LMR Network Services Market Investigation

Potential remedies

16 May 2022

This is one of a series of consultative working papers which will be published during the course of the investigation. This paper should be read alongside the issues statement and the other working papers which will be prepared in due course. These papers do not form the inquiry group's provisional findings. The group is carrying forward its information-gathering and analysis work and will proceed to prepare its provisional findings, which are currently scheduled for publication in June, taking into consideration responses to the consultation on the issues statement and the working papers. Parties wishing to comment on this paper should send their comments to MRN@cma.gov.uk by 30 May 2022.

The Competition and Markets Authority has excluded from this published version of the working paper 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 [✂]. [Some numbers have been replaced by a range. These are shown in square brackets.] [Non-sensitive wording is also indicated in square brackets.]

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Introduction

1. This working paper provides an update on our consideration of remedies that may be appropriate if we were to find an adverse effect on competition (AEC) in relation to the supply of LMR network services for public safety in Great Britain. We described the CMA's approach to remedies in our December 2021 Issues Statement.[1] We also described – and sought views on – three broad categories of remedies we had identified as potentially relevant to our assessment, given the nature of the theories of harm under investigation:

   (a) Price/charge controls[2]

   (b) Information transparency remedies

   (c) Structural separation remedies.

2. The following begins by describing the framework we apply when assessing potential remedies and then provides a summary of the views the Home Office and Motorola have submitted on potential remedy options. The paper then focuses on what an appropriate charge control remedy might look like and identifies and considers a range of design and implementation issues that would need to be addressed if a charge control remedy were to be applied. Finally, the paper provides an update on our thinking on the roles that information transparency and structural separation remedies could potentially play.

Framework for our assessment of potential remedies

3. As set out in our Guidelines, where the CMA identifies an AEC, we are required to determine:

   (a) 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;

   (b) 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;

[1] Issues statement (publishing.service.gov.uk)
[2] We use the term 'charge control' in this document – rather than 'price control (as was used in our Issues Statement) - as that terminology appears to better reflect the lump sum nature of the relevant payments made in relation to Airwave services.

(c) Whether a single remedy or a package of two or more remedies is required.[3]

4. In coming to a view on potential remedies, the Enterprise Act 2002 (the Act) requires the CMA 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'.[4]

5. 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. However, while generally preferring to address the causes of the AEC, 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.[5]

6. In assessing various potential remedies options, we consider their effectiveness and proportionality. With respect to effectiveness, we highlight that:

   (a) 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;

   (b) 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;

   (c) 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. The CMA will also tend to favour remedies that can be expected to show results within a relatively short time;[6] and

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[3] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraphs 325 to 328.
[4] Section 134(6).
[5] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraphs 330 to 333.
[6] The CMA may also consider including a sunset clause in a remedy where the AEC is expected to be time-limited, or may alternatively specify the circumstances in which it may be appropriate to review the functioning of / requirement for a given remedy.

(d) 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.[7]

7. In making an assessment of proportionality, we are guided by the following principles. A proportionate remedy is one that:

   (a) is effective in achieving its legitimate aim;

   (b) is no more onerous than needed to achieve its aim;

   (c) is the least onerous if there is a choice between several effective measures; and

   (d) does not produce disadvantages which are disproportionate to the aim.[8]

8. 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, with particular regard to the impact of remedies on customers, as well as on those businesses subject to them.

9. Beneficial effects might include lower prices, higher quality products/services and/or greater innovation, while 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;

   (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 RCBs, the amount of RCBs foregone may be considered to be a relevant cost of the remedy.

10. We highlight, however, that where businesses have been found to be earning profits persistently in excess of their cost of capital as a direct result of a feature of the market, and are likely to continue to do so in the absence of intervention,

[7] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraphs 334 to 341.
[8] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraph 344.

we will not usually give any significant weight to the anticipated reduction of such profits as a negative effect of a remedy. [9]

11. In this working paper, we set out our preliminary assessment of the potential remedy options highlighted in our Issues Statement in the context of this framework.

Home Office and Motorola views on potential remedy options

12. This section provides a summary of views that the Home Office and Motorola have submitted on potential remedy options. We consider these views in our preliminary consideration of the effectiveness and proportionality of potential remedies below.

Home office views

13. In its main hearing, the Home Office said it would be desirable if:

- A charge control was introduced which included a margin set by the CMA.
- A requirement for transparency was introduced that went 'well beyond' the current arrangements.

14. The Home Office said that transparency was important to provide assurance that network capabilities were being preserved, and that Airwave was actually spending the capex required to sustain the network. 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.

15. The Home Office raised a further issue concerned with access to Airwave's interworking interface, and said 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). This issue is not discussed below, but we have received a submission from the Home Office on this matter.[10] We will consider how best to take this forward, in the light of this submission.

