the existing, proprietary interworking solution).

- (b) Where services and/or equipment are sourced from other parts of Motorola, the associated charges (that are identified as costs of providing relevant interworking services) should be consistent with those that would be expected in arms-length transactions, and should be consistent with the provisional transfer charging assessments set out in Appendix H.
- (c) The return on capital assumed when the costs of interworking services are being assessed should be consistent with that used in the proposed charge control described above: that is, a CPIH deflated pre-tax return of 2.9%.

8.75 Our further provisional view is that, to assure compliance with the interworking remedy, Airwave Solutions and Motorola should be subject to the following reporting requirements (to the extent that they have provided services related to the development, delivery or use of an alternative interworking solution, having been requested to do so by the Home Office). In particular, requirements to provide an annual report including:

- (a) Details of any request received from the Home Office in relation to an alternative interworking solution, the actions they have taken or propose to take to ensure the timely and effective delivery of related services and a timeline of such actions.
- (b) The revenue they earned from the provision of relevant interworking services, with a breakdown showing the charges that were applied to the provision of all different relevant services, and the revenues associated with those different services.
- (c) Details of how the charges that were applied to the provision of the services identified under (b) were determined, showing a breakdown of how the determination of charge levels was consistent with the requirement to apply a cost plus approach. This should include the identification for each relevant charge of:
 - (i) The provision made for:
 - Opex
 - Deprecation
 - Return on capital
 - (ii) Details of the assumptions and calculations that underpinned the determination of those allowances.
- (d) Details of how the charge level calculations provided under (c) are consistent with the provisions set out in paragraph 8.74 (in relation to the inclusion of only incremental costs, consistency with the transfer charging approaches

used in the determination of the proposed charge control, and application of the allowed return used in the proposed charge controls), and of the steps that were taken to ensure such consistency.

- 8.76 We invite views on whether the cost-plus and reporting requirements set out above would be appropriate, and if not, on what requirements – and what alternative or additional guidance and/or constraints – it would be appropriate to introduce in support of the proposed interworking remedy.

Remedies we do not propose to take forward

- 8.77 This sub-section provides our assessment of remedy options that we are not proposing to take forward and explains the reasoning that underpins these provisional decisions.

Other remedies proposed by the parties

Divestiture of the Command Central Control Room Solution (CCCRS)

- 8.78 In its response to our potential remedies working paper, the Home Office said it believes that Motorola is [X] control rooms, and that this could potentially be addressed through Motorola being required to divest its CCCRS and associated businesses.⁶⁷⁷ Motorola said it has committed to enhancing its control room solution product to include ESN functionality, through direct contracts with user organisations, as opposed to with [X].⁶⁷⁸ EE said that we should consider how the timely development of control room software could be guaranteed, to ensure that there is not a barrier to user organisations adopting ESN.⁶⁷⁹ We invite further views, and evidence, on the extent to which Motorola has the ability and incentive to delay necessary control room upgrades, and will consider the need for any additional potential remedy options in the light of responses.

⁶⁷⁷ [Home Office submission and response to CMA Working Papers](#), 24 May 2022, paragraph 225.

⁶⁷⁸ Motorola's responses to the Home Office's responses to the CMA Working Papers, 4 July 2022, page 4.

⁶⁷⁹ [EE response to Potential Remedies working paper](#), 30 May 2022, page 3.

Other remedies that we do not propose to take forward

Structural separation

Parties' submissions

Motorola views

- 8.79 Motorola said that it owned Airwave Solutions but was merely one of a number of current suppliers to ESN, so the proportionate response to any hypothetical concern surrounding participation in both ESN and the Airwave Network would be to require cessation of participation in ESN.⁶⁸⁰ Motorola said that such a remedy [REDACTED].⁶⁸¹
- 8.80 Motorola also said that a divestiture process would inevitably take significant time to carry out, and would be 'hugely distracting' and apt to cause disruption during the Airwave Network's final years of operation, even if a willing buyer could be found, given the expected short life and attendant regulatory uncertainty.⁶⁸²
- 8.81 Motorola further submitted that it seemed obvious that structural separation would not address any hypothetical concern with prices charged by Airwave Solutions, unless the CMA's view was that, absent Motorola's participation in ESN, the Airwave Network would be switched off more quickly.⁶⁸³ Motorola said that [REDACTED] in any event, which addressed any such hypothetical concern.⁶⁸⁴ It said imposing an Airwave divestiture remedy [REDACTED].⁶⁸⁵
- 8.82 Motorola's most recent submissions have updated its view, stating that it is in discussions with the Home Office [REDACTED]. It said it, '... therefore fully expects to [REDACTED] before the [REDACTED], aside from [REDACTED] as required by the Home Office...' It described the discussions as a [REDACTED] that '...may be expected to [REDACTED] of Motorola.'⁶⁸⁶

Home Office views

- 8.83 The Home Office said that requiring Motorola to divest Airwave Solutions or other activities it carries out related to the roll-out of ESN could provide an effective remedy if an AEC were found in relation to Motorola's ability and incentive to hamper the roll-out of ESN.⁶⁸⁷ However, the Home Office said that before

⁶⁸⁰ Motorola response to the Remedies questions dated 18 February 2022, paragraph 26.

⁶⁸¹ Motorola response to the Remedies questions dated 18 February 2022, paragraph 27.

⁶⁸² Motorola response to the Remedies questions dated 18 February 2022, paragraph 27.

⁶⁸³ Motorola response to the Remedies questions dated 18 February 2022, paragraph 33.

⁶⁸⁴ Motorola response to the Remedies questions dated 18 February 2022, paragraph 33.

⁶⁸⁵ Motorola response to the Remedies questions dated 18 February 2022, paragraph 34.

⁶⁸⁶ Motorola ESN and Airwave Update, 7 September 2022.

