



House of Commons
Committee of Public Accounts

Upgrading emergency service communications

Thirty-fifth Report of Session 2016–17

*Report, together with formal minutes relating
to the report*

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The Committee of Public Accounts

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Publication

Committee reports are published on the [Committee’s website](#) and in print by Order of the House.

Evidence relating to this report is published on the [inquiry publications page](#) of the Committee’s website.

Committee staff

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Summary

The Home Office (the Department) is replacing the radio system used by the police, fire and ambulance services in Great Britain with a system that is not yet in use nationwide anywhere in the world. The Emergency Services Network (ESN) is an ambitious programme to provide a critical national service, using technology that is still being developed, to a challenging timescale set by the Department. While the Department has ensured stability in the senior team managing the project, notably through the Senior Responsible Owner who has been in post since 2011, it looks as if the current target date for delivering ESN will not be met. Emergency services will not use ESN until they are firmly convinced that it works, which may require more testing and assurance work than the current December 2019 delivery date seems to allow for. Despite the prospect of delay the Department has not budgeted for an extended transition period or put in place detailed contingency arrangements to manage this risk. The Department did not manage to maintain competitive pressure in letting either of the two main ESN contracts and when these contracts are recompleted the incumbent suppliers will be in a very strong position.

Introduction

The 105 police, fire and ambulance services in Great Britain (the emergency services) currently communicate using the Airwave radio system. The system is currently provided by Airwave Solutions Limited, a company acquired by Motorola Solutions in 2016, under contracts that now expire in 2019. In 2011, the Government set up the Emergency Services Mobile Communications Programme (the programme) to look at options to replace Airwave. The programme is run by the Home Office (the Department) but it is co-funded by the Department of Health, and the Scottish and Welsh Governments. The chosen option to replace Airwave is called the Emergency Services Network (ESN). ESN should save money by sharing an existing commercial 4G mobile data network instead of building a dedicated public service network. It should also provide emergency services with better mobile data capabilities. In 2015, the programme awarded contracts to Motorola Solutions and EE to provide the main elements of the new system and the current plan is that all emergency services transition to ESN by end-December 2019. By that time, £1.2 billion will have been spent developing the ESN and a further £1.4 billion on running down Airwave. The estimated cost once ESN is fully operational is a further £2.6 billion between 2020 and 2032.

Conclusions and recommendations

1. **It seems unlikely that the ambitious target date for delivering the Emergency Services Network will be met.** Any further compression of the timetable will increase the risk to successful delivery of this critical programme. The National Audit Office estimated that the programme was between five and ten months behind target and representatives of the 105 police, fire and ambulance services in Great Britain (the emergency services) are less than 50% confident that the Emergency Services Network (ESN) will be delivered on time. The Home Office (the Department) confirmed to us that some slippage would occur. The time pressure is compounded by the need to provide emergency services with sufficient assurance that ESN is at least as good as Airwave. However, the time available for the region by region transition to the new system has been cut from 30 to 27 months, leaving many regions with little time for contingency and parallel running of ESN with Airwave, with the South West region, the worst placed, having no time for either. The Department told us it would not force emergency services to switch to ESN unless they were happy with it. We have observed previously that convincing local bodies to use new services can be a difficult process and believe it will be challenging to get all emergency services to collectively agree ESN is ready so that Airwave can be turned off as planned in 2019.

Recommendation: *The Department should reassess the business case timescales, update milestones for delivery and work with emergency services to update transition plans so all parties agree they are deliverable. It must take responsibility for convincing services to switch to ESN but also be clear at what point it will mandate the switchover. We expect the Department to report to us on progress by September 2017.*

2. **Despite the prospect of delay the Department has not budgeted for an extended transition period or put in place detailed contingency arrangements to manage this risk.** The current Airwave contracts expire in December 2019 and the only contingency if ESN is not functional by then is to extend them, which would cost an estimated £475 million for a year's delay nationwide. The Department has negotiated a fixed price with Airwave's new owner, Motorola, to extend Airwave if needed on a regional and monthly basis but detailed contingency plans to manage any such extensions have not been prepared. These are crucial as Motorola requires notification by December 2018 at the latest in order to make the preparations needed to run the Airwave service past December 2019. The Department, which has not yet agreed budgetary provisions for any delay, confirmed that the cost of delay would not be borne by individual regions as any additional payments would be made centrally from the grant to the police. The cost of any delay caused by a supplier should be recovered from the responsible party but, with the Department acting as prime contractor, identifying those responsible will not be straightforward.

Recommendation: *The Department should budget for the cost of an extended timeframe and put in place arrangements for Airwave contract extensions as required. The Department should update us on these provisions by September 2017.*

3. **Good communications can make the difference between life and death for both emergency services personnel and the public but the technology ESN will rely on is not yet proven.** The ESN system is intended to save money by avoiding the capital costs of building a dedicated network by running on EE's existing commercial 4G mobile data network. But only one other country in the world, South Korea, has attempted to do this and its approach is less risky than that proposed here as dedicated mobile spectrum is available to the emergency services. In Great Britain, new technology to prioritise the emergency services over commercial users needs to be developed. In addition, devices with the required robustness, voice and dual-mode capabilities are being developed, while work is ongoing to expand coverage of the EE network in remote areas and the London Underground. The Department told us that it expected an announcement on the London Underground in the next couple of months but it is not clear whether this will include plans for other underground systems in the UK, such as Glasgow. Currently national coverage is at 74% but EE is confident that it would reach the 97% target (equivalent to the existing coverage provided by Airwave) by September 2017 and that technical options exist to close gaps in remote areas, such as the use of portable masts. The Department recognised that bringing together all the different elements to form an end-to-end system and scaling up these solutions and testing them adequately will be very challenging. The need for robust testing was a particular concern raised by a number of stakeholders across industry and the emergency services.

Recommendation: *The Department should put in place adequate and independent testing of the technology required for ESN to make sure it works under pressure in a live environment. The Department must also address the real security concerns about communications on the London Underground and other underground systems and update the Committee on the outcome.*

4. **The Department did not manage to maintain competitive pressure in letting either of the two main ESN contracts.** Initially there was strong market interest in both the main ESN contracts. For the user services contract, won by Motorola, the Department received 17 expressions of interest but not all these resulted in bids due to demanding technical requirements. The Department narrowed the competition down to five bidders with two invited to submit a best and final offer. For the network contract, won by EE, despite the fact there are only four mobile network operators in Great Britain the Department again only invited best and final offers from two suppliers. In both cases, one of the final two suppliers withdrew leaving the Department exposed to a potentially uncompetitive single-supplier situation. The Department told us that in one of these cases supplier withdrawal came so late that the winning bid, submitted by Motorola, was effectively prepared under competitive pressure, while for the other a "should-cost model" was developed to ensure the remaining bid from EE was competitively priced.

Recommendation: *The Department should review its tender arrangements to ensure it does not rule out potential bidders too quickly, to avoid future single supplier situations.*

5. **We are concerned that the incumbent suppliers will be in a very strong position when the ESN contracts are re-competed.** ESN was designed to:

- allow the contracts to be re-competed easily and frequently;
- ensure costs are kept low; and
- enable the technology used to be regularly updated.

But the current suppliers could acquire a significant competitive advantage. EE is being paid to roll out its network across Great Britain and into remote areas, with 250 new sites funded directly by the Department. The low numbers of public users in remote areas may mean that competing network operators have limited incentive to invest, placing them at a disadvantage to EE when the contract is re-let. According to the Department, to comply with state-aid rules, other network operators will be able to use masts in remote areas. However, other mobile network operators maintain that they have not been given details of the location and specification of proposed ESN sites and that no framework has been established for sharing masts. Without these it will be difficult for other operators to plan their own network expansion efforts. Separately, Motorola are responsible for setting the specification for ESN devices but are also a potential supplier of the devices, raising the risk that it sets specifications so as to favour its own products. The Department told us that it would be very careful to make sure device specifications are standardised and not bespoke to any single supplier.

Recommendation: *The Department should, working with Ofcom, ensure other network operators have sufficient and timely information to enable them to make use of the ESN infrastructure and should report back to this committee in 2017 on take-up. For devices, the Department should engage with suppliers and ensure that specifications are standardised and do not favour any individual supplier.*

1 Delivering the Emergency Services Network

1. On the basis of a report by the Comptroller and Auditor General, we took evidence from the Home Office (the Department) the Department of Health and the National Technology Adviser about the Emergency Services Mobile Communications Programme (the programme).¹ We also took evidence from two representatives from fire and rescue services and the suppliers of the main programme contracts, Motorola and EE.

2. The 105 police, fire and rescue and ambulance services (the emergency services) in Great Britain currently communicate using the Airwave system. The contracts to provide Airwave are held by Airwave Solutions Limited, acquired by Motorola Solutions in 2016, and expire in 2019. In 2011, the Government set up the programme to look at options to replace Airwave. The programme is part of the Home Office but is co-funded by the Department of Health and the Scottish and Welsh Governments. The chosen option to replace Airwave is the Emergency Services Network (ESN). This replaces dedicated radio-based infrastructure with 4G mobile-data technology that will operate across a network shared with EE's other customers. Such an approach should save money by avoiding the capital costs of building a new dedicated network, while providing better mobile-data capabilities than Airwave.²

3. In December 2015, the programme signed contracts with Motorola and EE to deliver the main components of ESN. Emergency services are scheduled to start using ESN in September 2017 with regions switching over by the end of December 2019. By this time, £1.2 billion will have been spent developing the system and a further £1.4 billion running down Airwave. After December 2019 the Airwave service will be switched off and the current ESN contracts will continue until 2023 at the latest. The Department predicts that a further £2.6 billion will be spent operating ESN between 2020 and 2032.³

4. The programme's 2015 full business case established milestone dates for delivering ESN (Figure 1).⁴ It allowed 21 months for designing, building and testing ESN, then a further 30 months for all emergency services to transition to ESN from Airwave. Milestone dates changed subsequently with the main contracts awarded in December 2015, two months later than planned.⁵ However, at the same time, the end date for the programme was brought forward reducing the time available for emergency services to transition to the new service to 27 months.⁶ The National Audit Office report estimated that the programme was between five and ten months delayed.⁷ Emergency services representatives supported this estimate, telling us they were less than 50% confident that the current timetable for rolling out ESN would be achieved.⁸

1 C&AG's Report, *Upgrading emergency service communications: the Emergency Services Network*, Session 2016–17, HC 627, 15 September 2016

2 C&AG's Report, paras 1, 2, 3 and 1.11

3 C&AG's Report, paras 4, 1.13, Key Dates and Figure 6

4 C&AG's Report, para 2.17

5 C&AG's Report, Figure 11

6 C&AG's Report, Figure 11

7 C&AG's Report, para 2.22

8 [Q 69](#)

Figure 1—milestone dates for delivering ESN

	Full business case (August 2015)	Main contract award (December 2015)	Current (August 2016)
Target date for:			
Main contract award	October 2015	December 2015	December 2015
Detailed design complete	March 2016	May 2016	August 2016
Build and testing of ESN complete, transition starts	July 2017	September 2017	September 2017
Transition complete	January 2020	March 2020	December 2019
Time allowed for:			
Design, build and testing ESN	21 months	21 months	21 months
Transition	30 months	30 months	27 months

Source: C&AG report Figure 11

5. The current transition timetable allows 12 months for most regions to transition to ESN (Figure 2).⁹ Regions who transition to the new system first will have a period of contingency and parallel-running of systems and will have time to see if ESN works properly for an extended period.¹⁰ Regions that are currently scheduled to transition to ESN later will have a much shorter period of dual running and, on current plans, the South West region will have no contingency or parallel running period at all. The Department told us the current transition plan reflected the desire to have some sequencing in the roll-out which would allow lessons to be learned and avoid a big bang approach. The Department also suggested that regions that wanted longer periods of contingency and parallel running could start transition earlier if they wished.¹¹ The Department noted that if users did not want to compress the transition timetable further through early transition then it would look to extend Airwave to allow for a longer transition period. The Department stated that “we are not going to put pressure on them. They have to be comfortable that the plan is viable and that they that will be comfortable turning off Airwave at the end”.¹²

6. The Department confirmed that ESN needs to be at least as good as Airwave and the emergency services would not be forced to use a system that does not meet their requirements.¹³ The emergency services told us that an extended period of testing of the end-to-end network and a period of trouble-free running, where they did not need to keep switching back to Airwave, would give them confidence in ESN.¹⁴ It was not clear, however, what would happen if the system met the performance levels established by the Department but was still deemed not ready by emergency services.¹⁵ We have seen

9 [C&AG's Report](#), para 2.20

10 [Qq 5–7](#)

11 [Qq 137–138](#)

12 [Q99](#)

13 [Qq 88–89](#)

14 [Qq 7, 69](#)

15 [Q 88](#)

previous examples of local services resisting the roll-out of a national system because they did not believe it fit for purpose, for example with the national programme for IT in the health service.¹⁶ The Department told us that in the event of any reluctance to move onto ESN it would try and determine the grounds for delay with users, but that if most emergency services agreed the system worked then ultimately the final decision around whether to mandate use of ESN would rest with the Home Office.¹⁷

Figure 2—Transition activity by region and month, as at August 2016



Notes:

1. Transition plans we reviewed showed the South West region starting transition in April 2019 and finishing in January 2020 (without contingency). With the ESN completion date being brought forward to December 2019 we have brought forward its start date one month to allow the minimum 10 months programme officials believe is required.
2. We have used regions to illustrate the level of transition activity for simplicity. Regions are not of identical size but more accurate measures do not materially impact the pattern shown above.

