

Mobile radio network services

Summary of final report

5 April 2023



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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 Some numbers have been replaced by a range.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.

Summary

Background

1. It is critical that emergency services staff are able to communicate effectively with each other, with staff at base and with other organisations involved in tackling an emergency. That is essential for them to do their job and to protect their safety and that of the general public.
2. 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 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.
5. The Airwave Network was set up under a Public Finance Initiative (PFI) Agreement made with the Police Information Technology Organisation (subsequently replaced by the 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 upgraded network, with enhanced functionality, to replace the Airwave Network, called the Emergency Services Network (ESN). That replacement was originally intended to happen 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 Their aim is to examine whether there is a competition problem (an ‘adverse effect on competition’ or AEC) caused by features of the market and, if so, to consider whether to remedy it and/or its detrimental effects. We can intervene and impose remedies even where no specific law has been broken if we identify an AEC.²
9. In this case, we have 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 final report as the market for ‘the supply of communications network services for public safety.’
10. We have considered how competition can occur in that market. Building a bespoke integrated network of the kind required meant that a single supplier³ would be best placed to meet the emergency services’ needs under long-term contracts. Under such contracts, the supplier could recoup the large upfront investment required to build the network, and have the chance to earn an estimated rate of return, over the life of the contracts.
11. Competitive constraints on suppliers in this market, therefore, typically arise through ‘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 or a retendering of the existing network is competed for).
12. 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:
 - (a) a competitively priced continuation of the operation of the existing network infrastructure (secured, for example, under a retendering process facilitated by the transfer of the assets to the Home Office,⁴ or by 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.
13. We have therefore assessed whether this has occurred and, if not, why not.

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

² [Guidelines](#), paragraph 21.

³ Or a group of suppliers offering a single service.

⁴ Or a third party.

Our findings

14. In our assessment, the terms of the PFI Agreement under which the Airwave Network operates resulted from the type of process – tendering – that we might expect to provide competition for the market. 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.⁵ 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 give it the chance to earn a reasonable return for the period of the contract.
15. The PFI Agreement⁶ that resulted from the original procurement exercise was for a fixed term ending in 2019.⁷ It provided for a contract price designed to recoup the supplier's upfront investment in building the network and offer it the possibility of earning 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). It did not contain terms relating to or contemplating its extension. The relevant provisions were therefore generally the type of terms we might expect to find in a well-functioning market up to 2019 (albeit that they were not all necessarily fully effective in achieving their objectives).
16. The position now that the original period of the PFI Agreement has ended, however, is materially different. Our assessment is that 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.
17. Instead of being set through a competitive process, prices are established (or maintained without significant variation from previous levels) in bilateral negotiations between Airwave Solutions (the monopoly supplier) and its owner, Motorola, and the Home Office⁸ relating to the extension of the PFI Agreement. In those negotiations the Home Office has no credible⁹ alternative option in terms of its choice of supply or supplier.

⁵ Although, as described in later sections of this final report – and in Appendix B– there were some limitations on the extent of the competition that applied and the competitiveness of the outcome, and the National Audit Office reported on these.

⁶ The associated service contracts were also for fixed terms.

⁷ Once all related contract end dates were aligned.

⁸ Acting on behalf of all emergency services.

⁹ We use the term 'credible' to describe options which the Home Office would be in a position in practice to pursue or threaten to pursue, and / or which Motorola would regard as a threat to its ability to set prices, such that the price is likely to be constrained to the competitive level.

18. 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, now the original period of the PFI Agreement has ended:
 - (a) The costs 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;¹⁰ and
 - (b) the risk borne by the supplier is much reduced after 2019 because the network is built and is operating as a reliable income stream.
19. In other words, after 2019 the terms of the (extended) PFI Agreement 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.¹¹
20. Key reasons for the present position, in our assessment, are that:
 - (a) The network for emergency services communications is critical national infrastructure providing services on which lives ultimately depend, so the Home Office and the emergency services users¹² must have continuous and reliable access to a high-quality integrated network that meets their operational needs, without disruption or degradation;
 - (b) the asset transfer provisions in the PFI Agreement have not resulted in the transfer of network assets to the Home Office, Airwave Solutions continues to own them and acquiring them is not an option the Home Office could credibly pursue or threaten; and
 - (c) 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 first negotiated terms that relate to the provision of the Airwave Network after 2019.
21. As a result, the Home Office and the emergency services in Great Britain are 'locked in' to a monopoly provider, Airwave Solutions, and will be in that position until at least 2026, likely until 2029 and possibly longer.
22. Our judgement is that Airwave Solutions and its owner, Motorola, now have considerable market power. In the negotiations between Airwave Solutions and

¹⁰ This remains the case notwithstanding an offer Motorola made to the Home Office in July 2022 to reduce the price and which the Home Office did not accept (see Section 4 of this final report in particular).