[9] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraphs 348 to 353. The CMA will normally collect information from parties about the potential cost of implementing and complying with its remedies. In evaluating such information, the CC will bear in mind that it has less information than the parties have about how such potential costs have been estimated and that there might be incentives for parties to overstate the cost of those remedies that they do not support. The CC is likely to place most weight on estimates of implementation and compliance costs where parties have provided a clear explanation of how the estimate was reached, together with supporting evidence as to the assumptions used to derive those estimates.
[10] Interworking submission on behalf of the Home Office, 28 April 2022.

Motorola views

Charge control remedy

16. Motorola said that a charge control would be disproportionate including because:

- Forcing Airwave 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 others) a careful assessment of the competitive price level, the impact of imposing controls that are too tight, and the safety margin that should be built into the control.

- Setting charge controls at too low a level undermines investment incentives and ultimately discourages competition. Competitive prices need to allow suppliers a fair return on the investment in their assets and this return must fairly reflect underlying future risks.

- There is no justification for turning the supply of LMR services into a regulated activity given that the terms on which Airwave supplies its services have been determined through competition for the market and amended and – as far as pricing goes – confirmed when Motorola acquired Airwave Solutions and the Home Office de facto had a veto right over the acquisition.

- Benchmarking provisions have been agreed between the parties from the outset and it would be disproportionate to ignore these.

17. Motorola said that to make a meaningful assessment of the proportionality of any hypothetical remedy in relation to Airwave, a distinction must be drawn between the period from the time of the implementation of the CMA's decision to 2026, and after 2026 when Motorola [✂].

Information transparency remedy

18. In relation to the period up to 2026, Motorola said that a financial transparency remedy would be irrelevant (and therefore irrational) as Airwave services prices had already been set (and so detailed cost information was not required for the performance of the contract). Motorola said that if the current Airwave 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. Motorola 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.

19. Motorola said that [✂]. Motorola said 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.[11]

Structural separation remedy

20. Motorola said that it owned Airwave but was merely one of a number of current suppliers to ESN, and so the proportionate response to any hypothetical concern surrounding participation in both ESN and Airwave would be to require cessation of participation in ESN. Motorola said that such a remedy [✂] Motorola said that a divestiture process would inevitably take significant time to carry out, would be 'hugely distracting' and apt to cause disruption during Airwave's final years, even if a willing buyer could be found, given the expected short life and attendant regulatory uncertainty.

21. Motorola said that it seemed obvious that structural separation would not address any hypothetical concern with prices charged by Airwave, unless the CMA's view was that absent Motorola's participation in ESN, Airwave would be switched off more quickly. Motorola said that [✂] which it said addressed any such hypothetical concern. Motorola said it would be 'grossly disproportionate' to impose an Airwave divestiture remedy [✂].

Potential charge control remedies

22. In this section, we first set out the basic rationale for a charge control remedy before considering its potential design and effectiveness, followed by our preliminary consideration of proportionality issues.

23. As set out in our Issues Statement, we are considering two potential theories of Harm ("ToH"):

    (a) Unilateral market power of Airwave Solutions[12]; and

[11] 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.
[12] The Issues Statement explains that *'Airwave Solutions is the only supplier of LMR network services for public safety in Great Britain. Therefore, customers wishing to use such services currently have no alternative but to contract with Airwave Solutions'.*

(b) Dual role of Motorola Solutions.[13]

24. We note that, to the extent that we find the first ToH is supported by the evidence, this would suggest that Airwave Solutions was not constrained sufficiently either by the competition for the market which took place at the start of the original PFI, or by prevailing competition from alternative suppliers of communications for emergency services. In this case, Airwave Solutions would be able to exploit its position of market power to earn super-normal returns. Our preliminary profitability analysis provides support for this hypothesis.[14]

25. Our current view is that if we find an AEC on the basis of the first TOH then a charge control remedy, ie limiting the prices Airwave Solutions is allowed to charge to its customers, would be an effective remedy to mitigate the risks of any (pricing) harm to customers. We consider the effectiveness and proportionality of potential structural remedies later in this working paper, but our current thinking is that even if an appropriate structural remedy were to be developed and applied, it may be a number of years before such a remedy could be expected to provide adequate protection against the risk of customer harm.

26. We note that the Home Office considers that this remedy would be effective, albeit with an accompanying information transparency remedy. However, we also note Motorola's views (summarised above) on some the challenges and risks that can be associated with the introduction of a charge control (including the burdens that it could result in and unwanted effects it could cause to arise) and consider it important to take these and the potential for other adverse effects into account when considering the design of a potential charge control and, ultimately, when assessing its effectiveness and proportionality

Design considerations

27. Charge controls can be developed and applied in a range of different ways, and the appropriateness of different approaches can be affected significantly by characteristics of the context within which the control is being introduced. This section considers a range of potentially relevant design and implementation issues under the following broad headings:

[13] The Issues Statement states: *'Under this theory of harm, we shall consider whether Motorola Solutions' control of both the Airwave network through Airwave Solutions and key elements of the design and roll-out of the new network (ESN) may be a feature of the reference market that may prevent, restrict or distort competition in the supply of LMR network services. Our starting point is that if the first theory of harm (unilateral market power of Airwave Solution) holds true, this potential feature of the supply of LMR network services for public safety could worsen the market situation by removing or reducing the scope for competitive interactions between Airwave Solutions and the suppliers of ESN.'*
[14] Profitability modelling and results (publishing.service.gov.uk).