Source: C&AG’s report, Figure 12

7. The current Airwave contracts expire in December 2019. Emergency services communications are a critical national service and the safety of personnel and the public must be ensured during the transition period. Should ESN not be fully functional by the end of December 2019, the only viable contingency option would be to extend the current Airwave contracts. The National Audit Office reported that a nationwide, 12 month extension of Airwave could cost an estimated £475 million. The Department told us that when Motorola bought Airwave it negotiated the option to extend Airwave by region and by month, for a fixed price. The Department considered that “essentially, the risk is a financial risk rather than an operational one. If the roll-out timetable were to slip to the right, we would run Airwave for longer and we would be in parallel for longer. We probably wouldn’t be countrywide [...] there are significant costs but the ones identified [by the National Audit Office] are essentially a full-year cost if the entire programme slipped everywhere for a year and that is not what we would expect. It is essentially a financial risk”.¹⁸

16 Committee of Public Accounts, *The National Programme for IT in the NHS: an update on the delivery of detailed care records systems*, Forty-fifth Report of Session 2010–12, HC 1070, 18 July 2011, paras 15–18

17 [Qq 89–90](#)

18 [Qq 3, 8, 45, 46, 83, C&AG’s Report](#), paras 2.18, 3.4

8. The Department confirmed that there would “be a little slippage”¹⁹ against the current transition timetable and that “if the users, very understandably, do not want to compress [the transition] then there would need to be a certain amount of limited extension of Airwave”.²⁰ The Department and Motorola told us, however, there was not yet a detailed plan for how contingency arrangements would be triggered, or how they would operate, and the Department had not yet communicated to Motorola whether it expected to require Airwave extensions or in which regions. Motorola informed us that it would require 12 month’s notification (by December 2018) of any required contract extensions to ensure that it had staff in place past the planned switch-off date for Airwave. Timely communication of information about roll-out plans and contingency arrangements by the Department were also identified by emergency services representatives as key to their own transition plans, to allow them to do early assurance testing, rather than squeeze timescales later on.²¹

9. The Department confirmed it had not budgeted for contingency as it did not know its budgetary settlement beyond 2020. It also told us that the cost of any extensions would be funded from the main policing budget. The Department emphasised that the cost of any delay would be borne across the police, rather than incurred directly by regions facing a delayed transition to ensure there was no financial disadvantage to any region affected. The Department noted that while there would be costs involved if Airwave had to be extended there would also be savings as the suppliers of the new system would not be paid if it was not working satisfactorily. For EE, if coverage requirements were not met, it would not be given its core payment. Similarly for Motorola, the Department stated it would not be paid until the service was delivered. It is not clear, however, how easy it would be to identify the party responsible for any delay since, unlike with Airwave, there is no single prime contractor to be held to account. However, the Department was confident that the absence of a prime contractor did not increase this risk since any prime contractor would have a similar relationship to its sub-contractors as the Department has currently with the ESN suppliers.²²

10. ESN is one of only two systems in the world where emergency services will share a network with the public. The other, South Korea, starts from a considerably higher base since it has 97% national 4G mobile data coverage. South Korea also plans to reserve part of its spectrum for emergency services users, rather than have them share with the public. Other countries are pursuing alternative solutions either fully or partly based on older terrestrial trunked radio (TETRA) technology and dedicated networks, like Airwave. The Department agreed, in an ideal world, it would not want to be first to adopt unproven technology. But the Department considered that the other options it had for replacing Airwave, such as a hybrid system that uses radio for voice communications and 4G mobile for data, were “equally risky” and that it had to consider a wide range of financial, operational, technological and legal factors when making its decision.²³

11. The Department accepted that ESN was a high-risk programme. One of the biggest risks is ensuring coverage across Great Britain, in remote areas and in hard to reach places like the London Underground. EE coverage, currently at 74% of Great Britain,

19 [Q 77](#)

20 [Q 99](#)

21 [Qq 3, 4, 47–52 145](#)

22 [Qq 85–86, 100, 106–108, 111–114, 140](#)

23 [Qq 79–82, 221, C&AG’s Report, para 2.2](#)

will need to be at 97% by September 2017, when transition is scheduled to start. EE was “100% confident” that it could deliver the necessary levels of coverage by that time.²⁴ The Department also told us that using 4G mobile data technology instead of radio technology opened up more options for plugging gaps in coverage, such as by using temporary masts. Discussions were still ongoing, however, between the Department and Transport for London on how best to extend coverage into the London Underground. The Department noted that it hoped to make an announcement in the next couple of months about how underground coverage would be delivered.²⁵

12. The programme also faces a number of other technical challenges. The new system will operate across a commercial 4G network requiring new software to allow emergency services users priority over commercial customers. EE told us it had completed system testing to prove the prioritisation technology would work and that during an emergency its network would be able to prioritise all 300,000 emergency service users if necessary. Devices with the appropriate levels of robustness, voice and dual-mode capabilities are also under development. It is important these devices have “push to talk” capability so that users have to press only one button to contact their colleagues. The Department told us it had prototype devices and was confident that there would be a good selection for users to choose from by next year. In addition, the new system will require end-to-end integration. A wide range of stakeholders emphasised the need for the system to be robustly tested. Motorola told us that in terms of its involvement in integrating ESN it understood the need to test the system at scale and in real conditions. The Department confirmed, however, that it would bear overall integration risk in line with Government best practice which now encourages the disaggregation of contracts. The Department conceded this meant there was no single “throat to choke” in the event of any problems.²⁶

13. The National Technology Advisor told us that the strength of the programme team had allowed the Government to have “much more faith in the programme” than they might otherwise. The programme’s Senior Responsible Owner set up the programme in February 2011 and had remained in post since then. The Programme Director meanwhile has been in post since 2013 and staff turnover throughout the life of the programme has been low. The Department told us it had staff who were very committed to the project and that this made a huge difference. The stability of the ESN programme team contrasts favourably with other high-profile programmes we have examined, such as e-borders, where lack of continuity in senior posts presented a considerable challenge to successful delivery.²⁷

24 [Q 70](#)

25 [Qq 69–72, 77, 78, 82, 204–208, C&AG’s Report](#), para 2.3

26 [Qq 25–33, 94, 111–114, 123, 165, C&AG’s Report](#), para 2.3,

27 [Qq214, 223, C&AG’s Report](#), para 3.2 and Figure 13

2 Commercial arrangements

14. Once the decision to proceed with the Emergency Services Network (ESN) was taken in 2015, the Home Office (the Department) went to the market to invite suppliers to bid for the work.²⁸ Instead of having a single contract as for Airwave, the commercial model for ESN followed current central government guidelines and was disaggregated into several contracts that were competed individually.²⁹ The two main contracts were to provide user services (the public service applications and new technology to run ESN) and to provide the mobile network.³⁰

15. For the user services contract, eventually won by Motorola, 17 initial expressions of interest were made. Not all suppliers followed up their expressions of interest but the Department told us that it downselected five bids and invited best and final offers from two suppliers. The Department told us that the large number of suppliers ruled out at that stage had been down to the fact that the user services contract had highly demanding technical requirements. Meanwhile, five initial bids were received for the mobile network contract, eventually won by EE. The lower number of bids for this contract was not surprising given the limited number of mobile network operators in the UK. Two of those bidders were downselected on price grounds and the Department invited best and final offers from two suppliers.³¹

16. At this stage, however, for each of the two main contracts a supplier withdrew, leaving the Department with only a single option to provide each of the main contracts³² raising the risk of uncompetitive pricing. The Department told us that for the user services contract the supplier that withdrew did so very late in the process, so that Motorola's winning bid was effectively prepared under competitive pressure. For the network contract, the Department developed a should-cost model and, following discussions with the supplier was able to agree a contract it felt represented good value for money.³³ The Department told us that both Motorola and EE would face financial penalties if they did not deliver a working ESN, but believed both suppliers had great incentives to deliver successfully.³⁴ The Government's National Technology Adviser told us that both he and the Cabinet Office had been "surprised that it got down to only one bid for both of those things. We were, though, comforted by the fact that that happened relatively late in the day".³⁵

17. When designing commercial arrangements for the new system, the programme moved away from the prime contractor arrangement it had with Airwave and instead disaggregated ESN into multiple contracts. This will include at least seven frameworks, contracts or grant agreements put in place by the programme and a number of arrangements sourced locally.³⁶ All the ESN contracts are much shorter than the 20-year deal signed for Airwave.³⁷ The Department told us that the combination of using the same technology as

28 [C&AG's Report](#), Key Dates

29 [Q 111](#)

30 [Qq 31, 55](#)

31 [Qq 159–161](#)

32 [Qq 144, 158–159](#)

33 [Q 144](#)

34 [Qq 88, 145–149](#)

35 [Q 160](#)

36 [C&AG's Report](#), para 2.10

37 [C&AG's Report](#), para 1.2, Figure 9

the public and the disaggregated commercial model adopted, which splits out the network from the applications and user services to allow more competition, should provide scope for frequent re-tendering to take advantage of technological improvements.³⁸

18. Under the contract EE are building 250 masts that are being funded by the Department. In order to comply with European Commission state-aid rules other mobile network operators have the right to put their equipment onto any masts in remote areas funded through ESN.³⁹ EE told us that it had committed to give other operators access to the Home Office funded sites, that there was a standard way of sharing infrastructure with other operators, and that it would “give them access as long as it doesn’t slow down our coverage roll-out of ESN”.⁴⁰ The Department noted that other operators may choose not to participate because of the small number of potential customers in remote areas.⁴¹ We have, however, received submissions from other mobile network operators stating that they had not had information on the location and specification of proposed ESN sites⁴² and noted that early engagement between all operators was critical since it was much cheaper to build a mast to carry multiple networks rather than to adapt mast design at a later date.⁴³ The Department told us that it wanted other operators to get an early opportunity to commit to using these masts, but its absolute priority had to be building ESN for the emergency services.⁴⁴

19. Motorola meanwhile has responsibility for setting the specifications and approving devices for use on ESN⁴⁵ which need to be high performing to provide the instant response times emergency services require.⁴⁶ Motorola is also a supplier of devices, raising the risk that it could use its position to exclude other suppliers and favour its own products. The Department told us that it had “been very careful to make sure the specifications do not exclude other providers and are not bespoke. It is a standards-based process”.⁴⁷

20. The main two ESN contracts currently expire in 2023, at the latest.⁴⁸ The Department accepted that concern that the incumbent suppliers may be in a prime position to win future contracts was fair. However, the Department told us that it was optimistic that it would get better deals in future as the market for these new products develops and becomes more standardised over time.⁴⁹

38 [Qq 120–124](#)

39 [Qq 58, 101](#)

40 [Q 59](#)

41 [Q 185](#)

42 Vodafone ([ESC0008](#)), paras 11–12; Three ([ESC0004](#)), paras 5–6; Telefonica UK (O2) ([ESC0007](#)), para 7

43 Vodafone ([ESC0008](#)), para 6–8; Three ([ESC0004](#)), paras 6; Telefonica UK (O2) ([ESC0007](#)), para 8–9

44 [Q 183](#)

45 [Q 189](#); [C&AG’s Report](#), Para 3.16

46 [Q 23](#)

47 [Qq 188–192](#)

48 [C&AG’s Report](#), Figure 9.

49 [Q 120](#)

Formal Minutes

Wednesday 18 January 2017

Meg Hillier, in the Chair

Members present:

Mr Richard Bacon	Nigel Mills
Phil Boswell	Anne Marie Morris
Charlie Elphicke	Karin Smyth
Kwasi Kwarteng	Mrs Anne-Marie Trevelyan

Draft Report (*Upgrading emergency service communications*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 20 read and agreed to.

Introduction agreed to.

Conclusions and recommendations agreed to.

Summary agreed to.

Resolved, That the Report be the Thirty-fifth of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Monday 23 January 2017 at 3.30pm]

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Wednesday 16 November 2016

Question number

Vincent Kennedy, Vice President and General Manager, Motorola Solutions UK, **Simon Frumkin**, Managing Director, Emergency Services Network, EE, **Peter Aykroyd**, Area Manager, Corporate Services, Derbyshire Fire and Rescue Service, and **Jo Beresford-Robinson**, Area Manager, ESN Regional Programme Manager (East Midlands), Lincolnshire Fire and Rescue HQ

[Q1–73](#)

Mark Sedwill, Permanent Secretary, **Stephen Webb**, Senior Responsible Officer, Emergency Services Mobile Communications Programme, Home Office, **David Williams**, Director General, Finance and Group Operations, Department of Health, and **Liam Maxwell**, National Technology Adviser

[Q73–224](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

ESC numbers are generated by the evidence processing system and so may not be complete.

- 1 Chief Fire Officers Association ([ESC0003](#))
- 2 EE ([ESC0009](#))
- 3 Institution of Engineering and Technology ([ESC0006](#))
- 4 Omega 5 (UK) Ltd ([ESC0005](#))
- 5 Police Federation of England and Wales ([ESC0001](#))
- 6 Telefonica UK ([ESC0007](#))
- 7 Three ([ESC0004](#))
- 8 Vodafone UK ([ESC0008](#))

List of Reports from the Committee during the current session

All publications from the Committee are available on the [publications page](#) of the Committee's website. The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

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Public Accounts Committee

Oral evidence: Emergency Services Communications, HC 770

Wednesday 16 November 2016

Ordered by the House of Commons to be published on 16 November 2016.

Watch the meeting <http://www.parliamentlive.tv/Event/Index/22638283-65cd-4e5a-87b1-fd9a7f288c59>

Members present: Meg Hillier (Chair); Mr Richard Bacon; Philip Boswell; Charlie Elphicke; Chris Evans; Kevin Foster; Kwasi Kwarteng; Nigel Mills; Bridget Phillipson; Mrs Anne-Marie Trevelyan.

Sir Amyas Morse, Comptroller and Auditor General, Adrian Jenner, Director of Parliamentary Relations, National Audit Office, Louise Bladen, Director, NAO, and Marius Gallaher, Alternate Treasury Officer of Accounts, HM Treasury, were in attendance.

Questions 1-224

Witnesses

I: Vincent Kennedy, Vice President and General Manager, Motorola Solutions UK, Simon Frumkin, Managing Director, Emergency Services Network, EE, Peter Aykroyd, Area Manager—Corporate Services, Derbyshire Fire and Rescue Service, and Jo Beresford-Robinson, Area Manager—ESN Regional Programme Manager (East Midlands), Lincolnshire Fire and Rescue HQ.

II: Mark Sedwill, Permanent Secretary, Home Office, Stephen Webb, SRO Emergency Services Mobile Communications Programme, Home Office, David Williams, Director General, Finance and Group Operations, Department of Health, and Liam Maxwell, National Technology Adviser.



Report by the Comptroller and Auditor General

Upgrading emergency services communications: the Emergency Services Network (HC 627)

Examination of witnesses

Witnesses: Vincent Kennedy, Simon Frumkin, Peter Aykroyd and Jo Beresford-Robinson.

Chair: Welcome to the Public Accounts Committee. We are here to question a number of people—our first panel and, later, officials from the Home Office—about the very important programme to upgrade the emergency services communications, based on a Report by the National Audit Office.

Emergency services UK-wide vitally rely on being able to communicate with each other. They currently use Airwave, which is run on a digital radio system. We are clear as a Committee that any new system needs to be at least as good as, and ideally better than, the current system. An effective and secure system is vital for the protection of all front-line staff—police, firefighters and others—and to their contribution to protecting the public. Whether those individuals are in a rural location, in London, on the London underground or policing something like a football match, they need to have the same degree of confidence in the system.

I am delighted to welcome our first panel, which includes representatives of some of those frontline organisations. We have Jo Beresford-Robinson, the area manager for the emergency services network regional programme in the East Midlands Fire Service. We have Peter Aykroyd, the area manager of corporate services at Derbyshire Fire and Rescue Service. Vincent Kennedy is the vice-president and general manager of Motorola Solutions UK, which, to be clear, has an interest in the new ESN, and also owns Airwave. Simon Frumkin is the managing director of the programme for EE, the new provider of the new system.

Welcome to you all. We are aiming for this part of our session to last about half an hour. I will ask Nigel Mills to kick off.

Q1 **Nigel Mills:** So, Mr Aykroyd and Ms Beresford-Robinson, I think it is just over a year until you start transitioning to using this new system. Perhaps you could tell us whether you are excited at the prospect or rather nervous about that situation.

Peter Aykroyd: I think it is fair to say we are excited about the prospect. The nervousness comes with the challenge of delivering such a programme. Certainly, we look forward to those challenges. We are acting as positively as we can and doing as much as we possibly can to prepare for that change. Members will be aware of the challenging timeframes on the programme. We certainly look forward to the challenge and some of the benefits that we hope to see from that programme in future.



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Q2 Nigel Mills: I think that, technically, every organisation gets a choice as to whether they switch over, and they have to be convinced the new one is as good as Airwave. You are sat here confident and optimistic that this will be as good as Airwave in just over a year's time.