⁶⁸⁷ [Home Office submission and response to CMA Working Papers](#), 24 May 2022, paragraph 222.

imposing a remedy that required Motorola to divest Airwave Solutions, it would encourage the CMA to investigate and consider potential risks that may arise as a result of such divestiture, and in particular any risks that may erode or diminish the quality of service provided by the Airwave Network.⁶⁸⁸

EE views

- 8.84 EE said that it seemed reasonable to suppose that Motorola would not propose the divestment of its contribution to ESN if the benefits of ESN outweighed its interests in prolonging the operation of the Airwave Network subject to a charge control, and yet Motorola has raised the possibility of ESN divestment.⁶⁸⁹ EE also said that some form of ESN divestment remedy is necessary and that it should be designed in a way which provides for interworking and delivers ESN as soon and as effectively as possible.⁶⁹⁰

Provisional assessment

- 8.85 We have considered the potential for a structural remedy to address the AEC we have provisionally found, in a context where – as the period over which the Airwave Network will operate remains uncertain – there is a risk that any behavioural remedy that was put in place may need to endure for a significant period. However, for the reasons set out below, we have not identified a structural remedy that would effectively address the AEC we have provisionally found in a proportionate manner.

Requiring a divestiture of Airwave Solutions

- 8.86 Requiring Motorola to divest Airwave Solutions would not be expected – in and of itself – to provide an effective means of addressing the unilateral market power of Airwave Solutions (and that of Motorola as its owner). Rather, divestiture might be expected to displace rather than solve the problem, with the acquirer of the Airwave Network having market power just as Airwave Solutions and Motorola do. A number of the features of the market that we provisionally identify would still exist, such as the Home Office's reliance on the provision of a critical network by a single provider. Such divestiture could also crystallise the financial benefit associated with that market power in the sale price. Accordingly, our provisional view is that this measure would not result in an effective solution to the AEC we have provisionally identified or the detriment resulting from it.
- 8.87 We observe that requiring a divestiture of Airwave Solutions *would* be expected to remove Motorola's incentive to delay or hamper the roll-out of ESN, by removing

⁶⁸⁸ [Home Office submission and response to CMA Working Papers](#), 24 May 2022, paragraph 223.

⁶⁸⁹ [EE response to Potential Remedies working paper](#), 30 May 2022, page 1.

⁶⁹⁰ [EE response to Potential Remedies working paper](#), 30 May 2022, page 1.

Motorola's dual role ([§<]). The remedy would therefore address this feature of the market at source (but not any of the others that individually or in combination give rise to the AEC we have provisionally identified in this report).

8.88 We have considered whether it would be proportionate to require the divestiture of Airwave Solutions within our package of remedies to address (just) the dual role feature at source. We note in particular, however, that:

- The introduction of a charge control could be expected to dampen incentives to delay associated with Motorola's dual role to a material degree. A divestiture of Airwave Solutions is therefore unlikely to be necessary to achieve that aim.
- As highlighted further in paragraph 8.93, there may be material transition risks associated with requiring a change in the ownership of the Airwave Solutions. Those include that the performance of an alternative owner may be subject to material ongoing dependencies on Motorola. They would be liable to cause disadvantages that may be disproportionate to the aim of dampening Motorola's incentives (especially where those may be addressed by means of a charge control).

8.89 Our provisional view therefore, taking all these factors into account, is that including a requirement for the divestiture of Airwave Solutions, in addition to the package of remedies we have provisionally identified, would not be effective and proportionate.

Enabling competition to operate and maintain the Airwave Network

8.90 As we describe in section 4, the PFI Agreement includes service transfer arrangements which contemplated the handover of the responsibility for the provision of network services from Airwave Solutions to the Home Office, the individual customers or to a replacement contractor or contractors in the event of the termination or expiry of that agreement. In principle, this kind of service transfer arrangement could be used to support the introduction of a new competitive process to determine the terms upon which services would continue to be provided using the existing network infrastructure after a defined future date.

8.91 An alternative form of structural remedy could involve specifying obligations in relation to the transfer process (including the basis upon which Motorola would be compensated should transfer be required),⁶⁹¹ in order to enable such a new competitive process to take place. However, for the reasons set out below, our provisional view is that taking actions aimed at enabling this kind of new

⁶⁹¹ Asset valuation issues are considered in Appendix K.

competitive process would not provide an effective remedy to the AEC we have provisionally identified.

8.92 The effectiveness of any such remedy in the present circumstances would be heavily dependent on both the likely attractiveness to the Home Office of seeking to use such transfer arrangements, and the likely intensity of competition that might be expected if the Home Office were to seek bids from alternative potential operators of the Airwave Network at this late stage in its life and with the replacement network on the horizon. Our provisional judgement is that both of these factors make it unlikely that efforts now to facilitate competition to operate the Airwave Network would provide an effective remedy to the AEC we have provisionally identified.

8.93 In forming that view we note, in particular, that:

- (a) There may be significant perceived technical and operational risks associated with a process of transferring Airwave Network services to a new operator. This could be expected to provide material incumbency advantages in any relevant competitive process. We observe that the Home Office told us it had considered the possibility of taking control of the Airwave Network assets at various relatively late stages in the original fixed period of the PFI Agreement (including in 2014 and 2018; and it also considered doing so in 2021), but that on each occasion the option was discarded because it was considered that the likely costs and risks to the continuity and security of mission-critical services far outweighed any benefits that might have been secured.⁶⁹² The Home Office said that the cost and risk factors it took into account included, among other things, people retention and availability of necessary expertise, continued dependency on Motorola, and the life-cycle of the TETRA technology.⁶⁹³
- (b) The effectiveness of competitive pressure from alternative potential operators would be heavily dependent on their ability to make credible financial commitments concerning the basis upon which services would continue to be provided. However, a potential competitor is likely to be at a material informational disadvantage (relative to Airwave Solutions / Motorola) in relation to both the current condition of the network, and the risks associated with alternative potential capex programmes (which would be expected to depend in part on compatibility with existing network conditions).
- (c) The performance of an alternative operator may be subject to material ongoing dependencies in relation to Motorola, both because of the risks that may be associated with the transition process of moving to a new operator,

⁶⁹² Home Office response to the Service Transfer Plan questions dated 18 May 2022, paragraph 28.