- The appropriate scope of charge control arrangements
- The basis upon which a charge control could be calibrated
- The appropriate form of a charge control (ie what does it actually constrain, and how)
- Duration and review/adjustment mechanisms.

28. For each area, we highlight some key design issues and/or options and comment on our current thinking.

The appropriate scope of charge control arrangements

29. Two initial scope questions concern the set of services that any charge control arrangements should apply to, and the range of terms (in relation to the provision of those services) that those arrangements should seek to determine and/or directly influence.

Which services should a charge control apply to?

30. For a charge control remedy to mitigate harm to customers as comprehensively as is reasonable and practical, we note that it should be applied to all those services where the supplier is likely to have and be able to exploit market power. In contrast, proportionality requires that it should not apply more broadly than is required to address any such market power, ie to any products or services where there (already) exists a reasonably effective competitive constraint.

31. Our current thinking is that, if introduced, a charge control should apply to all Airwave Solutions business lines, with the following exceptions:

    - Those services provided under the Ambulance Bundle 2 contract (Ambulance Bundle 2);
    - PRONTO and CCCRS; and
    - Radio terminals, except where part of a managed service.

32. Motorola told us that the Ambulance Bundle 2 covered control room services and terminals (including terminal support), and that the provision of these services was outsourced to Capita, which itself (alongside other providers) offered such services directly to Airwave Solutions customers.[15] Motorola told us that the Department of Health had split the Ambulance Bundle 2 requirements and

[15] Motorola's response to the CMA's Working Paper on Profitability, 10 January 2022, section 2.

awarded contracts to Frequentis (control room services) in 2016, Terrafix (mobile data services) in 2019, Exponential E (service partner) in 2021 and was looking to tender for LTE devices. Motorola said that the Ambulance Bundle 2 contract with Airwave Solutions was set to roll-off in 2022-2023 once the new providers go live.[16] Given these circumstances (and on the assumption that roll-off does take place in 2022-23), our current thinking is that it would not be appropriate to include the services provided under the Ambulance Bundle 2 contract within any charge control arrangements that may be introduced.

33. We note that Airwave Solutions provides some other services through two software business lines (Pronto and CCCRS) that Motorola told us go beyond and are not integral to the provision of LMR network services. Our current thinking is that these other services should not be covered by any charge control that may be introduced.

34. As was noted above, we have recently received a submission from the Home Office on interworking services. Interworking services are services associated with the provision of an interworking interface between Airwave and new network providers. We are continuing to explore the nature of the interworking arrangements, and whether it may appropriate for interworking services to be included within the scope of a charge control remedy.

35. We invite interested parties to make submissions as to whether the scope of services set out above for inclusion in a charge control is appropriate or whether other services should be included or excluded, respectively.

Which terms should a charge control seek to determine and/or directly influence?

36. It is common for charge controls in regulated sectors to include a range of provisions related to service quality and/or the delivery of some defined outputs. That is, charge controls often include provisions that relate not simply to charge levels, but also to what the relevant charges are intended to provide for. For Airwave's LMR network services, however, there are existing arrangements aimed at ensuring the appropriate provision of service quality over time, and we have not received submissions pointing to material deficiencies in those existing arrangements, other than in relation to transparency issues (which are considered further below). We are considering further the extent to which service definition issues may raise broader issues in relation to interworking services.

37. Given this, our current thinking is that – aside from in relation to transparency issues (which are considered separately below), and potentially interworking

[16] Motorola's response to the CMA's Working Paper on Profitability, 10 January 2022, section 2.

services – any charge control arrangements that may be introduced should focus only on charge levels, and that we should treat the specification of service requirements, and provisions in relation to service quality, as addressed adequately through existing contractual provisions.

The basis upon which a charge control could be calibrated

38. The primary aim of a charge control remedy would be to mitigate the harm to customers that may arise from Airwave's ability to exploit its market power to earn super-normal profits. In this context, an effective charge control remedy would be one which was set at a level that allowed Airwave Solutions to earn only normal profits on its activities.

39. One potential approach to determining the level at which a charge control should be set is by reference to market evidence on the charges paid for similar services. That is, charge levels could be benchmarked against available comparators, with this benchmarking analysis used as the basis for determining how a control should be calibrated. Our current thinking is that the use of this kind of benchmarking approach would not provide a feasible or reliable basis for setting a charge control for Airwave Network services given the difficulties associated with identifying appropriate comparators, and the limited extent to which information relevant to such an assessment is available. We note that, in line with this, our current thinking is that the benchmarking arrangements within the existing Airwave contracts would not – including if modified – be likely to provide reliable basis for effectively addressing an identified AEC. The challenges associated with using this kind of comparative assessment are discussed further in our benchmarking working paper, which considers the benchmarking arrangements that are provided within the existing Airwave contracts.[17]

40. Our current thinking is that a charge control would need to be calibrated on the basis of an assessment of Airwave's costs associated with the provision of the relevant LMR and ancillary services, and of how those cost might evolve over time. A cost-based assessment would include assessing the following key charge control inputs:

(a) Operating expenditure (opex) requirements

(b) Capital expenditure requirements

(c) An appropriate opening capital value

[17] Unpublished working paper, an overview of which is provided within the published paper titled, Overview of unpublished Working Papers.