¹¹ 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, supernormal profits are the element of profits over and above the normal amount we might expect to be made in a well-functioning market.

¹² As well as the Sharer organisations.

the Home Office relating to the continued provision of the Airwave Network beyond 2019, there is a lack of constraint or pressure on the price that would result in it being set at the competitive level. The Home Office is in a particularly weak bargaining position. Airwave Solutions / Motorola can set and maintain a price substantially above the level we would expect in a well-functioning market.

23. Other factors reinforce Airwave Solutions' and Motorola's market power and the weakness of the Home Office's bargaining position:
- (a) The fact that, in any negotiations, they are negotiating against the default option of the price agreed in 2016, which is very advantageous to Airwave Solutions and Motorola and correspondingly disadvantageous to the Home Office;
 - (b) the Airwave Network's dependence on Motorola for equipment and upgrades for its ongoing operation;
 - (c) the asymmetry of information between the parties; and
 - (d) the likely ineffectiveness of the original contractual provisions relating to price benchmarking (and the lack of reliable comparators that make any benchmarking exercise practically very difficult (if possible at all)).
24. As well as being dependent on the continued provision of the network by Airwave Solutions / Motorola, without disruption or degradation, the Home Office's ability to challenge the terms they propose or maintain is very substantially limited. The Home Office is not in a position to assess the profitability of any price and effectively to challenge its reasonableness. Not only does the Home Office lack bargaining power in the negotiations, but it is not in a position reliably to determine whether, or the extent to which, Airwave Solutions is charging or maintaining (or seeking to charge or maintain) prices that result in supernormal returns.
25. A further issue adds to the competitive distortions in the market. During the period (estimated to be at least 27 months) in which the transition between them will gradually take place, the Airwave Network and ESN will need to be linked.¹³ This will occur by 'interworking', which will support communications between users as they switch networks at different times.
26. The development of an interworking solution relies on Airwave Solutions' and Motorola's active cooperation. As a result, they have the ability to delay, hamper and/or make more costly the development of any such solution and the transition process.¹⁴ The competition issues described in paragraphs 12 to 24 above in

¹³ Because of the critical nature of network communication services for public safety and the length of the transition period.

¹⁴ Notwithstanding the contractual arrangements they have made with the Home Office in this connection which place some constraints on this ability (see paragraph 41 below).

particular, and the high profits they can make if the transition from the Airwave Network is delayed, meanwhile, dull their incentives effectively and efficiently to help to deliver such a solution.

AEC in the relevant market

27. Taking all of the above points into account,¹⁵ we 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 view, an AEC in that market.
28. The relevant features, which mean that Airwave Solutions, and its owner, Motorola, have unilateral market power and are able, as described further below, to charge prices significantly above the level we might expect in a competitive market and to make supernormal profits, are:
- (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 (or an alternative network) 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 transfer of those assets is not a credible option that the Home Office could either pursue or threaten to pursue.
 - (d) The Home Office has tendered and contracted for a replacement network – ESN – but it is taking much longer than anticipated to deliver and replace the Airwave Network. ESN will not be ready until at least 2026, likely 2029 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 prices were, or should have been, constrained by the terms of the PFI Agreement (and Airwave Solutions should have recouped its investment and had a chance to earn a reasonable return).
 - (f) The Home Office has very weak bargaining power.

¹⁵ And as more fully described in this final report.

- (g) There is asymmetry of information between the parties.
 - (h) There is a 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.
29. A further feature strengthens and has the potential to prolong the unilateral market power described above. That is the role of interworking in the transition between the Airwave Network and ESN, which Airwave Solutions and Motorola are able and incentivised to delay, hamper and/or make more costly. This additional feature adds to the AEC we have found, but is not determinative of it. The AEC exists even without this feature.