⁶⁹³ Home Office response to the Service Transfer Plan questions dated 18 May 2022, paragraph 28.

and because of the extent to which the Airwave Network currently makes use of Motorola-sourced inputs.

- 8.94 Uncertainty over the time period for which a new operator might be required to manage the Airwave Network is a highly relevant factor in this context. There is uncertain, but likely limited, scope for an alternative operator to be able to recoup the investments that may be required to overcome the incumbency advantages liable to stem from the points highlighted in the previous paragraph.
- 8.95 Our provisional view therefore is that requiring changes to the service transfer arrangements, in order to provide for competition to operate the Airwave Network, would be unlikely in the current circumstances to provide an effective remedy to the AEC we have provisionally found.

Requiring divestiture or prohibition of Motorola's interests in ESN

- 8.96 An alternative potential structural remedy would be to require the divestiture of Motorola's interests in ESN. This would directly remove Motorola's ability to prolong the operation of the Airwave Network as a result of its dual role. That is, it would address the dual role feature at source.
- 8.97 An important contextual factor here is that the contractual arrangements through which Motorola provides ESN services end in 2024 (although it has indicated its intention to terminate them earlier). This raises the question of whether Motorola should be permitted to provide ESN services after that point in time. A remedy could prohibit Motorola from bidding for a new contract relating to ESN beyond 2024, as well as requiring Motorola to cease its role in ESN ahead of that time (noting that, notwithstanding its stated intentions, Motorola remains under contractual obligations with regard to ESN for the time being).
- 8.98 Our provisional view is that neither of these remedy possibilities would be an effective and proportionate response for us to impose to address the AEC we have provisionally identified.
- 8.99 With regard to the possibility of requiring Motorola to cease providing ESN services ahead of the end of the existing contractual period in 2024, we note that, in the period before contract expiry, the introduction of a charge control could be expected to reduce incentives associated with Motorola's dual role. Also, we note that one effect of introducing an expedited divestment requirement would be to lessen the lead time available to the Home Office to seek to develop effective arrangements for the tendering of ESN service provision contracts beyond

2024.⁶⁹⁴ These assessments affect the likely proportionality of this remedy in particular.

- 8.100 With respect to a prohibition on Motorola bidding for a new contract beyond 2024, we note the following:
- (a) If there were a limited number of credible bidders to deliver the services currently covered by Motorola's ESN contracts beyond 2024, then prohibiting Motorola from participating in relevant tenders might diminish the Home Office's ability to run an effective tender.
 - (b) If the Home Office was able to secure other competitive bids for the relevant services, then a prohibition on Motorola's participation would not be expected to have any positive material effect (in a context where Motorola's presence in the bidding process could add to the competitive intensity and the Home Office could take risks related to Motorola having an ongoing dual role into account in relevant evaluation processes).
 - (c) If Motorola was not intending to bid for the ongoing provision of ESN services (which, as noted in paragraph 8.82, is Motorola's current stated position), then the prohibition would have no effect.
- 8.101 Given these issues, our prohibiting Motorola from participating in tenders to provide ESN services beyond 2024 would, at best, be likely to have a neutral effect on competition for the provision of ESN services, and may have an adverse effect by removing Motorola as a potential competitor for these tenders without otherwise increasing competitive pressure. In other words, this would be unlikely to be an effective remedy for us to impose.⁶⁹⁵

Information transparency requirements (as a separate, stand-alone remedy)

- 8.102 As set out in Appendix K, as part of specifying the charge control, we have proposed requirements on Motorola to provide information in order to support the effective operation of that remedy. We have separately also considered whether introducing broader transparency requirements would be sufficient in itself to remedy the AEC we provisionally find and the resulting customer detriment.

⁶⁹⁴ We also note that in any event, according to its latest submission, Motorola 'fully expects' to have [3<].

⁶⁹⁵ We also note, furthermore, that if the Home Office found that it had no feasible options other than to continue to secure some relevant ESN services from Motorola beyond 2024, then prohibiting Motorola from taking part in ESN may not be sustainable (ie if introduced, it is likely it would then need to be varied to reflect the constraints the Home Office faced).

Parties' submissions

Motorola views

- 8.103 In relation to the period up to 2026, Motorola submitted that a financial transparency remedy would be irrelevant (and therefore irrational) as Airwave Solutions' prices had already been set (and so detailed cost information was not required for the performance of the contract).⁶⁹⁶ Motorola said that if the current Airwave Network service price were set aside to facilitate a further negotiation in light of financial transparency, it was not clear how there would be any benefit over the existing benchmarking arrangements.⁶⁹⁷ Motorola also said that a financial transparency remedy would not be required if the CMA were to reset the price, but noted that detailed information may need to be collected and evaluated by whoever would be responsible for setting a revised price.⁶⁹⁸
- 8.104 Motorola additionally said that there may be a natural evolution to other forms of contracting in the period after 2026, given current UK contracting principles, and that it would welcome a discussion of what might be a proportionate financial transparency remedy in those circumstances.⁶⁹⁹ Motorola submitted that a model like the US Government contracting model might in principle be an appropriate solution for any future contract, recognising, however, that the required cost accounting imposes an additional burden on suppliers.⁷⁰⁰

Home Office views

- 8.105 The Home Office said that while information transparency requirements might enable it to negotiate on the basis of some additional knowledge, it considered that the benefits associated with this would be marginal.⁷⁰¹ It said that information transparency remedies – viewed on a stand-alone basis – would not provide an effective means of addressing the harm caused by AECs, but that information transparency would be required to support a charge control.⁷⁰² In relation to a charge control, the Home Office said it would be desirable for a requirement for transparency to be introduced that went 'well beyond' the current arrangements.⁷⁰³

⁶⁹⁶ Motorola response to the Remedies questions dated 18 February 2022, paragraph 19.