(d) An appropriate approach to allowing for depreciation (and residual asset values)

(e) An appropriate return on capital.

41. These inputs would allow the revenue required to provide the relevant services over a given period to be estimated as the sum of:

- An allowance for opex
- An allowance for depreciation; and,
- An allowance for a return on capital, given the remaining net capital value at the relevant point in time (ie after account is taken of capex additions, and depreciation provisions).

42. We would expect our approach to assessing the charge control inputs in paragraph 39 (a) – (e) above to be informed by our assessments of a range of issues that are addressed in other working papers. In particular, we note that:

- Our May 2022 Profitability modelling and results Working Paper[18] includes some consideration of Airwave's past and forecast opex and capex levels that would be relevant to a charge control assessment. It also includes an assessment of what an appropriate valuation of Airwave assets might be as of 2020.
- Our Transfer Charges Working Paper addresses a number of issues that are relevant to the assessment of appropriate opex and capex allowances where services and/or equipment is supplied to Airwave by other parts of Motorola.
- Our Cost of capital Working Paper[19] considers the appropriateness of different estimates of Airwave's weighted average cost of capital.

43. While we would expect our assessments in these other working papers to provide significant assistance in relation to some aspects of the input assessments that are likely to be required if a charge control were to be introduced, two contextual factors look to raise particular challenges:

- Uncertainty over the impact that obsolescence and reliability issues might have on future capital expenditure requirements; and,

[18] Profitability modelling and results (publishing.service.gov.uk)
[19] Cost of capital working paper (publishing.service.gov.uk)

- Uncertainty over how long the Airwave network may need to remain operational.

44. In part, the obsolescence referred to in the first point above may result from changes made by other service providers (when upgrading their systems) that generate compatibility problems. There may be different ways to manage these kinds of obsolescence and reliability risks that have different associated capex implications, with this implying that assumptions and decisions with respect to capex plans may have implications for how risks are allocated.

45. The second point raises questions concerning the period over which it is appropriate for capex to be planned and remunerated in a context where there may be a need for service provision some years beyond the current national shut down date, while at the same time (and even with such an extension) upgrades provided for by new capex may have a limited economic life within the Airwave network. This latter point raises questions over the extent to which there may be residual value associated with assets when the Airwave Network is shut down, and how that residual value should be allocated.

46. As is highlighted below, these factors may have a bearing on what the appropriate form of charge control is likely to be.

The appropriate form of a charge control

47. We set out our current thinking above that it would be appropriate for a charge control, if it were introduced, to cover the relevant LMR and ancillary services. There are, however, a range of different forms in which a charge control could be applied in order to constrain the charges that could be levied in relation to those services. This section focuses on the following two issues:

    - the extent to which charge control values should be determined and/or constrained by up-front assessments, and

    - the extent to which the charge control should be determinative of charging outcomes.

48. It is notable most of the forms of charge control considered below involve the level of charges that are allowed in a given period under the control only to be determined ex post. This is because those approaches make allowed charges dependent, at least to some extent, on actual costs incurred in the relevant period. We will be considering ways in which the reconciliation arrangements that are necessary for the implementation of such approaches could be applied.

The extent to which charge control values should be determined and/or constrained by up-front assessments

49. Charge controls can vary significantly in terms of the role that up-front assessments play. This can be highlighted by considering some of the differences between a charge cap and a cost of service (or rate of return) approach in high-level terms. In particular:

    - Under a charge cap approach, specific allowed charge levels are determined up-front, and would be intended to apply for the duration of the control period. In line with that, all relevant cost assessment activity is undertaken up-front, and used to calibrate the specific charge cap levels that are set.

    - Under a cost of service (or rate of return) approach, charge levels would be set on an indicative basis initially. The allowed return on capital would be specified up front, but beyond this, the revenues that a company is allowed to recover through charges would be dependent on the costs they actually end up incurring during the control period, rather than on up-front assessments.

50. Using a charge cap could be understood as applying a charging approach that is consistent with that used in the current Airwave contracts, in that pre-determined charge levels would be paid for the relevant LMR and ancillary services, and it would be for Airwave Solutions to decide how – and at what cost over time – services were provided, subject to it meeting existing service quality requirements. This would be expected to have some desirable efficiency incentive properties, with Airwave Solutions exposed to the cost implications of its decisions. It would also be likely to involve a relatively limited ongoing administrative burden, as while there may still be a case for some additional transparency requirements under such an approach, those requirements would not be needed (as they would under an approach that included cost passthrough provisions) to provide a basis for ongoing assurance with respect to relevant Airwave Solutions expenditure levels.