Jo Beresford-Robinson: If we follow what the business case said, that is what we are being assured. I am quite sure that all authorities—local fire, police and ambulance services—will maintain the fact that we will need assurance before our chiefs sign up to it, so nobody will be switching over until we are happy that we have the same service, or a better one than Airwave is providing us with.

Q3 Nigel Mills: The NAO Report tells us—and I can tell you from my experience in Derbyshire—that EE coverage is nowhere near the 97% that Airwave has. Are you not at all nervous, at this stage, that there might be some rather large gaps in rural Lincolnshire or rural Derbyshire, Mr Aykroyd?

Peter Aykroyd: I can pick that up, certainly for Derbyshire. Obviously there is concern over getting the right amount of coverage, and we would seek that assurance before we recommend moving on to the new network. Remember that the driving factor for us, from the fire and rescue organisation, is public and firefighter safety. We need assurance that we have that resilient, reliable network, such that the emergency communications work and flow.

The key thing for me—certainly on the network—is that we have a good, early flow of information, and that we are kept informed of the network roll-out plans in the areas that are fully 4G compliant, so we can get out early doors and test that network, rather than condensing everything late in the programme and then trying to squeeze in a lot of testing in a short period of time. The earlier engagement we get, the better communication will be. We can start building that up. I think investment early on in the assurance and testing will pay dividends later in the programme, because we will have that assurance. Like any sort of audit process, if we get assurance when we do the audit in certain areas, it makes it easier for us then to accept that the network coverage is up to the standard we require.

Q4 Nigel Mills: But at this stage, you are both fully bought into having to switch over from Airwave, starting in just over a year—

Chair: Sorry, I think we are talking about figure 12 on page 35.

Nigel Mills: So you both still fully expect to be using the new system in a couple of years' time—in effect, during 2018.

Jo Beresford-Robinson: We hope to be using it. I don't know whether we expect to be. We expect that there might be some movement to the right, because we have already challenged the timescales and we have done some work around looking at planning and planning assumptions. I think we expect to be switching on and utilising the system, but not necessarily within the timeframes that were initially being discussed.

Q5 Nigel Mills: How much parallel running would you like to have available,



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so that you can make sure the glitches are ironed out?

Jo Beresford-Robinson: I think total parallel running, to be honest, until we are fully sure that the new system is fit for purpose.

Q6 **Nigel Mills:** What length of time would you like to have parallel running for before you would be happy to turn off Airwave in the East Midlands?

Jo Beresford-Robinson: Our understanding is that the Airwave system will not be turned off until ESN goes totally live. Bearing in mind that we have other regions—cross-border regions—that are going later than ourselves in the East Midlands, that parallel running will obviously need to go right until the very last board is switched over.

Q7 **Nigel Mills:** I understand that, but under the current timetable, you will have parallel running for the whole of 2019, so you get a year of parallel running. If that became six months, would you be saying that was unsustainable?

Jo Beresford-Robinson: As I said right at the beginning, as long as we can assure our chiefs that it works, we will be happy to turn over.

Peter Aykroyd: I agree with Jo; it is about that assurance. If we have six months of excellent, fault-free running on a new network, we would be more assured in saying, "Yes, that's enough dual running." If that is not the case and we have to switch across to Airwave on a regular basis, because the network is letting us down, I would not feel assured in recommending to the chief officer in an authority that they switch off Airwave.

Q8 **Nigel Mills:** The contracts kind of mean that Airwave gets switched off at the end of 2019. I am trying to work out what will happen if you are saying you think the timetable will slip to the right, and you are expecting parallel running to start in late 2018 now. If we are saying that we need at least six months, and it slips more than a few months to the right, the East Midlands has a problem—and, frankly, nearly every other region has a big problem at that point. Are you feeling a little nervous yet that turning off Airwave at the end of 2019 might be a little optimistic?

Peter Aykroyd: I think there is nervousness, but it is probably early in the programme for us to give a definitive answer on that. For us to make that sort of risk-based decision really depends on how the technology rolls out.

Q9 **Chair:** You have mentioned that you have raised this up the line in your own organisations. Do you feel there is enough control by you locally to make that call? In the end, it is the Home Office that makes the judgment about whether to extend the contract, potentially at huge expense to the taxpayer.

Jo Beresford-Robinson: I think the governance arrangements, the local authority arrangements—as opposed to the authority of the Home Office—are strong enough for them to state whether they are happy to move over. We need to ensure that the Home Office understands the processes



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that local authorities have to go through, in terms of having to sign up to this and sign it off.

Q10 **Chair:** Do you think that is true at the moment—that the Home Office is aware of that process?

Jo Beresford-Robinson: We could always engage further with them.

Chair: You are very diplomatic, Ms Beresford-Robinson!

Q11 **Nigel Mills:** I have one last question. How happy are you with the new devices that you will be having to use on the new system?

Peter Aykroyd: We do not have sight of the new devices yet, so we are not able to comment on that, unfortunately.

Q12 **Nigel Mills:** That is quite important, isn't it, because aren't they due to be available quite shortly for testing? Have you had any input into what the system requirements will be, and in terms of what you would like to see on the devices, or is somebody else choosing that?

Jo Beresford-Robinson: The sector has had input. I think it was about two years ago that the specification was developed. I know that we need to be looking at that specification again, just to revisit it, because of the reallocation of time to the right, and certainly the programme has had a change of tack, in terms of the procurement strategy, so we, the users, are waiting to see the devices.

Q13 **Nigel Mills:** Are you slightly nervous that you do not now get much say in procuring the devices? Somebody—probably Motorola—is going to produce a device, and your choice is to take it or leave it, really.

Jo Beresford-Robinson: Again, we want to be involved in the testing, the trialling, of those devices.

Q14 **Nigel Mills:** Time is a bit tight for that now, if we are going to start changing specifications for devices. We are meant to have them in a couple of months; they are meant to be out being tested. It is a bit late to start rewriting specifications, isn't it?

Jo Beresford-Robinson: That is why our view as user organisations is that this programme will have to slip to the right somewhat.

Q15 **Chair:** How much have you both invested in other technology, such as iPads—technology other than Airwave—to deal with data in your organisations?

Peter Aykroyd: On the front-line fire appliances, we have a device that we call a mobile data terminal, which uses data transfer for updating risk information that front-line firefighters access. It is also used for status messaging—a typical message back to a command-and-control centre that an appliance or a vehicle is at the scene of an incident and when it is available to return. So we do use that technology already for a certain amount of data.

Q16 **Chair:** What about you, Ms Beresford-Robinson?



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Jo Beresford-Robinson: I am overseeing all five fire services; Pete can obviously discuss the situation for Derbyshire. The five fire services are all very different, because of the different funding mechanisms, but in terms of the technology, I think they are all trying to advance around the use of data.

Q17 **Chair:** So you invested in that equipment, and of course it will be obsolete once the new system is fully up and running. Is that right?

Peter Aykroyd: We are not sure on that—again, decisions we are waiting for.

Q18 **Chair:** So you are going to do double-running locally, on your own initiative.

Peter Aykroyd: Well, for example, with mobile data devices, we need assurance or clarity as to whether the device can connect to the network. Will it meet security and testing requirements, or is there a way it can be connected without going through those sorts of stringent controls? We have not got clarity on that.

Q19 **Chair:** This is the new kit that we were just talking about.

Peter Aykroyd: Our existing kit. Can we connect existing equipment? Can we tether it to a router-type system, or can it connect to the network? We still have not got clarity on that.

Q20 **Chair:** So you might have to write all that off, but you don't know.

Peter Aykroyd: Potentially, but we don't know.

Jo Beresford-Robinson: What we are being told is that the priority devices, which are the MDTs—mobile data terminals—will be able to tether to the ESN devices. One of the issues that we have is that it's 4G. Within the fire and rescue services, they have 3G and 2G kit, so that kit would become obsolete. You therefore need some capital in your programme to upgrade that.

Q21 **Chair:** Have you done assessments in your organisations on the cost of that? Are you able to provide us with that information on the cost of the write-off?

Jo Beresford-Robinson: Certainly some of the TomTom-type devices would have to be replaced, but in the main, fire services are keeping up with technology. I do not think that there is an awful lot of legacy that they would have to move.

Q22 **Chair:** It would be helpful if you could both write to us or give us an indication, and we might seek that from other sources, too. I just wanted to turn to EE and Motorola. First, Mr Kennedy, we just heard about the devices that are supposed to be ready and available by the end of 2017, as we understand it. How are you seeing progress from Motorola on getting those devices out?



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Vincent Kennedy: I guess it is important to understand our role in this particular programme. There are a number of lots or sub-contracts. The Home Office is acting as the overall prime contractor. The lot we are delivering does not include devices, so we are not responsible for the devices. I can certainly comment, because I know the business, but our lot is the user services: SIM card management, data centres, help desks and so on.

I can comment on the devices. There are two types. The data devices, which I think colleagues here are describing, are relatively straightforward. Yes, they have to be 4G, but data can attach to the new emergency services network relatively easily. The voice devices are more complex. When you move the voice service on to a commercial mobile phone network, the device has to act in a specialised way. What I mean by that is that if I picked up my phone and dialled your number, it would take a few seconds to ring. It might take six seconds to you or five seconds to Mr Morse. In this world, when I am the commander of a team at a firearms incident and I press the button on the device and say, "Don't fire", you instantly all have to hear the same thing. It is a big problem if you hear, "Don't fire", and another person hears, "Fire." That is just an example, but the voice piece makes the device more specialised, and it has to work in a special way. The mobile data terminals that are there—it is really a new SIM card or a new modem to attach to the network. Again, it is not part of our programme at all, and you can check with the Permanent Secretary, but there are plans to try to reuse as much as—

Q23 **Mr Bacon:** You are referring to the push-to-talk latency? I am reading an article from "The Register", which is an online IT journal. It gives the example of a commander in the armed forces with a team of snipers giving the command, "Don't shoot". It goes on to say, "With 4G you might hope that this is fixed", but that it isn't that simple. Are you confident that the latency can be low enough with 4G that it won't be a problem, and that it will be as near to instantaneous as to make no difference? It's not at the moment, is it?

Vincent Kennedy: I guess this is the first project of its kind. The NAO has said that it is an ambitious first-of-a-kind project. The context is that we have been investing in the R and D of mobile LTE solutions for public safety since 2010. We have done a lot of design and R and D work in this space, the reason being that it is the trend for the world market. It is where the public safety market is going. They will eventually all be using mobile broadband, mobile data and voice. If it works to design, the latency can be solved, but that is why the design is so strict around the devices and the network.

Q24 **Mr Bacon:** And we are not there yet.

Vincent Kennedy: Well, we are building. We are designing and building—

Q25 **Mr Bacon:** So it is correct that we are not there yet.

Vincent Kennedy: We can prove the latency in a lab environment, but obviously you need to get into the field and do the testing.



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Q26 **Mr Bacon:** You need to prove it at scale and in real conditions.

Vincent Kennedy: Correct, and under pressure. That is why the testing that Mr Aykroyd referred to is crucial. These are big technology projects, but they are not like regular IT projects. The people who use this technology—their lives depend on the technology working.

Q27 **Mr Bacon:** How long will it be before you prove it to yourselves?

Vincent Kennedy: We have a testing regime all through the spring and summer. We will hopefully be ready for operational trials in the autumn.

Q28 **Mr Bacon:** In the autumn of 2017.

Vincent Kennedy: Yes.

Q29 **Mr Bacon:** And how long will those operational trials go on for?

Vincent Kennedy: I think that discussion is ongoing between the Home Office and the user groups. It will be months; it won't be weeks.

Q30 **Mr Bacon:** So when we hear that the testing timetable has been compressed, which is something we hear very frequently, we should be worried.

Vincent Kennedy: The chief fire officer, the chief police officer and the chief ambulance officer have a duty of care to their people. They won't accept the service until they are happy with the service. This world is customer-led. You have to prove to these people that if their lives depend on it, it will work.

Chair: Mr Frumkin, do you have anything to add?

Simon Frumkin: I would endorse exactly the same thing. We take our responsibility extremely seriously, and we won't compromise on quality through the testing, which is why we are working very closely with integrated testing.

Q31 **Chair:** The Comptroller and Auditor General has a question.

Sir Amyas Morse: Just a quick question: this is a world first for you, and it is a new product area, but am I right in thinking that your success is dependent on the quality of the systems integration being provided by the Department?

Vincent Kennedy: You are right that it is a first of a kind.

Sir Amyas Morse: I am just repeating back to you what you have said to me, more or less.

Vincent Kennedy: There are a number of subcontractors. There is ourselves at the centre, there is EE on the coverage, and there will be somebody doing London underground and air-to-ground. When we come together and plug everything together, the end-to-end testing has to prove the system. While we will prove it to ourselves, the most important



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proof is that the users actually then scientifically test it and check if it is working the way it should.

Sir Amyas Morse: Forgive me; what I am asking is this: say you have got a lot of different components and you are responsible for delivering your bit. The system-integrating activity is happening at the Department. Is that right?

Vincent Kennedy: I guess they are overseeing the integration. We're doing part of the integration. Mr Frumkin's organisation integrates to our system. We integrate to whoever does London underground and so on. Obviously, they are overseeing it, and I believe they have hired a consulting company for Lot 1 to do the assurance, witness the test and make sure it is checked correctly. Ultimately, the arbiter of success is the user groups that will eventually test it. Once they are happy it is safe, they will use it.

Q32 **Chair:** Can I ask Mr Frumkin about the network? This is new and cutting-edge—the civilian network and the emergency services network will be the same. What will the impact of the volume of users be on the network? The emergency services get priority, as we understand it, but have you tested that to the volume that it can be applied to?

Simon Frumkin: Yes. It is important to emphasise that we are on track, in terms of our delivery. Most importantly, we have completed the system testing, which proves that the prioritisation features in the software and the technology features that are mentioned in the NAO Report actually operate as expected. These are new features of the 4G technology, and we have proved that prioritisation works.

Q33 **Chair:** So you have really proved it works? So, emergency services will get priority, but that could mean that some of the civilian network goes down in an emergency? If there was a big incident, like the 7/7 incident, which is obviously very much in our minds, and the emergency services get priority, that would mean the civilian network would go down during an incident of that size, if necessary, to maintain service.

Simon Frumkin: At the extreme, we would be able to prioritise all of the commercial network for the emergency services. We think that is very unlikely. Our network is dimensioned for 30 million customers, compared with 300,000 emergency services users. The chance of us having to repurpose and reallocate all of the spectrum on any cell, or range of cells, is unlikely, but we could do that if we needed to.

Q34 **Chair:** That is very helpful. Sometimes the public can be very useful in an emergency, too. I mentioned 7/7. As a London MP with a constituency next to what happened at Aldgate, we were very concerned about the whole issue that the emergency services couldn't communicate underground. Of course, there was a review, and that's why Airwave came in in the first place. When Airwave goes, there are still discussions going on about use underground. Where has that got? Are Londoners and others safe if an emergency happens underground?



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Simon Frumkin: The Home Office is in discussions with TfL. We have been passed those discussions, in terms of potentially supporting the deployment of LTE technology within the underground. Those discussions are still ongoing between the Home Office and London Underground.

Q35 **Chair:** They are still ongoing, yet the roll-out is going to begin in a couple of years' time—or less than two years' time. It's easy to say here that conversations are ongoing, but are you optimistic that those conversations will lead to a good solution for using this new system underground?