⁶⁹⁷ Motorola response to the Remedies questions dated 18 February 2022, paragraph 20.

⁶⁹⁸ Motorola response to the Remedies questions dated 18 February 2022, paragraph 19.

⁶⁹⁹ Motorola response to the Remedies questions dated 18 February 2022, paragraph 21.

⁷⁰⁰ Motorola also stated that, as the US Government Accountability Office (GAO) website noted, there had been concerns from Congress and others that the burden imposed on suppliers may deter companies from competing for federal contracts and that, to work efficiently, such a contractual arrangement must prevent continuous discussions about whether specific cost components are justified and whether costs are correctly measured; in Motorola's view, such ongoing discussions are characteristic of how the Home Office dealt with the ESN contract and were to a large extent responsible for the delays of the programme (Motorola response to the Remedies questions dated 18 February 2022, paragraph 24).

⁷⁰¹ Home Office submission and response to CMA Working Papers, 24 May 2022, paragraph 220.

⁷⁰² Home Office submission and response to CMA Working Papers, 24 May 2022, paragraph 220.

⁷⁰³ Home Office Hearing with the CMA on 2 March 2022.

It told us that transparency was important to provide assurance that network capabilities were being preserved, and that Airwave Solutions was actually spending the capex required to sustain the network.⁷⁰⁴

Provisional assessment

- 8.106 Our provisional view is that broader information transparency remedies – when viewed on a stand-alone basis – would not provide an effective means of addressing the AEC we have provisionally found. In particular, while information transparency requirements may facilitate some degree of improvement in outcomes by better equipping the Home Office to seek more competitive prices in future negotiations, they would only be expected to materially address one of the features (asymmetry of information) we provisionally find give rise to an AEC in the market. The other features we have identified would continue to exist, including the Home Office’s very weak bargaining power resulting from its lack of outside options, and the criticality of the Airwave Network to its users. In line with this, our provisional assessment is that standalone transparency requirements would not provide an effective alternative remedy to the introduction of charge control arrangements.
- 8.107 As set out in Appendix K, we propose that an information provision requirement should be introduced in order to support the operation of the charge control arrangements we are minded to impose. Our provisional view is that the introduction of such requirements would be necessary to enable the effective monitoring and ongoing review of the proposed charge control. We set out our provisional assessment of how these requirements could be specified in Appendix K.

Improvements to benchmarking arrangements

- 8.108 We have noted Motorola’s submission that existing benchmarking provisions have been agreed between Airwave Solutions and its customers and that it would be disproportionate to ignore these. As set out in paragraph 4.213, our provisional view is that these provisions are likely to be ineffective in constraining Airwave Solutions’ pricing for Airwave Network services to a level we might expect in a competitive market. Efforts could be made to improve the existing arrangements. However, in line with our assessment in section 4, which observes that the arrangements are subject to inherent weaknesses such as the difficulties associated with identifying appropriate comparators, our provisional view is that the use of a benchmarking approach would not provide an effective remedy to the AEC we have provisionally identified.

⁷⁰⁴ Home Office Hearing with the CMA on 2 March 2022.

Other potential remedies

- 8.109 We have not identified any other available types of remedy that we would expect to be effective.

Effectiveness and proportionality of our proposed remedies package

- 8.110 This sub-section considers the effectiveness and proportionality of our proposed remedies: the introduction of a charge control, of a recommendation to the Home Office and of an interworking remedy. We begin by making some preliminary observations. These draw on some elements of the analysis in the paragraphs above and they inform our specific assessment of the proposed remedies. We then set out that specific assessment.

Preliminary observations

- 8.111 The purpose of any remedies we propose is to address the problem we have provisionally identified – to remedy, mitigate or prevent the AEC or its detrimental effects on customers. The assessment of their effectiveness and proportionality is designed to help us identify interventions that are likely to:
- (a) Achieve that effect; and
 - (b) do no more than is required to achieve it.
- 8.112 We use the framework we described in paragraphs 8.8 to 8.20 above to assist us in making our assessment.
- 8.113 The nature of the services and the features of the market, and the nature and size of any competition problem and its detrimental effects, that we provisionally find are key considerations in our assessment. They shape the remedies we are likely to regard as effective and proportionate.
- 8.114 In this case certain of the features we provisionally identify as giving rise to the AEC are likely, given the nature of the relevant services and of the market, to endure. For example, until ESN, or any alternative network or competitive arrangements, replace the Airwave Network it will continue to be provided by a single supplier and the Home Office will be dependent on it for critical services without alternative options. In that context, and as we describe in paragraphs 8.85 to 8.101 above, remedies aiming to affect the structure of the market and extinguish the AEC, such as the divestiture of Airwave Solutions, are unlikely to be effective in the short term.
- 8.115 Our main focus instead is on remedies that mitigate the detrimental effects of the provisional AEC. In particular, the effects of the market power that we are minded to regard Airwave Solutions / Motorola as having as a result of the features we

identify. Behavioural remedies that limit their ability to charge prices above competitive levels and their ability and incentive to hinder and make more costly the transition between networks given their role in interworking are most likely to be appropriate.