51. However, the case for adopting a charge cap approach is likely to be heavily dependent on the extent to which a reliable view of future expenditure requirements can be formed when the level of the charge cap is being determined. In line with our comments above, uncertainty over future capex requirements, and the challenges associated with determining what an appropriate allowance for future capex might be, raise significant question marks over the likely appropriateness of adopting a charge cap approach in this context.

52. We note that Airwave Solutions' current forecast is that around £[✄]m of capex is required in the period 2022 to 2026. However, the scale of this identified requirement appears likely to be affected by a range of assumptions with respect to the obsolescence issues that may be faced, and the options that may be available to manage them. This raises the prospect that Airwave Solutions may be able to meet its service quality commitments in the period up to 2026 by adopting alternative risk management approaches that would require significantly lower capex levels in the period 2022 to 2026. Indeed, it is notable that Airwave Solutions' assessment of capex requirements over the 2022 to 2026 period is around £[✄]m lower, if a 'hard stop' is assumed for the network at the end of 2026 (ie at the current national shutdown date).[20]

53. Our current thinking is that the challenges associated with assessing potential capex requirements – and, as discussed above, the potential risk allocation implications of such assessments – mean that applying a charge cap approach (which incorporates a capex forecast) would be unlikely to provide a reliable basis for effectively addressing the adverse effects of an AEC, were it to be found. In particular, there may be a significant risk that charges would be set at too high a level, and potentially on the basis of capex assumptions that exceed those that one might expect to observe in a well-functioning market, and those that are ultimately undertaken. While we are continuing to review Airwave's cost forecasts (including with technical expert input), we consider there to be a significant asymmetry of information in terms of the assessment of likely future capex requirements, with this heavily dependent on the current state of the network, and available options to address reliability risks. Given this, our current thinking is that if a charge control were to be introduced, it is likely to be appropriate for it to include at least some features of a 'cost of service' approach (of the kind described above).

54. However, the adoption of a 'cost of service' approach would raise other risks of adverse outcomes arising. In particular, such an approach can result in inefficient levels of cost being passed through into charges, including as a result of potential incentives for 'gold plating': that is, the undertaking of unnecessarily extensive capex enhancements in order to allow a return to be earned on a larger asset base. An additional source of concern arises here given the extent to which Airwave Solutions sources inputs from Motorola, such that the levels of reported cost (that may then pass through into charges) may be heavily affected by the transfer charging practices that are applied. As was noted above, these issues are considered in our transfer charging working paper.

[20] [✄]

55. We are currently considering three types of options for ways in which the risk that inefficient levels of costs arise, and could be passed through to charges, might be guarded against:

- Cost sharing incentives
- Applying a different approach to opex and capex allowances
- Including conditions on the eligibility of costs for recovery through charges.

Cost-sharing incentives

56. One common way in which regulators seek to take account of uncertainty over cost levels is to include cost sharing incentives within charge control arrangements. Under such approaches, instead of determining the allowance that should be provided for costs up-front (and using this to determine what level of charge cap should apply over the period), regulators instead determine a target level of costs up-front. Companies would typically then be exposed to a defined proportion of the difference between the regulator's up-front target level, and the company's actual level of expenditure over the period.

57. The use of this kind of mechanism is intended to try to help better align company and customer interests by giving the company a stake in cost control, while at the same time not fully exposing the company to the implications of different expenditure levels. As the proportion of the difference between target and actual costs borne by the company gets 'higher', this kind of approach gets closer to a form of charge cap, and as the proportion gets lower, it gets closer to a 'cost of service' approach.

58. A key consideration in relation to the use of such an approach is the extent to which the outcomes that charges are intended to deliver are well defined. Where that is not the case, there may be scope for a company to benefit from spending less than the target level that was determined up-front, by reducing the scope or quality of what is being delivered. Where this is the case, there may be a risk of undesirable deterioration of asset conditions alongside unduly high charges that may result from the benefits the company secures under the cost sharing incentives.

59. While service provision requirements are addressed in the existing contractual arrangements, if cost sharing incentives were to be applied to Airwave, it may be important to consider – and potentially to specify – what asset condition improvements any assumed target level capex was intended to provide for. This may not be an important issue if use of the Airwave Network was not to continue beyond the current national shutdown date. However, if there were to be

continued provision of Airwave Network services beyond 2026, then the levels of expenditure that may be required to provide for continued operation after that time may be heavily affected by earlier capital expenditure decisions.