Simon Frumkin: Yes. As I have said, the main conversations are between the Home Office and TfL, so it may be best for them to comment. I know that they are looking at a number of different contingencies, and options to make sure that there is coverage one way or another on the underground, when the underground transitions.

Q36 **Chair:** So what would you say you need? We are going to be talking to the Home Office next. From your point of view at EE, what do you need to make sure that there is secure coverage on the Underground in the event of an emergency?

Simon Frumkin: Either we would need time to deploy LTE on the Underground, or the Home Office would need to agree an alternative solution with TfL.

Q37 **Chair:** Okay. We talked just now about the volume of emergency service users—about 300,000—compared with 30 million other users. Having been a customer of EE in the past I know there are times when it can be difficult to get a signal, and colleagues say that at football matches it can be difficult at half-time. Do you ever have outages at busy times, such as new year or coffee breaks in the Olympics?

Simon Frumkin: We are constantly upgrading our network and dimensioning it for the increased data use—obviously data usage is increasing exponentially. We are always in the process of putting more and more capacity into our network, both over—

Q38 **Chair:** Do you ever have outages? You must have some sometimes.

Simon Frumkin: We sometimes have outages, but we have a very targeted approach to tackling hotspots and sites that get into congestion, making sure that we upgrade them to stay ahead of the demand.

Q39 **Chair:** How are you making sure that you would be able to cope with the demand if there was an outage at the same time as there was an emergency?

Simon Frumkin: When we talk about outages, I am talking about a site going to congestion rather than an outage. What would tend to happen is that if there are too many users or too much usage on a particular cell, the performance slows down. That is where the prioritisation features of the network come in, which mean that we can allocate the spectrum and



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dedicate the bandwidth for the emergency services, so that the performance does not degrade.

Q40 **Chair:** Just to be absolutely clear, that happens instantaneously, does it?

Simon Frumkin: We can do that dynamically.

Q41 **Chair:** So it is an automated system. It is not reliant on someone noticing and pressing a button.

Simon Frumkin: That is right, it is an automated system.

Q42 **Chair:** I was going to ask you something, Mr Kennedy, but tell me if it is outside your remit. You—Motorola—bought Airwave and there have been negotiations about what would happen if we went on beyond the end of 2019. Are you aware of any offers made by Airwave before you bought Airwave to continue running so that this programme could be brought in at a slower pace?

Vincent Kennedy: I am not aware of previous offers that the previous owners made. From reading the NAO Report, I can see there were some discussions around continuing the service and the pricing of the service, so I know as much as is in the Report.

Q43 **Chair:** There has been some discussion with you now, as the owners of Airwave, about what would happen. Will you tell us in your own words what would happen if the Home Office, or indeed the end users, felt that the 2019 cut-off was just too radical, too steep? What would your position be, and how would you make sure that our emergency services were supported?

Vincent Kennedy: Yes, we obviously had quite detailed discussions. In the process known as 'change of control'. So Airwave is designated as critical national infrastructure in the legislation and it is a PFI company, so within the contracts you could not buy Airwave without the Home Secretary's approval. Once you approach the Home Secretary to look for approval, clearly you get into a detailed discussion about what you are going to do with the asset, the ownership, the security arrangements and all of that.

Our interest in it was really to have control of it, so that we could migrate the users more safely, keep the parallel running going and build what I would call the inter-op. Today, you cannot talk between the EE network and Airwave, and we are having to build a bridge so that you can actually talk across, because parallel running is no good if you cannot talk to the people who are on board it—if you are on one network and I am on the other.

We are doing that, but we have also agreed that if necessary—the way that the regional migration happens is that it happens in a sequence. There are 12 regions, they start in 2017—

Chair: Yes. I think figure 12 in the pack illustrates this very effectively.



Vincent Kennedy: One of the things that could happen is that the last two regions, if there was an incident or something happened, could end up going a month or two into 2020. In parallel, we have to design and set in motion taking down the network in 2020, because the PFI contracts all run out on a single day at the end of 2019. So one of the commitments that we gave was that, if needed, in an unplanned or emergency situation, we would keep the last regions going until they were on the EE network. Really, you have to, because the emergency services cannot be—

Q44 **Chair:** You were saying that you would do that free and gratis.

Vincent Kennedy: No. We—

Q45 **Chair:** What is it going to cost the taxpayer?

Vincent Kennedy: We agreed a fixed price per region per month, but the difficulty—

Q46 **Chair:** Per region per month? So you could do it literally month by month.

Vincent Kennedy: To an extent. The difficulty I have is that it is quite a big operation—4,000 leases, 16 data centres and 500 people—so I have to start to set in train the take-down planning and the exit of that long before; that does not start on the 1 January 2020. It is possible, at least, to sequence the dismantling in a way that leaves a couple of regions going over a few months, but it needs to be at that order of magnitude. An unplanned, long extension is going to be very difficult—I would not say impossible—because it is an unplanned thing and you have landlords who want their sites back and you have to give notice well in advance. It is possible to do. It should not be necessary, but with public safety you always have to plan. You cannot leave the Met police without the network, so if they are the last region and they need two months in 2020, you have got to provide the service.

Q47 **Chair:** Are you planning on that? Have you got a plan for doing that if necessary, or are you waiting for the Home Office to make a decision?

Vincent Kennedy: We have a plan, and I think that the NAO Report picked up on the contingency plan. I know how I can terminate the network but still keep sub-regions running. We have worked out technically how. The network is eight separate pieces, so once we know the regions, we can work it out before we start the dismantling project. We know how we can do it, but what we do not yet know is whether it will happen and which regions it is.

I think that one of the recommendations in the NAO Report was around just fleshing out the contingency plan. We have three years to do it, and we have an exit board with the Department of Health, the Home Office and the fire services, so there is an exit committee and we are getting into the detailed planning of the “what if” scenario—what if there was a terrorist event at the end of 2019 and it meant that you could not do anything for three months? We have to be ready for all those eventualities in this world.



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Q48 **Chair:** We understand it would cost £475 million a year, if it were to be extended for a whole year and beyond.

Vincent Kennedy: That is the figure in the NAO Report. It is quite a derived figure because it is not really possible to go and extend everything for a year. In an unplanned scenario, you have to be in the middle of taking down the network. If that was the case, you would have to plan much—two years in advance you would have to say, “Actually, I need it for another year,” because if I give notice to all my supply chain, I cannot unwind that once I find out there is an issue.

Louise Bladen: I just wanted to clarify that the £475 million in the Report is a 12 month—a year’s—extension for all regions. We did appreciate that you could, as you say, do it monthly and do it by region, but we wanted to give that figure so that there is a total of what the maximum might be in the event of that happening.

Q49 **Mr Bacon:** What is the latest date by which one would have to give notice of the intention to extend, given what you were saying a moment ago?

Vincent Kennedy: The date we have agreed is a minimum of 12 months’ notice—so, December 2018.

Q50 **Mr Bacon:** By the end of December 2018?

Vincent Kennedy: Yes, by the end of December 2018 I would need to know because I have a big supply chain behind me that I have to give annual notice to.

Q51 **Mr Bacon:** You have a written agreement that by 31 December 2018, if there is to be an extension, you will be told?

Vincent Kennedy: Yes, I need notice a year in advance.

Q52 **Mr Bacon:** I am sorry. I appreciate that you need notice—you have told us that already—but my question is, have you got a written agreement that states that you will be given notice by 31 December 2018 if it turns out that there is a need to extend?

Vincent Kennedy: Yes, that was part of our agreement with the Home Office.

Q53 **Chair:** You talked about the dual running. This will require different kit that means that you can switch from Airwave to the ESN network, will it not? How far in advance is that?

Vincent Kennedy: Actually, from the user’s perspective it will be seamless. If I am on a tetra-radio and I push to talk and you are on the ESN network, your ESN device will hear me. We are doing it in the background at the switching level. We are connecting our Airwave switch to the EE switching network, so the radios they have today and the LTE devices they buy will be able to talk to each other without them having to buy any more kit.

Q54 **Chair:** What happens to the Airwave infrastructure at the end of the



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contract? You said you are winding down and giving sites back to landlords. So is that it—it's obsolete?

Vincent Kennedy: That's it. It is a 20 year old system; it has not been refreshed. It is the end of the PFI and the base stations and switches are 20 years old, so they are just about lasting until then.

Q55 **Charlie Elphicke:** A couple of questions. Mr Kennedy, you say this is an ambitious, first of a kind project. It is "technically cutting edge" and unproven and "has not yet been used, nationwide, anywhere in the world." As things stand, are you on track for the transitions across the country on page 35 of this Report?

Vincent Kennedy: Again, with the part we are doing, the lot 2 part—the user services, the data centres, the push-to-talk technology—yes, we are on track. We have gone through the design phase, we are in the build phase and this month we have a major deliverable and will move into the test phase in the spring. So yes, we are on track.

Q56 **Charlie Elphicke:** If it falls behind, who takes the risk?

Vincent Kennedy: I guess the programme risk sits with the prime contractor, the Home Office. We have our own risk to manage. If we fall behind, we obviously manage our own contract risk in that respect.

Q57 **Charlie Elphicke:** Mr Frumkin, obviously your plan is to use these base stations, which give you superb coverage under this contract, for your commercial operations as well. Is that correct?

Simon Frumkin: That's right.

Q58 **Charlie Elphicke:** That being the case, will other operators like Vodafone, Three and all the rest of them have equal access?

Simon Frumkin: Yes, they will. A state aid decision states that we are not getting a material benefit from the contract. Just over 250 of the sites we are building are being funded by the Home Office. The rest of the network investment and the coverage enlargement are being funded by us. For the specific sites the Home Office is funding we have committed to give access other operators.

Q59 **Charlie Elphicke:** In that case, can you explain why all the other operators are writing to us and indicating that what you said does not seem to match their current understanding?

Simon Frumkin: In fact, we met Vodafone yesterday and had a constructive meeting. There is a standard way of sharing infrastructure and we are talking to them about giving them even earlier notice than they normally get in terms of the infrastructure we are proposing to build. We will be giving them the right to share that infrastructure if they wish. Obviously, delivering the ESN coverage has to be our priority, so we will give them access as long as it doesn't slow down our coverage roll-out of ESN.

Q60 **Chair:** We understand it costs about five times as much to retrofit



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technology to an existing site. Is that under your consideration? I appreciate you have to deliver the network, but are you considering that when you are planning and talking to other telecoms companies?

Simon Frumkin: Yes. I am not sure we agree with the figure for that cost. Clearly it depends on the structure we build and the circumstance, and who wants to come on the configuration but, as I said, we will give access—

Q61 **Chair:** I think that figure came from one of your competitors, so I am not surprised there might be disagreement about it.

Simon Frumkin: As I said, there is a standard process during which we notify one another about the infrastructure we are building. We are proposing to give even earlier notice than we normally do under the standard process and, as long as it doesn't slow us down in the ESN coverage, we propose to give them access.

Q62 **Philip Boswell:** I have a question about coverage with a focus on Scotland and the rural UK. The last 5% to 10% of any major project is always the hardest and often the most expensive to complete. Your target for 97% coverage across the UK is committed to be reached in 2017. How much of that 3% is in Scotland?

Simon Frumkin: How much of the last 3% of coverage is in Scotland? Unfortunately, that is a calculation I cannot do here and now, but I am happy to provide you with a written answer.

Q63 **Philip Boswell:** Are you keen to hit 100%, and when?

Simon Frumkin: The requirements we have for the emergency service are the same as Airwave's current threshold and that is based on road coverage. The formula is based on road coverage and that is the coverage we are rolling out.

Q64 **Philip Boswell:** Okay. My second question goes back to figure 12 on page 35, which shows large swathes of rural UK—Wales, Scotland and the south-west—being last to transition. This is a substantial part of the UK. The contingency illustrated in figure 12 is for transition only. Following on from Mr Elphicke's earlier question, if you are not ready to shut down Airwave system in 2019, who pays the contingency cost specifically of parallel running beyond 2019 under your contract?

Vincent Kennedy: As I said, if the last region for some reason needed to go to February 2020, I believe the Home Office—you will have to double-check this with the Permanent Secretary—funds the region and I am not sure how it would work that out with the region.

Chair: That means the taxpayer.

Q65 **Kevin Foster:** That seems apt, given that the last region is the south-west, where I am one of the MPs. Looking at figure 12 on page 35, every area has a contingency period and a period of parallel running indicated except the south-west. How confident are we that that transition plan is realistic and accurate?



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Vincent Kennedy: I guess it is a good question for the Permanent Secretary. *[Laughter.]*

Simon Frumkin: I would say from a coverage perspective that the south-west, like the rest of the country, is a region we feel confident and on track to deliver coverage for.

Q66 **Kevin Foster:** You say it is like the rest of the country, but you have only got to look quickly at the diagram to see the rest of the country has a period of contingency and parallel running. Why not the same for the south-west?

Simon Frumkin: I am referring to the coverage roll-out rather than the transition activity.

Q67 **Kevin Foster:** That is a rather vital point, though, wouldn't you say?

Simon Frumkin: Well, clearly coverage is an area that it is critical that the emergency services get confidence in. We will be able to test the coverage in advance of the transition to give those in the transition greater confidence about the coverage.

Q68 **Kevin Foster:** Just to be clear, in every region except the south-west you have a contingency period and a period of parallel running planned for in the document. Do you think that is a secure position to be in, or do you think we might end up with the position that we have just had outlined that it might end up overrunning for a month or two in that area?

Simon Frumkin: As I said, from a coverage perspective we can be confident in terms of the actual transition and contingency. That may be a question to direct to the Home Office.

Q69 **Chair:** Finally, can I ask you two questions? It is a quick-fire round. What is your percentage of confidence that this will roll out in time? And what keeps you awake at night about it?

Jo Beresford-Robinson: If you are looking at the current timeframe, my confidence is quite low.

Chair: Below 50%?

Jo Beresford-Robinson: Yes, lower than 50% that it will be achieved within the current timeframe for the early adopters of the ESN. I think for the later transition regions I am probably more confident, but seeing as I am in one of the early ones I am less confident.

Chair: So what is keeping you awake at night?

Jo Beresford-Robinson: What is keeping me awake at night is the assurance that this technology is fit for purpose and that public safety and the officers' safety is actually going to be there.

Peter Aykroyd: I agree with Jo: I would certainly be under 50% on that, probably down to about 30% on whether we will meet the existing timeframes. The thing that gives me the most concern again is being able



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to fully end-to-end test against that full 97% of network within the timeframe to give that reassurance and confidence to fellow officers and members of the public and the fire authority.

Vincent Kennedy: For the part we are responsible for—data centres to centralised services—I am 100% confident we are delivering. We are a year in and we are still on track. We have rolled out many public safety networks in many countries and the thing that always keeps you awake is the coverage testing and verification and the certification. That is the piece that you have got to allocate enough time to.

Simon Frumkin: I would agree. We have signed up to challenging coverage targets and that is what keeps me awake. I am extremely busy at the moment, as you can imagine. To give you the scale of it, we are upgrading between 100 and 150 sites to 4G every single week, so there is an enormous amount of activity going on on the network. We have moved from 70% to 74% coverage since the NAO Report was written, but we have an awful lot to go—

Q70 **Chair:** So how confident are you that you can actually deliver the 97% coverage?

Simon Frumkin: I am 100% confident we can deliver the coverage.