- 8.116 In considering those sorts of remedies, both the nature and the scale of those detrimental effects, and the features that cause them, are important. They draw us, in the first place, to the provisional conclusion that we describe in paragraph 8.106 above, that information transparency remedies alone, for example, would not be effective. Such remedies would not remove the Home Office's dependence on the Airwave Network and its very weak bargaining position resulting from its lack of alternative options. Airwave Solutions / Motorola would still be able to charge prices above competitive levels. Instead, we are drawn to the provisional view that a remedy controlling the outcome – the price charged – would be effective.
- 8.117 As to the form any such remedy may take, we observe that the scale of the detrimental effects that we provisionally identify is vast. Our assessment is that Airwave Solutions is able to set a price very substantially in excess of the competitive level, reflected in its generation of supernormal profits of around £1.1 billion from the operation of the Airwave Network between January 2020 and 31 December 2026 (and of around £160 million) in each year after that). Any supernormal profits generated by making interworking more costly would be additional to this. An effective charge control remedy would, in our provisional assessment, be proportionate where it is correspondingly substantial. That is, where it limits prices to a level we might expect in competitive market and constrains the scope for Airwave Solutions / Motorola to earn these supernormal profits.
- 8.118 An additional consideration is whether a charge control alone would be sufficient to remedy, mitigate or prevent the provisional AEC or its detrimental effects. To the extent that it would not be sufficient, additional remedies would be required to address the shortfall, in order to comprise an effective and proportionate package of remedies, likely to be equal to the matters it seeks to address.
- 8.119 These fundamental points as to the nature and scale of the likely effective remedies run through our assessment of the effectiveness and proportionality of our proposed remedies package. We set out that assessment more specifically, and by reference to the framework we have outlined, below.

Effectiveness

- 8.120 This sub-section considers the effectiveness of our proposed remedies in addressing the features of the provisional AEC and the resulting customer

detriment. In particular, drawing on the framework for assessment described in paragraph 8.12 above, it considers:

- How the proposed remedies would contribute to addressing the provisional AEC and/or the resulting customer detriment;
- implementation, monitoring and enforcement issues;
- the timescales over which the proposed remedies would take and have effect;
- consistency with existing and expected laws and regulations; and
- interactions between the proposed remedies.

How the proposed remedies would contribute to addressing the provisional AEC and the resulting customer detriment

- 8.121 A charge control, which would relate to the provision of Airwave Network services, would not address the underlying cause of the AEC we have provisionally identified, but it would mitigate the customer detriment arising from it. In particular, it would mitigate the detrimental effect on customers of Airwave Solutions pricing above competitive levels. It would do this by directly limiting the amounts that Airwave Solutions is allowed to charge its customers for the services. We set out in Appendix K the specific ways in which we are proposing that the charge control should limit relevant charges. Not imposing that remedy would, in the absence of effective alternatives, mean that the detriment resulting from the provisional AEC would remain unaddressed.
- 8.122 We have additionally provisionally found, as set out in section 5, that Motorola's dual role as the owner of Airwave Solutions and a key supplier to ESN give it both the incentives and the ability to delay the latter's delivery and to prolong the highly profitable monopoly position of Airwave Solutions. We have also provisionally found that Airwave Solutions and Motorola have incentives and ability to delay or hamper and/or make more costly the development of an alternative interworking solution (see section 5).
- 8.123 The introduction of the proposed charge control would be expected to reduce Airwave Solutions' and Motorola's incentives to prolong the operational life of the Airwave Network in two ways. In particular, as set out in Appendix K:
- (a) The proposed charge control would be expected to reduce Airwave Solutions' relevant revenue by around [>40] [$<$] % in 2023 (were it to apply for the full year, and pro-rata if not).

- (b) The proposed charge control has been structured such that Airwave Solutions' ability to recover allowances related to past investments would not be dependent on the time period over which the Airwave Network remains operational,⁷⁰⁵ such that the scope for incremental financial benefit from the Airwave Network continuing to operate beyond the end of 2026 should be further reduced.

- 8.124 Those points made, however, our further provisional view is also that the proposed charge control (relating to the Airwave Network services) would not be sufficient by itself to address fully the incentives Airwave Solutions and Motorola have effectively and efficiently to deliver an alternative interworking solution that works with a replacement MCPTT application, such that the Home Office would be able to replace Motorola's Kodiak application. Also, the scope of the proposed charge control includes only existing Airwave Solutions' services, and so would not address the impact of Airwave Solutions' / Motorola's unilateral market power on the provision of an alternative interworking solution (which, as we note in section 5, appears to require the active cooperation of Airwave Solutions and potentially of Motorola).
- 8.125 The proposed interworking remedy would therefore further mitigate the customer detriment that may be associated with these two features of the provisional AEC by introducing an obligation on Airwave Solutions and Motorola to:
- Deliver, and/or facilitate the delivery of, an alternative interworking solution in a timely and effective manner, if requested to do so by the Home Office; and
 - provide the services associated with the development and use of the alternative interworking solution on a cost-plus basis, in line with criteria that would set out how that should be applied.
- 8.126 Finally, the recommendation to the Home Office – that it should, as soon as possible, implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029 – would also in our provisional assessment help address the AEC and resulting customer detriment. That would address the features of the market relating to the delayed replacement of the Airwave Network by ESN (or any alternative network) and the Home Office's dependence on the Airwave Network and its provision by Airwave Solutions / Motorola which, alone or in combination with the other features identified, give rise to the AEC we have provisionally found.

⁷⁰⁵ As set out in Appendix K, the proposed charge control includes final reconciliation arrangements to provide for recovery of the relevant net asset value.