60. We are continuing to consider whether the use of cost sharing incentives might form an appropriate part of a charge control arrangements, were they to be introduced, and what this might imply for obligations it may be appropriate to include in relation to upgrades of the network. We are giving further consideration to how it might be appropriate to calibrate cost sharing incentives, and note that they can be viewed sitting on a spectrum between the charge cap and cost of service approaches described above. One intermediate option would be to apply a 50 per cent cost sharing factor such that Airwave and its customers would be equally exposed to differences between the baseline allowance level and actual capex, but higher or lower percentages could also be used. In assessing how it might be appropriate to calibrate cost sharing incentives, we will be considering – among other things – the extent to which Motorola may benefit from higher capex levels as a result of the returns it may be able to earn, including as a result of increased levels of input sales to Airwave.

Applying a different approach to opex and capex allowances

61. Our current thinking is that it may be appropriate to adopt a different approach to opex and capex within any charge control arrangements that may be introduced. In particular, the uncertainties over future opex requirements appear to be much more limited than those related to capex. Given this, our current view is that if a 'cost of service' approach were to be identified as appropriate for capex, then it may be appropriate adopt a different approach to opex that involved us determining a fixed up-front allowance (subject to any indexation provisions that may be included). We note that this would align broadly with the Civil Aviation Authority's current approach to regulating NATS.

62. The adoption of different incentives arrangements for opex and capex can potentially generate undesirable incentives with respect to how costs are categorised, and company choices between different potential options may be subject to biases that result from this different treatment. We will consider the extent to which this type of undesirable effect might be expected to arise if such an approach were to be applied to Airwave Network services.

Including conditions on the eligibility of costs for recovery through charges

63. We are 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. These include the following:

(a) Information provision and engagement requirements: the eligibility of costs for inclusion within the charge control calculation could be made conditional on Airwave having met some defined information provision and engagement requirements. For example, this might include requirements on engagement with the Home Office on material changes to capex plans.

(b) Transfer charging rules: Our preliminary consideration of relevant issues is set out in the transfer charging working paper and any such rules would follow from that analysis.

(c) Assurance requirements: Airwave Solutions could be required to meet specified assurance requirements in relation to its submissions of expenditure data, and in relation to its capex plans (and material changes to those plans).

(d) A Demonstrably Inefficient and Wasteful Expenditure (DIWE) provision: We note that such a provision is applied to NATS's capital expenditure (following the CMA's Determination of its price control appeal), and provides a means of guarding against demonstrably inefficient or wasteful expenditure being recovered from customers.[21]

64. While some of the above conditions (eg transfer pricing rules) would apply to all costs, others could be used to directly address risks associated the efficiency of capex activity. For example, if a charge control included a 'cost of service' approach to funding capex (ie it did not included cost sharing incentives), then the charge control could set a baseline capex allowance, and specify conditions (in line with those highlighted above) that would need to be met for materially higher level of allowance to be funded through charges subsequently.

The extent to which the charge control should be determinative of charging outcomes

65. It is common for charge controls to provide some degree of flexibility such that actual charge levels can deviate from the levels that would be implied by their mechanistic application. This flexibility is typically provided through the use of charge caps, or limits, such that companies retain flexibility to set charges that are below the level of the relevant cap. Our current thinking is that the provision of this kind of flexibility (to set charge levels below the maximum allowed for by a control) would be likely to be of little relevance to the likely effects of a charge control if it were introduced in relation to the relevant LMR and ancillary services.

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[21] See Paragraphs 9.44 – 9.66 of: Final report (publishing.service.gov.uk)

In particular, Airwave Solutions would appear unlikely to have an incentive to set its charges below the maximum levels allowed for by a charge control.

66. A different way of providing flexibility with respect to charging outcomes would be for the application of a charge control to be treated as a default or backstop option. In relation to Airwave Network services, such an approach would mean that it would be open to the Home Office and Airwave Solutions to agree alternative charging arrangements, with the charge control only applying in circumstances where no such alternative arrangements had been agreed. The use of a charge control as default option could, to some extent, be understood as a form of structural remedy in that it would be expected to adjust the relative bargaining positions the Home Office and Airwave Solutions, and thereby improve the ability of the Home Office to agree a competitive price, by making the charge control (rather than, for example, existing charging terms) the primary reference point for subsequent negotiations.

67. We are considering whether it would be appropriate – if a charge control were to be introduced – for that control to be treated as a default option, and thus to allow for the Home Office and Airwave Solutions to agree alternative arrangements. In particular, we would need to be satisfied that such alternative arrangements would effectively address any identified AEC. Such an approach could provide scope for the parties to seek alternatives that they both considered likely to provide a better outcome than the automatic application of the charge control. The reasons why the parties may be able to agree better alternatives could include the following:

- The parties may be able to agree an approach that allocates risks more efficiently than would be the case under default charge control arrangements that may apply. In line with the discussion above, cost passthrough arrangements would effectively allocate much of the risk associated with the level of future capex requirements to the Home Office. The parties may be able to identify a different allocation of risk that they both preferred, for example, by agreeing a new set of fixed charge levels that would apply to the relevant LMR and ancillary services irrespective of actual future capex spend levels.