Q71 **Mr Bacon:** By when?

Simon Frumkin: Well, I am very confident we can deliver the coverage by the time we transition. We need to prove to the emergency services that that coverage is there for them to transition.

Q72 **Mr Bacon:** You were 100% confident and now you are very confident—there is already a difference there. The question several of my colleagues and I asked was: by when?

Simon Frumkin: I am very confident that we can deliver the coverage by next September, which is when we are required to deliver the coverage.

Q73 **Mr Bacon:** September 2017?

Simon Frumkin: Yes.

Chair: Most of our other questions are now for the Permanent Secretary and other colleagues from the Home Office. Can I thank you very much indeed for your candour and your time? The uncorrected transcript of this hearing will be available on the website in a couple of days and we will send you copies. If you have corrections, please let us know.

The Report may not be out before Christmas, which is five weeks away, but it may be available early in the new year. We may call you back at some point because this is such a vital programme for the security of our emergency services. Thank you very much for your time.

Examination of witnesses

Witnesses: Mark Sedwill, Stephen Webb, David Williams and Liam Maxwell.

Chair: This is our second panel looking at the upgrade of emergency communications, the Emergency Services Network, which will replace Airwave. I welcome our new witnesses, who are David Williams, Director General of Finance and Group Operations at the Department of Health—you are a frequent flyer, Mr Williams, so welcome back—Mr Mark Sedwill, Permanent Secretary at the Home Office, who is the overall responsible person for this programme; Stephen Webb from the Home Office, who is the senior responsible officer for the programme, so it is a big job for you, Mr Webb; and Liam Maxwell, the national technology adviser, who I suppose is the technological expert on the programme.

We know that, unusually for NAO Reports, there was a strongly worded paragraph on page 13, and you did not accept the NAO's judgment about the underrating of the risks. We have just had a pre-panel, some of which Mr Maxwell heard and might be worth recapping. Two witnesses at the user end ranked their confidence that this would deliver on time: one said below 50% and one was explicit in saying as low as 30%.

On the technology side, there is a big challenge in getting EE's coverage up from its current 77%—it said 74% as of today—to 97% by next September, which is less than a year, and developing all the devices that are not out there yet. That is also a concern. There is also a challenge in making sure all the users are ready—we have heard users today expressing scepticism—and a very ambitious timetable, which was one of our main concerns when preparing for this hearing. As well, if that timetable is delayed, there will be a huge potential cost to the taxpayer, which the NAO has quantified as £470 million if there is a full year, full UK-wide on-running, although I am sure you can come up with figures month by month, region by region. Nevertheless, that is the potential risk to the taxpayer, so we want to focus on it.

This Committee looks at many programmes, so you will forgive us if we are erring on the side of scepticism at this point. We want to hear from you some assurances on how you are ensuring the project will deliver and that our emergency services will be safe.

We are pleased, Mr Webb, that you have been the SRO for this programme pretty much from the beginning, which is almost unique, I think, Mr Bacon, in the history of the civil service. We welcome the fact, Mr Webb, that you have deep knowledge of this and we will be using that and probing you closely.

Q74 **Nigel Mills:** Mr Webb, could you tell us how you are feeling about this project. Are you confident it is on track?

Stephen Webb: I am very confident that we have a programme that is deliverable. We have some suppliers working well and working well together. We are currently working on some potential revised plans for the timescale, but overall I am very confident that we will get it in very close to the timescale that we previously agreed at the final business case.



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There will be a little slippage, I accept that. We accept the NAO Report's finding—this was an ambitious timescale—but our argument has always been that it is best to go for an ambitious timescale because we have that contingency to allow us to buy as much extension as we need. We are going as fast as we can. If it slips, we know how much it will cost, but we want to minimise that as much as possible—partly for the savings, but largely because of the enormous operational benefits that this system promises.

Q75 Nigel Mills: What do you think are the big risks that might cause further slippage beyond what you now expect?

Stephen Webb: With all the individual aspects of the programme, I think we have got a series of deliverable plans. There is obviously a lot of them and they need to come together, so any delay in one can potentially cause knock-on delays in the others. For me, it is less the technical risk than the sheer logistics of it when we talk about coverage and some of the other areas—the Underground, and so on. We have a very strong team managing them. We are doing the best we can, but there can be factors outside your control that could then potentially have knock-on effects on the timetable.

Q76 Nigel Mills: When I first looked at this Report I thought that we are nowhere near having the coverage and we do not have the devices, so this looks like a pretty racy thing to take on and be the first in the world to have a go at. Are you still confident that you can achieve this?

Stephen Webb: I think that the thing about coverage that it is worth reminding ourselves is that the overwhelming majority of the coverage will be delivered by upgrading masts that are already there. It is fundamentally different from the original Airwave system, where they had to build it from nothing to 90-something percent coverage, as described. Here, we will get to 93% geographical coverage with upgrading the series of masts that we already have, whether those are the ones on the EE network or, potentially, some of the Airwave ones in the very remote areas. Although there is a lot of work to be done on some of those existing masts, they are really to bridge a very small gap at the end to meet that target of roads coverage. There is a lot to do, but it is not quite as daunting as it may seem. You heard from me earlier about the actual pace of the roll-out; they have got from nought to 74% in 4G in quite a quick time.

Q77 Nigel Mills: We hear quite a lot from BT/EE that they can deliver broadband and 4G coverage across the whole country, and yet our feeling is that they do not quite get there as fast as we would like or quite when they promise. You are moving away from a network with 97% coverage and 99% availability; it is quite a long shot for you to have this ready in a couple of years' time.

Stephen Webb: I think that within a very short period of time we will be extremely close. We are down to those last numbers of sites that need to be built—roughly 500 by roughly 200 in our extended area of services—but that really is for a tiny proportion. The vast majority of this will be



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dealt with. Similarly, on resilience, we know what needs to be done and we know how many sites will need to be hardened. It is fundamentally a question of logistics.

The other thing that is quite helpful about 4G compared to Tetra is that, because it is the international system that everyone is using, it is a lot more flexible. If there are coverage gaps, there are potential mitigations. We could potentially strengthen the signal in masts around; we could potentially bring temporary coverage in. We have a choice. We have a discussion with the users about what levels of coverage they are prepared to accept and, equally, what sorts of temporary solutions they might be prepared to accept.

Q78 Nigel Mills: You just said that 4G is a system that everyone is using, but actually emergency services around the world are not using 4G. In fact, they are using the one that you are trying to move away from.

Chair: South Korea—

Stephen Webb: They are very impressive in this area. I mean that the fundamental technologies—we are talking about temporary coverage and temporary masts—are being used by all the MNOs, all the mobile network operators, throughout the world. We understand exactly how much they would cost and where to source them from. It is very different from Tetra, which is a system that really nobody used other than the emergency services, which meant that internationally it was a relatively small market and it did not have that flexibility.

Q79 Nigel Mills: So you didn't think, when you were first asked to be the SRO of this, "Why on earth have we gone down this risky, aggressive route? Why do we have to be first? Can't we stick with what we've got, which we've paid for and know works, rather than take this on?"

Stephen Webb: I made the decision myself, rather than being asked to. The choices were all difficult. They were all high-risk options. There were different sorts of risks—legal risks, financial risks, operational risks and technology risks. If you look at the number of risks we have really successfully mitigated in the three or four years—I don't want to give the impression that I am complacent about the level of risk in the programme now, but if you look at the risks we have moved away, they are very striking. Back then, we were not sure how successful the 4G auctions would be and how much uptake there would be. If it had been as unsuccessful or had as limited coverage as 3G, the solution we are following would not really have been feasible.

We did not know that the international standards body were going to prioritise emergency services' functionality in the way that we helped persuade them to do. We did not know we would be able to go in with £1 billion of investment over the spending review period, and we didn't know how much appetite there would be in the procurement. We always had in the back of our mind the expectation that we might face a legal challenge from the incumbent. That might set in context how we have brought the risk down really quite significantly. We still have an enormous task to do.



As I say, I see it largely as logistics. I think it can all be done. It's now a question of timing and getting the order right.

Q80 Nigel Mills: Mr Sedwill, what were the main reasons why you chose to move away from Airwave, which had been paid for and worked, and try something new?

Mark Sedwill: It had been paid for up until 2020, and then procurement rules would have required us to re-procure Airwave. Fundamentally, this goes to the strategic solution, which is well described in the Report. If you look at emergency services generally, interoperable data are becoming absolutely central to the way they are going to need to operate over the next five to 10 years. We want them to be able to be away from the base station more often and to have data as they are going to respond to a crisis—for example, for a fire engine that is going out to get a data feed en route, to know whether there is someone in those premises with mobility problems, and for the police to have a much richer picture of the people they are dealing with. Data generally are going to be absolutely central to the emergency services and, indeed, other business models over the next five to 10 years, so we need a capability to provide them with data—and data that are interoperable, because they are going to have to work much more effectively together.

Q81 Chair: There seems to be common agreement across the piece that it is the right strategic move. Our concern, and Mr Mills's questioning, is about the timescale and whether it is achievable.

Mark Sedwill: Well, Mr Mills was asking about this choice versus the existing risk. There are other reasons. In government, it is very rare—as you know from your experience, Madam Chair—that there is a single reason for going for anything. We looked at commercial angles, financial angles and so on. Certainly from my perspective, the fundamental reason for supporting this programme is that it is going to give them the capabilities they will need in the next five to 10 years. That is the strategic answer.

Q82 Nigel Mills: And you weren't tempted by what some other places have done—creating data functionality on a separate network and keeping a separate voice network?

Mark Sedwill: That is one of the options set out in the Report, in a table that sets out the various different options. Mr Webb can perhaps answer this in a bit more detail. Of course, it would have been possible to run systems for a longer term in parallel. Other countries have gone for an entirely separate ESN network based on 4G-type technology, but separate from the commercial networks. That would have required quite a lot of building from scratch of the kind that we had before and would have been a lot more expensive, and there would have been other risks associated with that. I would not want to suggest that this is not a high-risk programme. Actually, we entirely agree with the NAO that this is a high-risk programme and have sought, as Mr Webb said, to mitigate that. We had to judge the blend of cost, capability and risk across all those options, and this came out as the right solution.



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Q83 Nigel Mills: I suppose we need to come back on to what happens now. Your timetables are going to slip. You are world-leading—and on a compressed timetable that you seem to keep compressing. The testing phase and the parallel running phases seem to be being squeezed, rather than extended. Are you getting a little nervous that that is just too aggressive?

Mark Sedwill: It is aggressive, Mr Mills. Mr Webb touched on this a moment ago and may want to add something. Essentially, the risk is a financial risk rather than an operational one. If the roll-out timetable were to slip to the right, we would run Airwave for longer and we would be in parallel for longer. We probably wouldn't be countrywide. As the Chair said at the beginning, there are significant costs but the ones identified are essentially a full-year cost if the entire programme slipped everywhere for a year, and that is not what we would expect. It is essentially a financial risk.

Q84 Chair: Do you have a range of financial risk that you are looking at?

Mark Sedwill: It would depend. For example, let's say that the last region slipped past the end—then we would be talking tens rather than hundreds of millions, I think. Obviously, if there was a very substantial slippage in a big part of the country, we would be looking at something substantial and in the worst case the NAO figure.

Q85 Chair: Do you have a tolerance written into your future budget to cover the risks?

Mark Sedwill: Of course we don't yet have a settlement agreed post-2020, for obvious reasons.

Q86 Chair: But you will be bidding? Are you factoring this into your financial planning?

Mark Sedwill: Of course. This is funded overall from within the overall police settlement for us, and similarly for other Departments. Of course we will need to build some of that in as we look at the post-2020 settlement.

Q87 Chair: I just want to bring in the Comptroller and Auditor General.

Sir Amyas Morse: You were saying that the risk is essentially financial risk. I just want to test that based on the earlier testimony. If it is a given that nothing will be rolled out in any of the emergency services unless the chiefs are happy, which is what we have been told just now, and they don't think the functionality is what they want—they may have a functionality but they don't think it is fit for purpose in their judgment—then you are kind of stuck, aren't you? Is that merely financial risk or is it not a functionality risk? If they are doing their testing, they think, "This just doesn't get to where we want it to get to," even though you may think it does. If they don't agree, that is their decision, isn't it? Have I got that right?

Mark Sedwill: Mr Webb may well add something. I was actually answering a question about the risk of delay not the overall risks in the



programme. You are absolutely right, Auditor General, there are commercial, technical, functionality and financial risks in the programme.

Sir Amyas Morse: Am I right about this particular risk?

Q88 **Chair:** Who calls the shots? That is really what the Comptroller and Auditor General is asking. Is it the user or is it the Home Office? The cost comes to the taxpayer whichever one it is.

Mark Sedwill: It does and of course it comes from the same budgets that fund the rest of policing, so there are strong incentives for all of us to work collaboratively and to agree this, but of course we are only going to proceed if we have, essentially, a critical mass of people who believe it delivers the functionality.

Sir Amyas Morse: Sorry, just to be clear then. I am not trying to put an extreme argument. I am putting an argument where reasonable people can disagree as to what is an acceptable functionality. You have got all these different bodies bringing together the service and then you have the chiefs, who are independent, and who are going to look at it and say, "I am comparing this to what I have got now. It is either at least as good in my judgment or not." If they say not, they have the say. That is right, isn't it?

Stephen Webb: Absolutely. We are not going to move from trials into roll-out unless they are comfortable and we are not ultimately going to turn Airwave off unless they are comfortable. It will be a collective decision. We will look at it. Everything we have seen suggests that this will be vastly superior—that it meets all the contractual requirements of Airwave on coverage, resilience and so on but is inherently a better system. It has the priority and the pre-emption; recent tests are suggesting the data will be both cheaper and twice as fast. In-building coverage will be far better than it was in Tetra devices. We are very, very confident that they will be pleased with it but equally—

Sir Amyas Morse: If they are not, that is their say.

Stephen Webb: If they are not, we have to have a collective discussion with them, as the Permanent Secretary said.

Q89 **Mr Bacon:** Can we be clear about what having a collective discussion with them means? The point that the CAG raises is fundamental and is also one that we have seen before, in the national programme for IT in the health service. The Department of Health and Connecting for Health foisted upon hospitals immature technology that wasn't fit for purpose, while putting out lots of press releases saying it was fine. It wasn't fine. I can see something similar happening here if we are not very careful. If it is not working properly, it is not simply a case of having what you call a collective discussion. It is whether the chiefs can say, "No, we won't have it," and that is final, until they are satisfied. That is the question.

Mark Sedwill: The answer to that, Mr Bacon, is yes—but it is collective. We have chief constables represented on the programme board. The NPCC, the chiefs' council, has effective mechanisms, now with the police



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and crime commissioners, for making collective decisions. It is really about individual versus collective responsibility within policing and, indeed, the other emergency services. Of course, we are not going to proceed unless we have a consensus among police chiefs, and also other emergency services, on the reasons you set out—that this is providing the right level of service.

Q90 **Chair:** Can we just pin this down, once and for all? Mr Williams may want to come in as well. We've got an ambulance service, for argument's sake in Mr Bacon's neck of the woods, saying, "We don't think we're content with this." Would they be able to call the shots and say, "We're going to wait until we turn off Airwave"? In the end, that is your decision at the Home Office, isn't it?