Customer detriment

30. Our estimate is that the AEC we find means that Airwave Solutions, and Motorola, can be expected to make total supernormal profits from the operation of the Airwave Network of around £1.27 billion between 1 January 2020 and 31 December 2029. This is equivalent to charging almost £200 million per year more than we would expect to see in a well-functioning market.¹⁶ Supernormal profits they would be able to generate by making interworking more costly would be additional to this.
31. These supernormal profits are a reflection of Airwave Solutions' and Motorola's ability to set and maintain prices very substantially above the competitive level. The Home Office and the emergency services in Great Britain are paying a much higher price than we would expect were the market competitive. That enables Airwave Solutions to contribute around 21% of Motorola's global pre-tax profits while accounting for only around 7% of its global revenues.¹⁷
32. The supernormal profits are, in our view, a reasonable measure of the transfer of welfare from the emergency services, and the taxpayers who fund them, to Motorola shareholders that results from the AEC we have identified. They indicate that a significant detrimental effect on customers results from that AEC.

Remedies

33. 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

¹⁶ See section 6 of this final report.

¹⁷ Motorola Solutions, Inc Earnings Release and Financial Tables for the year ended 31 December 2021 [msi-q4-2021-earnings-release-and-financial-tables.pdf \(motorolasolutions.com\)](https://www.motorolasolutions.com/~/media/MSI/2021/q4-2021-earnings-release-and-financial-tables.pdf), Airwave Solutions Limited Annual Report and Financial Statements for the year ended 31 December 2021. Based on HMRC average \$:£ exchange rate for the year ended 31 December 2021 of 0.7259.

address or remove the features giving rise to the AEC.¹⁸ In this case, however, our 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.

34. The main remedy we have decided to impose therefore focuses on mitigating the detrimental effects on customers of the AEC we have identified. It is a charge control on the price for which Airwave Solutions provides the Airwave Network and services.
35. We also make a recommendation to the Home Office that it should, as soon as possible, develop and implement a plan to ensure that, by not later than the end of 2029, the supply of communications network services for public safety is subject to:
 - (a) Competitive pricing arrangements; or, if this is not feasible,
 - (b) measures to similar effect (for example, through putting forward legislation to introduce a regulatory function).
36. The charge control will limit the price of the Airwave Network services at a level that would apply in a competitive market. It will, in our judgement, mitigate the detrimental effects on customers (the emergency services and ultimately taxpayers) from Airwave Solutions' and Motorola's market power. To the extent they will no longer be earning supernormal profits, the charge control will also reduce Airwave Solutions' and Motorola's incentives to delay the delivery of an interworking interface solution and thereby prolong the operation of the Airwave Network.
37. The charge control will commence this year. It will be subject to a review in 2026 that may result in its continuation, variation or removal. Subject to that review, it will continue until 31 December 2029.
38. The recommendation to the Home Office recognises that, while the charge control is necessary to mitigate the detrimental effects of the AEC over the period specified, it does not remedy that effect at source (for example, by removing the features of the market we have identified). The recommendation accordingly takes account of ways the AEC itself might be addressed.
39. The recommendation reflects that the Home Office is: (i) the key customer in the relevant market; and (ii) the government department responsible for procuring the replacement for the Airwave Network and / or establishing the arrangements under which a relevant network is provided. During the period when the price of the Airwave Network services is limited by the charge control (where otherwise it would not be constrained to a competitive level), the Home Office should ensure that the

¹⁸ [Guidelines](#), paragraph 330.

supply of communications network services for public safety becomes subject to competitive pricing arrangements, or measures to similar effect, over the longer term. That would offer the possibility of addressing the source of Airwave Solution's / Motorola's market power. The Home Office needs to make and execute an effective plan, with appropriate resourcing and programme management processes, to achieve these objectives.

40. Finally, although we find that the position in relation to interworking adds to the AEC, we have decided not to impose the interworking remedy proposed in our provisional decision report (nor any other remedy in relation to interworking).
41. We have taken into account that the charge control will materially reduce Airwave Solutions' / Motorola's incentives to behave in ways that might prolong the life of the Airwave Network. We have considered whether any additional interworking remedy would be effective and proportionate in that context, and decided not. We have also taken into account that Motorola and the Home Office have now entered into a contractual arrangement relating to interworking (the Interface Agreement) that substantially mitigates Airwave Solutions' and Motorola's ability to delay, hamper or make more costly the transition to ESN.
42. Nonetheless, we intend to keep the development of the market under close scrutiny, including as part of the charge control review in 2026. If there is not a successful outcome on interworking, it may be appropriate for the CMA to revisit our assessment.