- An alternative approach may allow for a more streamlined information reporting and assurance arrangements to be agreed than had been provided for under a charge control. This may be particularly the case if the agreement to apply an alternative approach avoided the use of cost-passthrough arrangements, given the extent of reporting and assurance requirements that would be expected to accompany such arrangements.

68. The scope for the parties to agree alternative arrangements may also provide desirable flexibility to adapt to the evolution of circumstances over time in a context where the period of time over which Airwave Network services are required remains uncertain, as does that duration and form of the transition process that may required when ESN becomes operational.

Duration and review/adjustment mechanisms

69. As highlighted in paragraph 6, we tend to prefer remedies that take effect promptly and which can be expected to last for as long as the AEC itself is expected to last. In this context, in the event that we find an AEC, we consider that any charge control should:

(a) Be put in place and take effect as quickly as is practicable, which we currently consider means that a charge control would take effect in 2023; and

(b) Persist until either the final shutdown of the Airwave Network, or until such other arrangements can be put in place to prevent any further exploitation of unilateral market power by Airwave Solutions.

70. While there is currently a national shutdown date set for Airwave at the end of 2026, it is possible that Airwave services may be required for some years beyond that. We consider it important that any charge control arrangements that may be put in place reflect that possibility by being appropriately robust and/or adaptable in relation to material changes in circumstances. Given the uncertainties over how circumstances might evolve, our current thinking is that it would be appropriate to specify a point in time by which the charge control arrangements should be reviewed. Our current thinking is that the end of 2026 may be an appropriate point in time to specify, but that if the current national shutdown date becomes effective at the end of 2026 (such that the Airwave network is no longer operating after that point), then that review would not be necessary.

71. Our current thinking is that it would be appropriate for the terms upon which that review should be undertaken to be defined relatively narrowly as part of our decision, both in terms of how adjustments and reconciliations in relation to (what at that point in time would be) past expenditure should be dealt with, and in terms of the bases upon and criteria against which the charge control might be modified on a forward-looking basis.

72. The CMA could undertake this review itself, or there may be a case for this – together with responsibility for ongoing oversight – being transferred to an appropriate economic regulator. We are continuing to explore and consider what

the most appropriate ongoing oversight and review arrangements might be, should a charge control be introduced.

CMA consideration of proportionality

73. As set out in paragraph 7, when assessing the proportionality of a remedy, we consider whether it:

    (a) is effective in achieving its legitimate aim;

    (b) is no more onerous than needed to achieve its aim;

    (c) is the least onerous if there is a choice between several effective measures; and

    (d) does not produce disadvantages which are disproportionate to the aim.[22]

74. Our current view is that a charge control remedy may be effective in achieving its legitimate aim and we have set out above a number of design considerations that we are taking into account in our ongoing assessment of this.

75. Our current view is that a charge control would be no more onerous than needed to achieve its aim and would be the least onerous, effective, potential measure. Our thinking on this issue includes the following:

    - We note Motorola's submission that implementing a charge control properly is burdensome, involving (among others) a careful assessment of the competitive price level, the impact of imposing controls that are too tight, and the safety margin that should be built into the control. We agree that charge controls are intrusive remedies that require careful design to ensure their effectiveness and proportionality. However, as set out above, we consider that a charge control is likely to be needed to achieve the aim of mitigating the detriment to customers that might arise from Airwave's exploitation of unilateral market power given the absence of credible alternatives.

    - We noted (above) 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. However, as set out in our Benchmarking Working Paper, our current view is that

[22] CC3 (Revised), Guidelines for market investigations: Their role, procedures, assessment and remedies (publishing.service.gov.uk), paragraph 344.

these provisions are ineffective in constraining the pricing of Airwave Solutions for its LMR network services.

- We consider an information transparency remedy in greater detail below. However, while we consider that this would represent a less intrusive remedy to an AEC as identified by our first TOH (see paragraph 23(a)), and that this might be required alongside a charge control in order to ensure an overall package of remedies that addressed the AEC as comprehensively as is reasonable and practicable, our current thinking is that this would not be an effective remedy on its own.

76. Our current view is that a charge control could be developed that would not produce disadvantages which were disproportionate to its aim, and our discussion of charge control design issues above highlights a number of potential disadvantages and ways in which they can be taken into account.

77. In this context, we have also considered Motorola's submission that intervening in the pricing of Airwave Solutions' services would undermine trust in contracting with the UK Government. This outcome would, if realised, potentially impose various costs (monetary and non-monetary) across British society. Our current view is that this risk is unlikely to be realised. Our interpretation of the evidence that we have reviewed is that Airwave invested in developing its LMR network under a (15-19 year) PFI contract, which gave it a high level of security over the revenues that it would earn in return for that investment. It later developed the network further as it signed contracts with additional customers and enhanced the resilience of the network for its existing customers (under separate arrangement). The original PFI and the subsequent contracts signed, all envisaged the end of the 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 31st December 2019. The Government provided no guarantees of further revenues beyond that point and, had the ESN network been delivered on time, there may have been no such further revenues for Airwave Solutions. In these circumstances, we do not consider that CMA intervention to limit the prices charged during an (unforeseen) extension period, leaving the terms of the original contracts unchanged, would undermine trust in contracting with the UK Government.