Mark Sedwill: It is. We'd need to resolve that at the time, and it would depend on the circumstances at the time. If some were behaving completely unreasonably, we would need to work that through with them, but that would obviously depend—

Q91 **Chair:** One would hope that our emergency services would not just behave unreasonably.

Mark Sedwill: Exactly. That is exactly the point. I think we are at risk of heading into a cul-de-sac here.

Q92 **Mr Bacon:** Let's just explore it a little further. One person's definition of behaving unreasonably is another person's description of safeguarding the public. If it's clear to an ambulance service in a particular region of the UK that what they've got is less good than what they have now, provides less coverage than they have now and is functionally less secure than what they have now, one view would be that they could reasonably say they didn't want it until met the minimum standards. I hope you would have a very reasonable discussion with them. The issue is that we've seen this many times before in different domains.

Mark Sedwill: Mr Bacon, just to be clear—my point was that it would depend on the circumstances. If in those circumstances they said, "Here are the reasons this isn't working for us", that is, of course, completely reasonable. We would then seek to ensure the programme adapted to deliver the level of capability that they required. I think we are all basically talking about the same thing. There has to be a collective view of this; they have a responsibility and we have a responsibility.

Q93 **Chair:** At the moment, the general election is scheduled for May 2020, but who can tell; we have a Fixed-term Parliament Act. This is due to be rolled out just prior to a general election. You are a Permanent Secretary. If you are still at the Home Office at that point, there will be enormous pressure on you to make sure this gets delivered, let's be honest.

Mark Sedwill: There will enormous pressure on me anyway to make sure that this gets delivered, absolutely rightly. Of course, there will also be enormous pressure on me to make sure it gets delivered without a whole load of criticism from different trusts' chiefs—we are talking about 400-plus organisations around the country—and without noise from them



saying they aren't satisfied with the service. The pressures on us are to deliver it, to deliver it to the specifications that have been collectively agreed and to ensure it meets everybody's needs. We absolutely expect that. There is no risk. One risk I can assure you we don't have, Mr Bacon, is of our foisting this on everybody and putting out press releases saying it is fine if it isn't. We at the Home Office take emergency services capability very seriously, for all the reasons you know.

Mr Bacon: Mr Williams, did you want to say something?

David Williams: Only to echo that point. That judgment at the local level by trust chief executives, from a health perspective, is against a context of user engagement in the specification, clear contractual standards and a programme of work to agree the test and assurance strategy. If the system doesn't meet those standards, it is a perfect reasonable judgment for chief executives to take locally that the system is not ready. If it meets all of that and an individual chief executive has a challenge or a worry about transition, I think that would probably be a different conversation.

Q94 **Mr Bacon:** Mr Webb, you mentioned earlier that the business of getting from 74% to 97% was mainly a logistical one. I don't want to misrepresent you, but you made it sound as if the problems were primarily logistical—"there's a huge amount to do and it's got to be done in the right order"—rather than that it is enormously technically complicated, yet the NAO Report tells us this is the most advanced system in the world and hasn't been tried anywhere else in the world before in this way. Are you understating the other risks?

Stephen Webb: No, I think they are two different areas. I do not think coverage is technical issue; it is building 4G masts, which we have known how to do for a long time. That is just a question of getting it through the planning, the design and the build.

Chair: Just getting it through the planning.

Stephen Webb: Probably should not put it quite that way. There has been some very successful engagement and a lot of work. For example, the team was meeting all the heads of planning in Scotland last week, had a good meeting at the Scottish Parliament and with the Welsh Government, and has an MOU with the national parks in England. So a huge amount of work has already gone on in this area, which is challenging, but fundamentally logistical. The point of the programme that the NAO Report was making—about the technical—was more about the functionality, which is cutting edge and new, but again we are extremely confident that this is on its way to being delivered. To take push-to-talk functionality, I was using it last week—the early Motorola—and it is not the absolutely final version, but it is there and is working at the moment. Similarly, with priority and pre-emption, we have seen it tested at the facilities down in Bristol, so we know that works. Devices—I have a couple of devices, which are prototypes that are going out for upgrading to release 10 for testing next week. Again, we are very confident that we will



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have a good selection and strong competition when we go there next year. So this is all new, but it is progressing.

- Q95 **Mr Bacon:** I have two more questions. In terms of the simpler bit, the masts, the bit that you said was technically less risky and challenging, do you have a plan in which you know what is going to be done where and in which month, and that gets you from where you are now, at 74%, to 97% by the date you need? Month by month, for the next 12 months, two years, or however long it is.

Stephen Webb: Yes. Some of the plans are at earlier stages than others. With some of the sites we are in early discussions with planning, so the plan may need to change.

- Q96 **Mr Bacon:** Do you have a spreadsheet in which you have set out that in April 2017 you will have expected to have done X, Y and Z, and in August 2017 you will have expected to have done P, Q and R? Do you have something like that?

Stephen Webb: Yes.

- Q97 **Mr Bacon:** Can you send it to us?

Stephen Webb: Yes, by all means. There is EE—most of them—and then a certain amount that we are doing through EAS. So EE has most.

Mr Bacon: I fully accept that, even if you assert that you are going to achieve something in August or July, planning reasons may change that slightly, but we would still like to see it. It would be helpful for the public. As far as the more technically complex stuff is concerned—

Chair: Mr Bacon, may we come back to this later? I have just realised that Mr Mills is back in, and he was mid-stream.

- Q98 **Nigel Mills:** When I left off, Mr Sedwill, you were saying that it was a financial risk to keep Airwave going. How practical is it? I assume that they will be running it down, people will be wanting to leave and they will not want to be working for a place that will shut at the end of 2019, so it is probably not as simple as ringing up in November 2019 to say, "Would you mind keeping half the country going for six months because we're not quite on track?" How do you cope with that?

Mark Sedwill: It may be touched on in the Report, but of course we will know earlier than that. We will learn a great deal from the early roll-outs, and that will tell us whether there is risk at the back end with the later roll-outs—whether it will take longer, or there are unforeseen technical challenges, and so on—so we should know, I would think, perhaps a couple of years ahead of that 2020 contract end whether or not we will have to invoke the requirement to extend Airwave. It would not be a phone call in November 2019, I guess is what I am saying.

Stephen Webb: You need to give them a year's notice, very understandably. So we will need to decide in mid-'18 which regions we will need to extend and for how long, because you are absolutely right, that



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will be the challenge facing Motorola. But I think that gives them enough time to prepare.

Q99 **Chair:** Are you expecting to extend regions? From the way you just spoke, it sounded as if you might be.

Stephen Webb: We are likely to slip if—it comes under the point about compression of transition. If the users, very understandably, do not want to compress it, then there would need to be a certain amount of limited extension of Airwave. Equally, it is possible that they might be able to absorb it, not least because the revised plan that will be taken to users will involve us doing some more things up front, which otherwise would have been done during the transition period. But we are not going to put pressure on them. They have to be comfortable that the plan is viable and that they will be comfortable turning off Airwave at the end.

Q100 **Charlie Elphicke:** My sense, from everything I have heard, is that this is a programme that is going to end up falling behind, and there is a risk, if it does fall behind, of a 12-month extension of the Airwave contract, which is—the maximum at risk—£475 million. When I asked Motorola about this earlier—who take the risk—they were basically saying that it was the Home Office that takes the risk. My concern is that delivery seems to be partly in the control of Motorola—so if everything gets delivered on time then it is all fine and Motorola did well under contract, but if it does not, then Motorola do well under the extension. To what extent have Motorola got skin in the game to deliver this project?

Stephen Webb: It is a very fair question. I think they do. Obviously, there are clear contractual provisions around the existing contract. They are not going to be paid until that has been delivered, and they are putting quite a lot of investment in—there is a large team working very hard—so it would be quite painful for them, obviously, not to deliver on the current contract.

As to an extension period, that could potentially be quite painful for them as well. As Mr Mills described, they may need to do some capital investment; they may need to keep some people on. The actual income they get from the extension may be less than the cost of running the network if we ask for it only for a few regions for a certain period. I think they have a strong incentive for the orderly wind-down of their network. But most of all, this is the future of emergency services communications. This is now pretty much their sole business. They will want to get it right.

Q101 **Charlie Elphicke:** I have one other question. Effectively, you are paying for EE to roll out full coverage for their network, which other mobile phone companies can click into. That is great from the point of view of emergency services, but also great for their commercial services. To what extent are you capturing for the taxpayer interest the value that they are going to be getting? They are going to end up with plenty of windfall. To what extent are you clawing that back and making sure that the taxpayer interest is looked after?



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Stephen Webb: When we went out to procurement, it was very clear that it would be subject to state aid, which we secured, and it would be open to them to use this network and open it to their customers, so we believe that was represented in the bids that the MNOs put in. It is a very small number of actual customers. In the very remote areas that we are adding masts to, we are talking about potentially 60,000 people, so it is not a huge expansion of their customer base, but none the less it is there, it is a marketing point and so on.

Q102 **Chair:** It is within the contract, so there is going to be no dividend; it is written in.

Mark Sedwill: It was priced into the bids, I guess is the summary, and of course there is a reason why the commercial providers are not in the areas we are requiring them to roll out to—because it is not profitable.

Q103 **Chair:** We are not going to revisit the whole broadband debate today, tempted as we are. We understand that there may be some challenge on EU state aid. Is that right?

Stephen Webb: No, we have had—well, I have seen the submissions that came in from the other operators. We are very confident that we understand the state aid provisions and what we are doing is compatible with that.

Q104 **Chair:** Do you know what the level of fine would be if you were found guilty of giving state aid by the EU?

Stephen Webb: Actually, the risk under state aid rests with the people who get the benefit, which in this case would—

Q105 **Chair:** Would be EE, so not taxpayers but EE would foot the bill.

Stephen Webb: That is how it works.

Q106 **Nigel Mills:** If the reason for a delay is lack of network coverage in, say, rural Derbyshire, and East Midlands ambulance service and Derbyshire police and fire say no, do EE pay for the extra costs of keeping Airwave going until that is fixed?

Stephen Webb: We as in Derbyshire or—

Nigel Mills: No, do EE pay for the cost if it is their fault that the delay has happened?

Stephen Webb: If they have not met their coverage requirements, they will not be paid for the service—it will not be deemed ready—so yes, it will be quite a hit.

Q107 **Nigel Mills:** And the contract has enough of a penalty for them for a delay that it covers all the extra costs of keeping Airwave on in the east midlands for however long we would need it.

Stephen Webb: Well, you are talking about a substantial period of dual running. They are looking to deliver the coverage by September '17, and Airwave will obviously be running for two and a bit years after that.



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Q108 **Nigel Mills:** That was just giving you an example. But the penalty would be enough in a region if it was paid.

Stephen Webb: The penalty would not be getting paid. Their service would not be ready; therefore they would not be getting the core payment, which is really quite substantial.

Q109 **Nigel Mills:** But presumably the amount that you have to pay Airwave to keep running in a region is more than—it looks to be a bit of a penal rate compared with the ongoing running costs of the new system.

Mark Sedwill: That is only if we go beyond the end of course, because we will have quite a long period of dual running.

Q110 **Nigel Mills:** Except in the south-west.

Mark Sedwill: I live in the south-west, so I have the same interest as Mr Foster has. But there will be quite a prolonged period of dual running. As Mr Webb says, they have to deliver the service; if they do not deliver the service or do not deliver it to time, they do not get paid.

Q111 **Nigel Mills:** I suppose the reason for asking that question is that it's not like you have procured this from one main contractor, it is their job to deliver, and if they don't you sue them or they pay penalties. You are kind of managing lots of contractors yourself here, aren't you? Was that an attractive way of running the project, rather than passing the buck on to somebody?

Mark Sedwill: Maybe I could have the first go at that. Of course, I have sat before this Committee dealing with precisely the reverse, when we have had a single prime contractor who has then been responsible for all the subsequent secondary and tertiary contracts. As we know, and as the NAO have evidenced not only for us but in other circumstances, that is a high-risk option as well. The overall change of methodology in Government towards disaggregating contracts and being explicit that the integration risk and, of course, the political risks and so on that follow that sit with the Department, has been generally successful. We are moving towards more agile procurements as technology moves on. I think this is a good example of that. It is actually not as disaggregated as many others, because of the scale of the issues, but overall it is a better way of proceeding than being totally dependent on a single contractor. We are very familiar with some of the risks that arise from that.

Q112 **Nigel Mills:** But don't you create a new risk? Taking London as an example, say the Underground connectivity is not on time and one contractor says, "Well, our bits of the Underground are fine. It was linking them through to the EE bit or the control room that didn't work," and they then say, "No it was them who were way behind," and they say, "You didn't commission it in time" and so on. You end up with three different contractors all fighting over whose fault it was that it was late rather than somebody taking ownership of it.

Mark Sedwill: I agree in theory, Mr Mills, but of course we face those risks even if we have a single contractor, because you end up with exactly



the same kind of arguments going on between the prime and the subs, and then between the prime and the Department. Again, I have sat here previously trying to explain some of the choices we have made in previous very big programmes that were designed in that way. I think Mr Webb will want to answer this—indeed, it is something that goes more broadly, so Liam Maxwell may well have a perspective on it—but obviously it means that the Department and the programme have to have the capability to resolve those issues and to understand where the technical pinch points lay so that they can be clear about whose job it is to fix whatever issues might arise. That is built into the programme.

Q113 Chair: I wonder whether Mr Maxwell would like to come in. Does this, as Mr Sedwill has suggested, reflect existing contractual arrangements in other parts of Government? From your perspective, have the Home Office followed the best advice?

Liam Maxwell: We talked a bit about this when we were going over the Aspire contract, which is a similar situation in which you have one large contractor and are moving to a more disaggregated field. The aim here was to deliver effective services to the emergency services using new technology. The route that was taken did move away from having that come from one single supplier.

Q114 Chair: Do you think this contract is a good example?

Liam Maxwell: I think this is a good example of using the right components and the right specialists to deliver the right services within it. Putting it all into one boat could very easily lead to the issues to which Mr Sedwill was referring. Sometimes the attraction of having what's called one throat to choke in order to get your contract delivered—*[Laughter.]*

Chair: That is a good phrase for this Committee. Mr Sedwill has volunteered.

Liam Maxwell: It is one of those things where the contractor will turn around and say, "Well, you have one throat to choke and that's much easier," but actually all these contracts and service delivery units are disparate teams, and you can have difficulties within teams and within the same company delivering the services. It is not a panacea to say we want to go one way or the other. In this particular case, splitting it into the people who can deliver the specialised core services seems to have been the more attractive route to go down. As we went through our review of it—we were the challenging and support function—we were very comfortable with the way the Home Office approached this. I have to say that I have been in both sessions so far, and we are comfortable with the high level of risk that this offers and with the high level of assurance that the Home Office has tried to place on this. I don't think it is a case in which people are saying, "We're complacent. We think this is all a done deal." We know that this has high-risk components.

Chair: We will come back to that later. I just want to alert everyone to the fact that we are expecting a vote in around six minutes. Mr Mills, carry on until we hear the Division bell.



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Q115 **Nigel Mills:** Can we go back to the reason not to continue with Airwave? There is a bit of a feeling that the Government fell out with Airwave because of the price they wanted to charge for further extensions. Is that what drove the motivation for this project?