Implementation, monitoring and enforcement

- 8.127 We have taken into account that remedies should be capable of effective implementation, monitoring and enforcement. Their operation and implications should be clear to those to whom they are directed and to others, such as customers, regulators, and any other body which has responsibility for monitoring compliance. We have also taken into account that behavioural remedies that control outcomes, like charge controls, can require costly and intrusive monitoring and enforcement.
- 8.128 We have considered how issues relating to the implementation, monitoring and enforcement of our proposed charge control, and the possible attendant risks, should be addressed:
- (a) We set out our provisional views on how the proposed charge control should be designed and calibrated in paragraphs 8.43 to 8.46 and in Appendix K, and set out our provisional views on how the proposed interworking remedy should be specified in paragraphs 8.69 to 8.74 above]. The setting of those parameters would make clear what the remedies require and how they are to be complied with.
 - (b) We set out our provisional views on the reporting and assurance requirements to which Airwave Solutions / Motorola should be subject in order to demonstrate compliance with the charge control in Appendix K, and with the interworking remedy in paragraph 8.75 above. These reporting and assurance requirements would provide the basis for monitoring compliance and – where relevant – enforcement.
- 8.129 Our provisional assessment is that the proposed remedies are capable of effective implementation, monitoring and enforcement.

The timescales over which the remedies would take effect

- 8.130 We have also considered when the proposed charge control should come into force and for how long it should apply. We have taken into account that it would have ongoing effects on Airwave Solutions' / Motorola's conduct throughout the period it is in force. We have had regard to: (i) the length of time over which the provisional AEC and resulting customer detriment is expected to persist; (ii) the role the charge control is expected to play in tackling that detriment; (iii) the extent to which the measure is expected to become obsolete over time; and (iv) the appropriateness of setting a sunset date and what any such date should be.
- 8.131 We observe that the duration of an AEC and the resulting customer detriment can be subject to some uncertainty. We also observe, however, amongst other things that, in this case:

- (a) The customer detriment is ongoing and likely to persist until the Airwave Network is replaced by ESN or an alternative network, or until alternative competitive arrangements, or measures to similar effect, replace the current arrangements for its provision; and
- (b) we have evidence, including from the Home Office and financial data from Motorola, which suggests they both consider the end of 2029 as a point to which the Airwave Network may continue to operate.

- 8.132 Our provisional views on how the proposed charge control should be applied, taking account of the points in the previous paragraph, are set out in Appendix K. Our assessment is that the proposed charge control could take effect from the commencement date of any Remedies Order, which we expect to be in the first half of 2023. As set out in Appendix K, our provisional view is that the charge control should terminate at the end of 2029, or earlier if the Airwave Network ceases to be operational prior to that date. It would also be subject to a review in 2026. Those timings would, in our provisional assessment, ensure that an effective remedy is in place for the period it is required.
- 8.133 Such a time period for the charge control would also give the Home Office the opportunity to implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029. Our recommendation to the Home Office would support this. It would serve to mitigate the risk that Airwave Solutions / Motorola will retain unilateral market power beyond 2029 and should result in an enduring means of addressing the AEC we have provisionally found.
- 8.134 Our provisional view is that the same timings should also apply to the proposed interworking remedy, but that the ongoing relevance and need for the different parts of that remedy should be assessed in any review of the charge control in 2026. In particular, we note that while – if requested by the Home Office – the delivery of an alternative interworking solution may be required within the early part of the 2023-29 period, the basis upon which the use of that interworking solution is charged for may continue to be a relevant issue while the Airwave Network remains operational.

Consistency with existing and expected laws and regulations

- 8.135 We have not identified any existing or expected laws or regulations that would be expected to impact on the effectiveness of our proposed remedies.

Interactions between the proposed remedies

8.136 The charge control, interworking and recommendation remedies would, in our provisional judgement, work effectively together. The charge control is the primary remedy aimed at mitigating the customer detriment arising from the provisional AEC. The interworking remedy would further mitigate the provisional AEC, by tackling two specific features that contribute to it and by reducing the incentives and ability of Motorola to prolong the detrimental effects by delaying the introduction of a successor to the Airwave Network. Finally, the recommendation would seek to address Airwave Solution's / Motorola's market power over the longer term by ensuring an effective alternative communications network replaces the Airwave Network, or the current arrangements for the network's provision are replaced with competitive alternative arrangements (or measures to similar effect), by the end of 2029.

Provisional conclusion on effectiveness

8.137 Our provisional view is accordingly that the proposed package of remedies would be effective in achieving their aim of mitigating the customer detriment arising from the provisional AEC. They would also, by way of the recommendation, be effective in addressing the source of market power or its effects in the longer run.

Proportionality

8.138 This sub-section considers the proportionality of our proposed remedies in addressing the provisional AEC and the resulting customer detriment. As set out in paragraph 8.13 above, we consider a proportionate remedy to be one that:

- Is effective in achieving its legitimate aim;
- is no more onerous than needed to achieve its aim;
- is the least onerous if there is a choice between several effective measures; and,
- does not produce disadvantages which are disproportionate to the aim.

8.139 We provide our provisional assessment of our proposed remedies in relation to these criteria below.

Is effective in achieving its legitimate aim

8.140 As described in paragraph 8.115 above, our main focus in this case is in mitigating the detrimental effects of the provisional AEC. We have considered whether our proposed remedies would achieve that.