Information transparency remedies

78. Our current thinking is that information transparency remedies, ie the disclosure of cost (opex and capex) and accompanying operational information by Airwave Solutions to its customers and/or a regulatory body – when viewed on a stand-alone basis – would not provide an effective means of addressing the adverse

effects of an AEC, were it to be found. That is, while we consider that transparency requirements could have an important, supporting role in relation to the application of charge control arrangements, our current thinking is that such requirements would not be likely to provide an effective alternative remedy to introduction of charge control arrangements.

79. This thinking follows from the nature of the theories of harm under consideration. For example, if we were to find that Airwave was able to earn excess profits as a result of an imbalance of bargaining power between it and the Home Office (given an absence of credible outside options for a number of years), our current view is that an information transparency remedy would be unlikely to be an effective response. Under such circumstances, while information transparency requirements may facilitate some degree of improvement in outcomes by better equipping the Home Office to obtain competitive prices in future negotiations (and in efforts it may make to use existing benchmarking provisions), our current thinking is that the introduction of such requirements would not be likely to provide an effective means of addressing the underlying imbalance of economic, or the adverse effects that may result from it.

80. In the context of a charge control, information transparency provisions may be required in order to ensure the effectiveness of the remedy (depending on the design). We consider that such measures would also be proportionate where they would be required for effectiveness and the same end could not be achieved by other, less intrusive means.

Structural separation remedies

81. A potential structural remedy would be for Motorola to be required to divest Airwave Solutions or other activities it carries out that relate to the roll-out of ESN. This kind of divestment requirement could provide an effective remedy if, for example, an AEC were found in relation to Motorola's ability and incentive to hamper the roll-out of ESN, with the effect of prolonging the operation of the Airwave Network, ie in relation to TOH2.

82. An issue we will consider further is the extent to which a divestment requirement may be necessary to address the AEC set out in paragraph 23(b). We will take account, in particular, of the extent to which the introduction of a charge control would be expected to diminish the extent to which Motorola would benefit from prolonging the operation of the Airwave Network. That will be an important element of our assessment of whether, if we were to find an AEC in relation to Motorola's ability and incentive to hamper the roll-out of ESN, a divestment requirement is appropriate.

Questions for consultation

83. We invite interested parties to make submissions on any element of this working paper, including our current thinking on the different types of potential remedies that are discussed, as well as the detailed design considerations / options that we have highlighted for the potential charge control remedy.

84. In particular, however, we invite interested parties to provide their views on the following points:

(a) Our current view that if we find an AEC on the basis of Airwave Solutions having unilateral market power then a charge control remedy (ie limiting the prices Airwave Solutions is allowed to charge its customers) would be an effective remedy to mitigate the risks of any (pricing) harm to customers.

(b) Which services a charge control should apply to. Our current thinking is that a charge control should cover all Airwave Solutions business activities with the exception of Ambulance Bundle 2 services, PRONTO and CCCRS, and radio terminals except where provided as part of a managed services contract. However, we invite interested parties to make submissions as to whether the scope of services set out above for inclusion in a charge control is appropriate or whether other services should be included or excluded, respectively.

(c) Our current thinking is that – aside from in relation to transparency issues and potentially interworking services – any charge control arrangements that may be introduced should focus only on charge levels, and that we should treat the specification of service requirements, and provisions in relation to service quality, as addressed adequately through existing contractual provisions.

(d) Our current thinking that a charge control would need to be calibrated on the basis of an assessment of Airwave's costs associated with the provision of the relevant LMR and ancillary services, and of how those cost might evolve over time.

(e) The advantages and disadvantages (including those highlighted above) of:

(i) Adopting a charge cap approach;

(ii) Adopting a cost of service (or rate of return) approach;

(iii) Using cost sharing incentives, and the use of different cost sharing incentive rates;

(iv) Applying a different approach to opex and capex allowances, and in particular, setting a fixed opex allowance while applying a cost of service or cost sharing approach to capex; and

(v) Including conditions on the eligibility of costs for recovery through charges (as a means of guarding against the risk of inefficient capex levels).

(f) Whether a charge control should determine charging outcomes or act as a backstop.

(g) The duration of a charge control and review arrangements.

(h) Our current thinking that information transparency remedies – when viewed on a stand-alone basis – would not provide an effective means of addressing the adverse effects of an AEC.

(i) Whether a divestment remedy may be required if an AEC were found in relation to Motorola's ability and incentive to hamper the roll-out of ESN, with the effect of prolonging the operation of the Airwave Network.

(j) The extent to which other forms of divestment would be expected to provide an effective or proportionate means of addressing any AECs that might be found.

(k) What arrangements should apply if the use of the Airwave Network continues beyond the current National Shutdown Date: one option would be for a charge control to continue (or be extended), but are there other options that could be expected to be effective and proportionate that are not included above?