Mark Sedwill: It was a factor, Mr Mills, of course it was. It was a PFI deal that left us with no equity after 2020. Mr Bacon may have scrutinised it at the time.

Mr Bacon: I did.

Mark Sedwill: But actually, it was not—not really. I set out earlier the need to create interoperable data capability for emergency services. That could not have happened with Airwave; it does not have that capability. In any event, the contract was up in 2020, so even aside from the financial issues, we would have had to have run a new procurement anyway even if the technical solution we had chosen was less ambitious than the one we went for. As I was saying earlier, there is always a range of different factors with these things. I would not suggest that the financial position of the owner of Airwave at the time, Macquarie, was the decisive one, but it was a factor, of course.

Q116 **Nigel Mills:** I suppose we ought to be happy that the Government occasionally call the bluff of a monopoly provider and say, “If that is how you are going to behave, you can lose your business,” which is pretty much what happened to them here. The question is whether falling out with them led to taking a decision more quickly or more aggressively than perhaps you would have done otherwise. We have ended up with a quite radical and short timetable in which to do something that perhaps you might have wanted to wait a few years to do.

Mark Sedwill: I would not describe it as falling out. It was a difficult commercial relationship.

Q117 **Chair:** It might not have been you, Mr Sedwill. We understand that other bits of Government may have fallen out. Is that fair to say?

Mark Sedwill: It is beyond my knowledge. I genuinely do not know. We hadn’t, though. It has proved to be a difficult relationship. It proved difficult once Macquarie had taken over. They were highly leveraged, and therefore were dependent—and were telling the market that they were dependent—on charging highly profitable rates after 2020, and of course that was a factor. But 2020 was when the contract came to an end anyway, so as the accounting officer in good order I would have been wanting to run a procurement to bring the old contract to an end and have a new one in place in 2020.

Sometimes we extend a bit, but you only really do that confidently if you already have a procurement in flight, because that mitigates your legal risk. We do need to move emergency services on to an interoperable data capability of the kind that, frankly, everybody else is already using, with the additional resilience that they need. Private sector and so on is what I meant.



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Q118 **Chair:** I was going to say that I think this is unique in the world.

Mark Sedwill: No, I mean just in terms of shifting to a business model that the digital native generation are familiar with. It was a series of factors.

Q119 **Nigel Mills:** In the comparison between continuing with Airwave and moving to the new thing, I think you assessed benefits over the period to the mid-2030s or something, yet you have no contracts going forward that far. How do you factor in benefits that you do not have lined up?

Mark Sedwill: That is a more technical answer. I might leave that to the SRO. I think we followed a standard method of calculating this.

Stephen Webb: Yes, we made assumptions about what a base case would be. That is one of the issues, and we have had many debates with the Comptroller and Auditor General and the NAO. We assumed that the Airwave contract would roll forward at the current price with the continued indexation, and on top of that that people would continue to use commercial broadband. On the face of it, that seems like it would be an extremely profitable contract because a lot of the investment should have been paid for in the PFI. There would, of course, need to be a major tech refresh if they had kept it going until 2032, but the main point was that we thought that was a reasonable assumption to make because we did not see that we had any negotiating leverage to get a better outcome than that. In all the time, we never got an offer that involved any substantial discounts.

The Permanent Secretary made a point about the level of leverage. The assumptions that seem to be built into the debt gearing of GDCL, the parent company, suggested that that was ultimately what we were going to get. Early days, we did look at whether it would be possible to put some tension on them and create an alternative Tetra provider. I spent a fair bit of money on analysis to see whether we could free up some other spectrum so we could get another operator in there. We just couldn't make it work. We worked a lot with MOD colleagues and other areas, but we couldn't get enough spectrum freed up. The way the contract, the spectrum licence and the PFI worked meant that, had we not gone with an alternative solution, we would have had very little negotiating leverage on the incumbent.

Q120 **Nigel Mills:** How do we know we are not going to get into the same position when the original contracts expire so that we do not end up with them hiking prices or trying to maintain high levels of price on this new function from this new system in the mid-2020s?

Stephen Webb: It is a very fair concern. The area we are moving towards is an increasingly standardised one. We are very optimistic that we will get a better deal. In a few areas we have had to go to pre-standards approach with a migration to fully standards-based stuff later. EE is offering basically a network and we should be able to re-compete that. We were very careful. I was going to come in earlier about the disaggregation point. One of the advantages of the way that we have



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disaggregated is that it will make it much easier to re-compete and reduce any dominance that the incumbents have.

For Motorola as well, it is possible that quite a lot of things that are currently within the scope of the Motorola contract could be moved out as they become fully standardised and commoditised. They will have a strong incentive to add value and to be competitive on price.

Q121 **Nigel Mills:** That is one of the challenges of this contract structure, isn't it? All the various local customers of this have probably got far less choice now of who they go with for handsets or whatever else than they had under the existing one. They are almost going to get told, "This is your service and this is the price."

Stephen Webb: For Airwave there were really only two providers of handsets. They will have the full range of availability of devices. I think early on there will be relatively fewer, and we may centrally procure one or two of the main categories, but within a few years I would expect there to be a very wide range. It is essentially just a network with a SIM card and you can put it in.

Q122 **Nigel Mills:** Are you expecting anything from a Huawei to an Apple kind of device?

Stephen Webb: It is network agnostic. We are starting off with Android, Apple and IOS. In practice, I suspect nearly everyone is going to go for an Android system. Yes, there is a wide range of devices out there. I have a few in my bag, including some examples of what the ruggedised versions are going to look like. There is a lot of interest in this and a lot of development work going on.

Q123 **Chair:** But are they going to be credibly ready by this time next year? That is quite a big jump.

Stephen Webb: Yes, it is a big challenge. We have examples of devices that are about to be upgraded to at least 12. We have example prototypes of the ruggedised one with the external emergency button that you push to talk. We know what they look like. It is a question of then going into production.

Chair: I know the vote is approaching, which is why I keep looking at the monitor. Mr Mills, have you got any quick points that you want to bring in?

Q124 **Nigel Mills:** My limited memory of Airwave is that you were expecting device costs or annual running costs to be a lot lower than they turned out to be. In terms of assessing costs through to 2032 and this being £800 a year rather than £1,300, how much risk is there that all these things creep back up and you end up not getting the running costs down as far as you think?

Stephen Webb: The problem with Tetra was that, because it was a fairly small niche technology, you really did not get the economies of scale. On this, we are basically joining the conveyor belt of the general public. We



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should get the upgrades and economies of scale with efficiencies from that. Again, we have been relatively cautious in our assumptions about how much things will cost when they are recomputed. *[Interruption.]*

Chair: We are going to hold that thought because we now have a Division. Our apologies. We will adjourn for 10 minutes.

Sitting suspended for a Division in the House.

On resuming—

Chair: We now resume after that vote.

Q125 **Nigel Mills:** A last question from me. This project has had an interesting history of risk ratings. I think at one stage it hit black, and now it is at amber, unless something has changed. Can you talk us through how you got the risk rating down? Do you see it staying at amber all the way through to completion, or do you think there are some pinch points where it might hit red again?

Stephen Webb: Aspects of it were at black, particularly around the time of the procurement challenge. Earlier, I described what we felt were the four major areas of risk when we first took this decision to go down an LTE route back in 2012-13 and how those four have all basically been put aside. At the time of the challenge, there was potential for the whole procurement to be thrown up in the air. We were extremely confident that we had done the right thing—we took a very robust line—but you can never be quite sure. We made the reductions following that, when the automatic suspension of procurement was lifted, enabling us to go ahead and sign contracts in December 2015.

Secondly, the deal arranged for Motorola to buy Airwave had substantial elements that we thought really de-risked the programme, particularly the interworking solution and the flexibility of contracts up to 2019. When we were talking earlier about the transition timescale and who is where, I meant to say that the transition timescale is a couple of years old now and at the time it was driven by a particular region when its Airwave contracts were coming to an end. We now have a lot more flexibility and can move people around as and when the regions want it.

We thought those two things really reduced the level of risk and brought it down to amber. Amber feels right to me. It suggests that we had some major issues that we need to keep close to, but fundamentally we are going down a route that I think is deliverable. I hope we stay there. Given the amount we have to do, I wouldn't expect to get to amber-green until right at the end.

Mark Sedwill: Just to add a quick point, that is not entirely a self-assessed risk judgment. The Major Projects Authority has also gone on exactly that journey.

Q126 **Nigel Mills:** Mr Sedwill, how often is this project coming up at Home Office senior meetings? Is this one you look at every fortnight, every



month or every quarter?

Mark Sedwill: I do not look at it much in the board, to be honest. I have tended to look at it outside. We have all the formal mechanisms. It comes through our portfolio and investment committee and is reported into my executive management board. Most of the scrutiny of programmes is done in the portfolio and investment committee, where we have a lot of experts around the table. That is reported to me, and then I will have separate sessions. I tend to have separate sessions on individual programmes, where I have the time to do a deep dive.

I have scrutinised this programme more than any other in my four years in this job, right the way through, through the formal mechanisms but informally as well. We had an afternoon when I think Liam Maxwell came to one. John Manzoni came over and we did a further kicking of the tyres. I have been quite close to managing this programme and scrutinising it throughout. It is the one I spent most time on, I think, in my time in the job.

Q127 **Nigel Mills:** The Department for Health: is it high up the risk register there?

David Williams: Similarly, in terms of the Home Office-led programme, we are represented in all the layers of programme governance and take a full part in that. Within the Department, it is a prominent programme in our own health major projects portfolio, so that is subject to routine scrutiny on a monthly basis. It is not on the departmental core risk register, which is limited to 12 non-programme risks, but it sits on my own group-level risk register very prominently. That is subject to review routinely with the perm sec and other Exco members on a quarterly basis.

We similarly had, for our ambulance radio programme—some sub-components—the IPA in for a gateway review, and their overall assessment for that was amber.

Q128 **Mr Bacon:** What is the rating?

David Williams: Amber.

Q129 **Mr Bacon:** Is that the Infrastructure and Projects Authority rating?

David Williams: Yes.

Louise Bladen: That is according to the latest IPA rating. The report that they did this year, in May '16, I think it was, wasn't based on the whole programme. It was elements of the extended bit of this. I think a previous version from September '15 was amber as well. That was the whole programme. The latest one isn't.

Q130 **Chair:** So they reviewed the whole programme in September '15.

David Williams: It has just been too big to have single gateway reviews of the whole thing, so we have tended to split it up.

Q131 **Chair:** Mr Sedwill, just to be clear on your answer to Mr Mills's question



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about assurance, when did it last go to the Home Office board?

Mark Sedwill: It comes in routine reporting. Essentially, every month and every quarter, we have a series of programme risks that are there.

Q132 **Chair:** This is the main Home Office board.

Mark Sedwill: Yes, the main board is the departmental board, chaired by the Home Secretary. We have shifted that a bit since the election, but essentially that meets quarterly and has all the main risks reported in to it.

Q133 **Chair:** And this is going—

Mark Sedwill: This is registered there. Of course it is not always discussed at every meeting, but it is in the papers. We have essentially two risk registers, and I disentangled the risk registers in the Home Office. I think it may have caused a little bit of confusion in our submission on this. We have a strategic risk register, which is essentially all the external risks and threats the Home Office is responsible for dealing with; and then we disentangled all the internal good governance in the Department risks. This sits in the second. When I arrived, I had a single risk register, which had the threat of a terrorist attack at No. 1 and a programme risk at No. 2. It was just confusing.

Q134 **Chair:** I can see the logic in that, from a data management point of view. As long as we have got oversight of them both.

Louise Bladen: I just wanted to explain why we had got what we had got in the Report at 3.18 on page 41. I and other members of the NAO attend the Home Office audit committee, and I think this time last year we were seeing that risk on the risks that come to the audit committee that are equivalent to what the management board sees around ESN. By the time we got to the summer, those risks were not visible to the audit committee. That was our concern—that it had dropped off that set of risks that we see. We now understand that there is a separate risk around programmes. I think we asked at the time of the audit committee why we were not seeing it, and were told that programmes did not come to the audit committee. That did seem a bit odd to us, given that it had previously. So that was the concern we raised in the Report.

Mark Sedwill: I think Mr Webb can probably answer it. I think, to be frank, it was just a bit confused at that time, and we should have clarified that with the NAO at the time. It wasn't that it had dropped off our radar screen. It was just that we had not quite got it in the mechanism that we were showing to the NAO.

Chair: And you have come here, as well, and discussed it, so that is a way of giving it sunlight.

Q135 **Kevin Foster:** To start with Mr Webb, why do you feel it would be uniquely simple to do the transition in the south-west? The reason why I ask that is that I note that in figure 12 on page 35, it is the only region where there is no planned contingency period or period of parallel



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running. I wondered what was uniquely simple about doing this transition as compared to all the others.

Stephen Webb: I think because it was last, we felt that there will be that much more opportunity to build in the lessons from earlier. As I said, we have an opportunity with the users to move the transition around, because we are no longer driven by the Airwave procurement end dates. We will be talking to colleagues in the south-west. There are obviously risks and benefits in going first and last.

Q136 **Kevin Foster:** I can understand clearly that there are risks and benefits. The risk of being last, particularly with no contingency or dual-running period, is that any slippage pushes it over the time of the Airwave contract falling off. How confident are you that that 10-month period—I think the Report calls it the minimum period—will be met as planned?

Stephen Webb: As I say, we have regional implementation managers who are looking at the regional transition plans, and we are working with them on this issue. There is a lot to do in the region. For example, refitting the vehicles is a big challenge, but I am increasingly confident that it will be possible. I was talking to the Scottish Ambulance Service. They have refitted all their ambulances—there are about 500 of them—in a seven-month programme. That effectively almost makes them ESN-ready. Of all the emergency service vehicles, they are probably the ones with the highest utilisation rates. There are a lot of challenges. Some of the things that people thought they needed to deliver locally, we might be doing centrally. That might reduce the burden on transition. Over the next few months, we will be talking to them.

Q137 **Kevin Foster:** Just to be clear, the only region where you are not planning any contingency period is the south-west. You have just given the example of Scotland. There is a contingency period there—a small period of joint running. It is the same with Wales. Similarly, it is one of the last three, but only the south-west has no contingency period planned.

Stephen Webb: As I say, when we have revisited all the transition plans with the regions, if that is not comfortable and they want to build transition in, we can build some contingency in and start it a little earlier. There is a strong preference among the users at the moment to say that they would like to have some sequencing, so that you can learn from experience and not have a lot of parallel running.

Kevin Foster: I clearly understand why sequencing would make eminent sense, rather than just switching on the national system in one day. That would clearly not be a sensible plan. For me, it is more about the idea that every other region has a contingency period built in and a period—albeit small in the case of Wales and Scotland—of joint running. Only the south-west does not. That is where we are trying to get to.

Q138 **Chair:** Mr Foster is rightly highlighting something. You suggested, Mr Webb, that it could start early—it is the first time we have heard that—or it could just move to the right, or there could be a big bang approach.

Which of those is most likely?

Stephen Webb: Well, it is going to depend on whether the south-west and the other users think they will be ready to start a couple of months early if they want that contingency. It is an area that has done a lot of forward thinking and planning already. It is one of the strongest, despite being at the end of the transition path.

Q139 **Chair:** All of the south-west area? That is lots of different—

Stephen Webb: Yes, because it is being organised on a regional basis, and we are employing regional implementation managers.