- 8.141 A key part of mitigating the relevant detrimental effects is limiting Airwave Solutions' ability to price above levels we would expect in a competitive market. In line with the comments in paragraphs 8.120 to 8.137 above, our provisional view is that a charge control can be developed that would be effective in achieving this aim. We have assessed how an appropriate price level might be established, as we explain further in our provisional views on charge control design and calibration in Appendix K, and the proposed charge control would limit the prices that can be charged accordingly.
- 8.142 We contrast the position in the previous paragraph with our provisional assessment of other remedies which would not achieve the same aim, such as standalone information transparency requirements, improvements to benchmarking arrangements or divestiture of Airwave Solutions. For the reasons described in paragraphs 8.85 to 8.101 and 8.106 to 8.108 above, none of these would limit the relevant prices: the first because it would not give the Home Office countervailing buyer power, the second because of the inherent difficulties involved in benchmarking (such as identifying appropriate comparators) and the third because it would simply transfer market power to another supplier (as well as being a more intrusive remedy in that it would require divestiture). In that context, not imposing the charge control would mean that detriment from the provisional AEC would continue.
- 8.143 However, we also provisionally assess that the proposed charge control alone would not be sufficient to mitigate all the relevant detrimental effects. In particular, as set out in paragraph 8.124, while the proposed charge control would be expected to reduce Airwave Solutions' and Motorola's incentives to prolong the operational life of the Airwave Network, it would not itself address fully their incentives and ability in relation to the effective and efficient delivery of an alternative interworking solution.
- 8.144 It is necessary therefore, in our provisional view, to consider other ways to mitigate the effects of the incentives and ability relating to interworking. Our provisional assessment, described in paragraphs 8.57 to 8.76 and 8.125 above, is that the introduction of an obligation on Airwave Solutions and Motorola to deliver, and/or facilitate the delivery of, an alternative interworking solution in a timely and effective manner, if requested to do so by the Home Office, would provide an effective means of meeting that aim.
- 8.145 We also take into account that services associated with the development and use of a new interworking solution are not included within the scope of the proposed charge control, as the costs that may be associated with such a solution (and the characteristics that the solution may have) are currently unclear. Given this, the proposed charge control would also not provide a means of mitigating the effects that Airwave Solutions' / Motorola's unilateral market power may have on the level

of charges, and the associated profitability, for the provision of an alternative interworking solution.

- 8.146 For the reasons set out above, our provisional view is that the introduction of the proposed requirement to provide the services involved in the development and use of an alternative interworking solution – if such a solution is requested by the Home Office – on a cost-plus basis, would be an effective way of mitigating the risk of detrimental effects arising as a result of this feature. It would achieve the legitimate aim of limiting the relevant price to a level we would expect in a competitive market.
- 8.147 As explained in paragraph 8.136, the recommendation to the Home Office is designed to work alongside the charge control remedy. It would help ensure that, in the longer run, Airwave Solutions' / Motorola's market power is addressed either at source (for example, by the introduction of an alternative communications network operating on appropriately competitive terms and in appropriately competitive circumstances), or from the Home Office taking other measures available to it to similar effect (for example, putting in place a regulatory function). That, in our provisional view, is a further legitimate aim and one that would not be achieved by our other proposed remedies alone.

Is no more onerous than needed to achieve its aim

- 8.148 We recognise that charge controls are intrusive remedies that require careful design to ensure their effectiveness and proportionality. We have had regard to a number of considerations in that connection.
- 8.149 We have considered whether less onerous remedies could achieve the same aim. That is, whether less intrusive or burdensome remedies could limit prices to a competitive level. We have provisionally assessed, as we note in paragraphs 8.106 to 8.108, that such remedies, like standalone information transparency measures or improvements to benchmarking arrangements, are unlikely to do so. We also observe that other remedies, like divestiture of either Airwave Solutions or Motorola's interests in ESN, would not address the ability to set prices above the competitive level (see paragraphs 8.85 to 8.101).
- 8.150 Our focus on a charge control is the result of that assessment. As set out above, our provisional view is that a charge control is required to mitigate the detriment to customers that would otherwise be expected to arise as a result of Airwave Solutions' / Motorola's unilateral market power, given the absence of credible alternatives.
- 8.151 In forming our provisional views on the design and calibration of our proposed remedy we have considered the onerousness of different potential approaches (see Appendix K). We note again that Airwave Solutions is able to price

substantially above the competitive level. In Appendix K we explain our provisional assessment of the charge control that would limit prices to a level we might expect in a competitive market. In other words, a charge control that would be equal to the detriment it seeks to mitigate. Our provisional view is that a charge control of the form and magnitude proposed is required to meet that legitimate aim. Different approaches, resulting in smaller reductions of the price level, would not do so.

- 8.152 We have also considered whether the additional remedies we are minded to impose do no more than is necessary to address the detrimental effects of the provisional AEC. Our provisional assessment is that they are no more onerous than is required.
- 8.153 As to the proposed interworking remedy, our provisional view, described in paragraph 8.125, is that the remedy is necessary. Airwave Solutions / Motorola are obliged to develop an alternative interworking solution if required to do so by the Home Office, but the terms on which they must do so (including the price and timing) are not contractually specified, and these key parameters may be affected by their incentives to deliver an alternative solution. The proposed charge control, because of the limits on its scope and effects, would not in our assessment be expected to fully address this issue (as set out in paragraph 8.124) or the impact of Airwave Solutions' / Motorola's unilateral market power on the provision of any such solution).
- 8.154 In developing our proposed interworking remedy we have considered the different ways of addressing the competition concerns (as set out in paragraphs 8.57 to 8.68). We provisionally assess that the remedy would impose obligations necessary, but not going beyond those necessary, to address the shortcomings in the parties' contractual arrangements and to address the relevant incentives and market power.
- 8.155 In making that assessment, we have had regard to the following points:
- (a) We considered the Home Office's proposal for the introduction of a FRAND terms requirement in relation to the provision of an alternative interworking solution. Our provisional view, however, as described in paragraphs 8.66 and 8.67, is that a more narrowly defined set of obligations could address the shortcomings in the parties' existing arrangements and the effects of Airwave Solutions' and Motorola's incentives and market power.
 - (b) We also considered the use of detailed interworking directions related to a number of matters highlighted by the Home Office (such as detailed implementation plans). For the reasons referred to in paragraph 8.61, we have provisionally found that imposing these kinds of additional requirements would be unlikely to result in an effective remedy.

- (c) We have considered whether the aims of the proposed cost-plus requirement in relation to the alternative interworking solution could be achieved in other ways. We have not, however, identified alternative remedy options that would be likely to be effective in limiting the price that may be charged to a level we might expect in competitive circumstances.

8.156 Our further provisional assessment is that, in the longer term, there is scope for the Home Office effectively to mitigate Airwave Solutions' / Motorola's unilateral market power by ensuring that the supply of communications network services for public safety is subject to competitive pricing arrangements or measures to similar effect. We are therefore proposing to limit the duration of the charge control to the period until 2029, and recommending that the Home Office implement a plan to ensure that outcome is achieved by no later than that date. That proposal takes account of the evidence we have seen about the possible timing of the replacement. It would ensure that the charge control remedy is not in place for any longer than is required.

Is the least onerous if there is a choice between several effective measures

8.157 Our provisional view is that, in the circumstances, there are no remedies available to us that would remedy the provisional AEC in its entirety prior to 2029. We are minded to regard a charge control that limits the price charged for the Airwave Network services as the only effective means of mitigating the main customer detriment (prices above the competitive level) liable to result from that AEC over the period to 2029. We note again our provisional assessments of the likely ineffectiveness of remedies: (i) providing for information transparency (see paragraph 8.106); (ii) seeking to improve the existing benchmarking arrangements (see paragraph 8.108); or (iii) involving divestiture (see paragraph 8.85).

8.158 The Home Office, as the key customer of the Airwave Network and the government department responsible for procuring the replacement network, should by 2029 be in a position to address the AEC we have provisionally identified at source (for example, by ensuring that an alternative communications network is put in place), or to safeguard against the risk of anti-competitive outcomes resulting from a continuing monopoly position in the provision of all or part of the Airwave Network by taking other measures available to it (for example, putting in place a regulatory function).

8.159 As far as the proposed interworking remedy is concerned, we have not identified other effective, but less onerous, measures that we could impose.

Does not produce disadvantages which are disproportionate to the aim

8.160 The possible trade-offs that can exist between different aspects of a remedy and the consequences – the benefits and disadvantages – it may produce, are an

important part of our assessment. Having regard to them helps us to make a judgement in the round about the effective and proportionate remedy or package of remedies we should propose.

- 8.161 Our provisional view is that a charge control can be developed and applied that would not produce disadvantages which were disproportionate to its aim. Our assessment in that regard can be summarised as follows.
- 8.162 We have estimated that – absent intervention – Airwave Solutions is able to price the Airwave Network services substantially above the competitive level such that it and its parent company, Motorola, could be expected to have made supernormal profits of around £1.1 billion between the beginning of 2020 and the end of 2026, and around £160 million of supernormal profits annually thereafter if the delivery of ESN is further delayed.⁷⁰⁶ The introduction of a charge control substantially mitigating this detriment could therefore produce correspondingly substantial benefits.
- 8.163 We have weighed potential disadvantages against the substantial benefit the proposed charge control could produce. Our provisional views on charge control design and calibration in Appendix K take account of a range of potential disadvantages that might be associated with specific choices we might make. We note that Motorola's submissions raise the prospect of the introduction of a charge control giving rise to unintended distortions to market outcomes which could adversely affect the economic and safety interests of customers over the longer-term, and we set out our provisional views on those submissions in paragraphs 8.31 to 8.40 (and Appendix K). Our provisional assessment is that the potential disadvantages can be mitigated by the choices we are minded to make in the design and calibration of the proposed remedy.
- 8.164 As to the proposed interworking remedy, we have noted in Section 5 that both Motorola and the Home Office agree on the importance of interworking to emergency services users. An interworking solution is required as part of the transition of users from the Airwave Network onto the replacement network in order to ensure public safety. The availability of appropriate interworking arrangements is therefore necessary to deliver the benefits associated with the transition between networks. Delays to the availability of such arrangements could be expected to result in delays to the securing of benefits from the use of the replacement network.
- 8.165 In that context, our provisional judgement is that the proposed interworking remedy would provide a proportionate means of mitigating the risk that flows from Airwave Solutions' / Motorola's dulled incentives effectively and efficiently to deliver an alternative interworking solution (even with the introduction of the

⁷⁰⁶ See Appendix G.

proposed charge control). We have not identified unintended adverse consequences which would outweigh that benefit.

- 8.166 We have not identified any disadvantages associated with our proposed recommendation that would be disproportionate to its aim of ensuring that the supply of communications network services for public safety is subject to competitive pricing arrangements or measures to similar effect by no later than the end of 2029.

Provisional conclusion on proportionality

- 8.167 In light of the above, our provisional view is that the introduction of a suitably designed and calibrated charge control (as described in Appendix K), combined with a recommendation to the Home Office to implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029, and a targeted remedy to support effective interworking, would provide a proportionate response to the provisional AEC we have found.

Relevant customer benefits

- 8.168 We have not identified, nor has any party suggested to us, any RCBs resulting from the features we have found. Therefore, we have not considered RCBs in designing our remedies package.

Provisional conclusion on remedies

- 8.169 Given the AEC we have provisionally found, our provisional conclusion is that the following package of remedies should be introduced:
- (a) A charge control to mitigate the principal detrimental effect on customers of the AEC we have provisionally identified, namely Airwave Solutions' (and its owner, Motorola's) ability to price above levels we would expect to in a competitive market. This remedy would include information provision requirements to support the operation of the charge control. We set out further detail on our provisional views on how the charge control should be designed and calibrated in Appendix K.
 - (b) A recommendation to the Home Office that it should, as soon as possible, implement a plan to ensure that the supply of communications network services for public safety is subject to competitive pricing arrangements, or measures to similar effect, by not later than the end of 2029.
 - (c) An obligation on Motorola to deliver, and/or facilitate the delivery of, an alternative interworking solution in a timely and effective manner, if requested

to do so by the Home Office. This remedy would include a requirement to provide the services associated with the development and use of the alternative interworking solution on a cost-plus basis, and would set out how that requirement should be interpreted.