David Williams: From a health perspective, the whole ambulance radio programme is hosted and run out of the South West Ambulance Service. The lead chief executive for ambulance radios and the Association of Ambulance Chief Executives is the chief executive of the South West Ambulance Service. In terms of preparation and planning, I would comfortably have them at the top of the pack.

Q140 **Kevin Foster:** I have a question for Mr Sedwill. I was interested to hear the answers we have just had, but you commented earlier on what happens if things do not go to plan and we get to the end of the period. The south-west is perhaps the most likely to be in that boat. You talked about funding and the police service. Can I just be clear that there would not be any disadvantage to the authorities involved in the south-west if the project was not delivered and it was necessary for that region to see a continuation of this system?

Mark Sedwill: Absolutely. It is being funded out of the overall pot, but there is no financial disadvantage to the region at the end. Just to clarify a point that I would not want to get lost, there is no operational risk of a cliff-edge at the end of this. If we need to run on, we will. If Airwave needs to continue for the reasons we were exploring right at the beginning of the hearing, it will, but if we go beyond the shutdown, there is a contractual and financial cost to that.

Q141 **Kevin Foster:** Just to be clear, that will be borne by the Home Office.

Mark Sedwill: That will be borne by the overall pot.

Q142 **Kevin Foster:** There would not be specific detriment to the authorities in the south-west.

Mark Sedwill: No.

Q143 **Philip Boswell:** I have two questions to the Home Office; the first is about competition. I understand that there were four potential providers initially. They engaged in a competitive tender; two withdrew early and one later, leaving negotiations to continue with only one contractor. Yes?

Stephen Webb: Three on one of the lots—on the EE one.

Q144 **Philip Boswell:** Under a competitive bid strategy, that would be considered a failure, because when you negotiate with a single contractor



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before award of contract, with the onerous aspects such as close-out terms, liability and so on, there is only one place to go, so you are somewhat over the barrel as a client. Are you familiar with prescriptive engineering? If so, is that the reason why you are left with only one contractor?

I will elaborate a little bit: I am asking whether this was truly competitive. Were there issues, specifications or requirements in your brief or contract documents that effectively meant that negotiations with one single company—in this case, EE—were inevitable?

Stephen Webb: No. We down-selected the top two bidders, and then one of them withdrew for reasons that were largely to do with potential takeovers in the market, so it was unfortunate and just one of those things. It was a strong bidder, and a strong potential provider. You are absolutely right, and obviously Airwave itself was the result of a long-running negotiation with a sole consortium, which had certain problems.

The good thing here was that we had the initial bid. As soon as it went down to one bidder, the director-general and the Home Secretary were very clear that we needed to have a should-cost model for us to be able to demonstrate, when the best and final offer came in, that it was something we could recognise the cost of, and that we were not being taken advantage of. We had that model, and as the bid came in, we could judge against that model. We had a few negotiations and made a few changes, but we understood what the underlying cost drivers of the bid were, so we were confident that it was ultimately a bid that represented very good value for money. Clearly, we would rather have had a competitive process.

We actually ended up with only one bidder on lot 2, the Motorola side, although that was very much at the last minute. It was competitive almost right up to the last day.

Mark Sedwill: I remember saying to the programme, “Okay”—we knew, I think, just before it was more widely known that it was going to drop to one, because of the commercial position that the other bidder found itself in—“I want a price in a sealed envelope, which we only open after we see the final bid.” Obviously I do not mean that literally, but that is what I was looking for, to provide precisely that kind of assurance.

Q145 **Philip Boswell:** It is a difficult situation to deal with. Following on from Mr Mills and Mr Elphicke’s questions on contingency after 2019 and on contractual penalties, first, how much have you set aside as a contingency for going beyond 2019 and, secondly—Mr Maxwell might be able to help here, in relation to his “one throat to choke” philosophy—are there liquidated damages in the contract, and can they be attributed to or apportioned across all the regions, as set out in figure 12, page 35?

Stephen Webb: We do not have a specific contingency for delay. We have a range of optimism bias, and quantified risk assessment has been added to the numbers, so delay was something that we have not set particular money aside for, because, frankly, we would just move things to the right. On the point about liquidated damages, there are provisions to



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terminate the contract. Obviously, the fundamental one here is that if a viable product is not delivered, it will not be paid for. In both cases, the companies are making quite substantial investments before the point at which any money will be received.

Q146 Philip Boswell: What we are getting at is that earlier we heard that the risk very much sits with the Home Office—if it fails to hit 2019. The figure produced by the NAO is substantial on an annual basis, and contractually you had found yourself in the position where—let us be honest—the strength lay with the bidder, because it was a single bidder at the time. What kind of mechanisms in the contract have you secured to ensure that we are not exposed and that there is not an open chequebook?

Stephen Webb: There are some provisions in the contract with Motorola that will adjust the price we pay, depending on the reasons for the delay. We think that the most likely cost of, say, a year's delay—we do this kind of sensitivity analysis all the time—is probably £100 million to £160 million, depending on the circumstances. That is a very significant sum. It is about 3% of the programme cost, and it might reduce the overall NPV by a bit less than 5%. We are keeping a very close eye on that. We think, for the reasons we discussed earlier, that there is a very strong incentive—reputational, company future, financial and commercial—for all the providers to deliver this. All the behaviour we are seeing so far bears that out.

Q147 Philip Boswell: Finally, based on figure 12 on page 35, which models different regions—the Scottish and Welsh Governments are included in this—if it is a failure in Scotland or the south-west, will the bill be sent to that partner?

Stephen Webb: As the Permanent Secretary said, any delay in the whole system will be treated in the round. The Scottish Government isn't going to be given the sole bill for that. It will be shared, and Scotland would then contribute in proportion to the share of the programme as a whole, which is about 10%. We are very clear that we don't want to have financial incentives to go early or to go last, because we want an orderly transition.

David Williams: As part of the memorandum of understanding between national Departments and the Home Office as the lead Department, there is a set of criteria for how any financial contingency will be handled and divided between us. The criteria for that are set out and agreed. Whether individual parties hold financial contingency in their plans or not is really a matter for their own financial managers.

Q148 Chair: While we are on the subject of money, one of my colleagues was asking earlier about the penalty for EE if they don't reach the 97% coverage. That would mean that you would be paying Airwave a cost to continue. We know the annual figure for that, and you've given us a lower figure that you hope it would be nearer to. Do any of the penalty clauses for EE make them pay for the cost of running Airwave? I just want to be clear about that, because I don't think that question got answered before.



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Stephen Webb: No, but they won't get any money at all for all the investment they put in if they don't complete the work of coverage. Given what we think the cost of delivering that coverage will be, that would be a very strange commercial decision for them to make. We are absolutely confident that they will want to deliver it.

Q149 **Chair:** What if they deliver 96% or 95%? Are you saying they will get no money from the Home Office?

Stephen Webb: I should probably explain the 96% and 97%. The actual contractual requirement is the road coverage—it is basically 99%-plus. 97% is the way that Airwave delivered that. We may or may not be at 97%, because it's possible, in the way the antenna will be set up, that through a directed antenna, you can cover just the roads and not need to cover so much of the bleak moorland around it. We are not quite sure, until we have seen the final radio plan that has been optimised, what the geographical coverage will be, but the contractual requirement is the roads.

Q150 **Chair:** How are you assuring that that coverage is in place? Are you asking EE to tell you that it's fine, or do you have some other external checks?

Stephen Webb: We are looking at a lot of routes. Again, one of the great advantages of LTE 4G is that there are lots of ways you can do that, such as crowdsourcing. We can put things in emergency service vehicles that will tell you if there's coverage in that particular area as they drive round. There is potential drive testing. They will obviously have their own coverage models. We are looking for a range with the users to give them that confidence. Unlike Tetra and the Airwave system, there is really only one way of testing it. This is a standard 4G, so we can do a lot. We can get the general public to help us and all sorts of things.

Sir Amyas Morse: I want to bring you back to the discussion we just had about your second bidder on lot 2. Is it your evidence that they withdrew for commercial reasons, or was it for their perception of risk in the project?

Stephen Webb: I don't want to comment too much on their behalf. It was a consortium, and I think they struggled to—

Mark Sedwill: There was potential takeover activity in the market that clearly affected their decision. Of course, we don't exactly know, but we are inferring that that was relevant to the decisions.

Sir Amyas Morse: Just to be positive—

Mark Sedwill: Sorry, lot 3 or lot 2?

Sir Amyas Morse: Lot 3, sorry. Is your evidence that lot 3 withdrew because of risk, or because of commercial or other considerations?

Mark Sedwill: Our understanding is that it was largely the complexities of the then-proposed takeover of O2 by Three.



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Q151 **Chair:** Did you not interrogate them? You were down to two bidders. With other Government projects, asking why someone is not bidding, and about any worries they have about the programme that might come out of that, would be pretty important. Did you do that?

Stephen Webb: They put in a very strong bid. They were very keen to deliver this.

Q152 **Chair:** But then they didn't.

Stephen Webb: But ultimately they didn't.

Q153 **Chair:** Did you have a conversation with them about that?

Stephen Webb: Oh yes.

Q154 **Chair:** I don't want to cause you embarrassment, and you cannot talk about another company's exact decisions, but did you, as the Home Office, talk to them about any of the problems? Once they had withdrawn, they were no longer an interested party, so presumably they could tell you candidly—they should do, one would hope, if they were asked by the British Home Office—whether there were problems or issues. You do an exit interview with a bidder at that point.

Stephen Webb: They were extremely disappointed. They really wanted it to work.

Q155 **Chair:** Did you do an exit interview with them?

Stephen Webb: Yes.

Q156 **Chair:** And did you learn anything useful in the negotiations with the final bidder?

Stephen Webb: I believe they were satisfied with the process and felt that they could have put in a really good bid together, but ultimately it just didn't work for them.

Louise Bladen: Can we just check on both lots? We have discussed lot 3, and I think you say that for lot 2 the bidder also withdrew. I guess it is a question of what the circumstances were for both those lots.

Q157 **Chair:** So what about the other lot, lot 2?

Stephen Webb: I need to think a bit about what I can say. Again, we had extensive discussions with them over a long period. They were having certain difficulties delivering—I think they also had a subcontractor and prime relationship that, ultimately, they couldn't make work for them.

Q158 **Chair:** One of the challenges we found when we were preparing for this was that there were very few potential bidders, and then it came down to one, so the points that Mr Boswell raised are of real concern. Does that not worry you when you are looking at not only this but other programmes across Government?

Mark Sedwill: Absolutely, Madam Chair. We were talking earlier about the extent to which I scrutinised the programme. This is one of those



moments when I was essentially the desk officer for some of this, at that stage, because I was very concerned about that for all the obvious reasons. I am not the expert, but I did subject the programme to considerable scrutiny in that period. We had meetings about it and looked at the options. Do we continue with one bidder? Is that the right thing to do? Or do we have to do a reset of some kind? We considered all those things. The business case was put to me that it was still the right thing to do, with the various mitigations that we have described to Mr Boswell earlier.

Q159 **Chair:** Mr Maxwell, what was your perspective from the centre of Government?

Liam Maxwell: At that stage of the last bidders coming through—we would be worried if at an earlier stage it got down to only one bid. The information I have is that it was at a relatively late stage that we went down to one bid on both lots.

Q160 **Chair:** But generally, the Government are procuring a lot of technology. Where does that leave a future Government bidding for such contracts?

Liam Maxwell: It depends on what the technology you are buying is. That is very important. Lot 3 is major telecoms infrastructure, so there are only really going to be four bidders in the market for that, although an international bidder came in as well. I remember going through the details and finding that one of the things that Gordon Shipley did very early on was say, "How much interest is there in each of these? How many people are going to bid in this space?" It was a healthy list—I have it here. We were comfortable that at that stage there was a healthy list coming through.

In terms of my role and the role of the Cabinet Office, we took a step back at that point, so I cannot say that we were involved in that stage, but we were surprised that it got down to only one bid for both of those things. We were, though, comforted by the fact that that happened relatively late in the day.

Stephen Webb: With lot 3 we downselected down to two on price grounds. We had lots of people who had been interested and were selected out by us, and then one of those two fell out. Lot 2, though, gradually did fall down to one, and that is probably the more specialist, technical one, so it is not so surprising. Because it is a cutting-edge programme, there were fewer people, whereas, as Mr Maxwell says, you would expect to get four bids for providing a mobile network.

Liam Maxwell: In February 2014, Gordon Shipley, the programme director, wrote to us and said that he had 14 on lot 1, 17 on lot 2, five on lot 3 and three on lot 4.

Q161 **Chair:** That is potential.

Liam Maxwell: Those were people who had indicated that they were pretty keen to go forward and bid, and essentially had the experience capability and understood the high-level scope, the issues and the risks,



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and would therefore be sensible to have an extended conversation with at that point.

Stephen Webb: We downselected five on lot 2, and then, as I said, for various reasons they dropped off, one of them right at the end.

Liam Maxwell: To go back to your point, if you get to one bidder at one stage, that is not an optimum solution if you are looking at that in terms of the delivery of infrastructure. But if you were delivering it in terms of things such as software development, that is a definite concern at that point.

Sir Amyas Morse: I have got something on our file that raises questions. Rather than trying to dig into it in this hearing, I would rather take it up with you in the next couple of days, before the Committee finalises its report. I will do it like that, if I may. That is why I am sitting here frowning and looking puzzled. I am actually looking at a bit of correspondence that looks a little—I would like to have the chance to discuss it with you before—

Q162 **Chair:** Let's get those things ironed out behind the scenes. Can I ask about the site? We talked to EE earlier about the multi-use of sites and EU state aid, but I am also concerned about the security of sites. If someone were to take out some of these masts, it would obviously have an impact on everybody, but it would particularly have an impact now on the emergency services. Is that something that you have required EE to look at particularly, Mr Webb?

Stephen Webb: We have got resilience requirements, and that needs to be taken into account. A lot of it is really to do with the power, but yes, certainly for the core sites, there is security. What is a little different here from the Airwave sites, again, is that there is so much overlap between them that it would not be so easy to take out coverage in an area by removing one site. Actually, there is almost always another site covering the same area.

Q163 **Chair:** You have done some resilience testing?

Stephen Webb: Absolutely.

Q164 **Chair:** We talked about the development of devices. There is not much room for manoeuvre there in the next year, is there?

Stephen Webb: No.

Q165 **Chair:** So what contingency have you got in place for those devices? That will immediately push back that quite hard 2019 deadline and cost the taxpayer.

Stephen Webb: As I said earlier, we are very confident they will be. This is a prototype push-to-talk ruggedised device with an emergency button there. This is the sort of thing we would expect them to be using. These are going to be upgraded to release 12, which means they would work on the ESN. They are not things you can go to the shops and buy at the



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moment, but they are close. We need to procure standard devices, ruggedised devices and things for the vehicles, and probably dual-mode devices, which would also give that flexibility to operate over both Tetra and LTE. In all of those, we have seen prototypes we are confident about, from quite a range of suppliers all over the world.

Q166 **Mr Bacon:** What is the typical price per handset?

Stephen Webb: It will depend. The dual-mode and ruggedised ones are in the higher—

Q167 **Mr Bacon:** Give me the bookends.

Stephen Webb: Maybe £600 or £800 for those specialist ones, and then a little lower for a standard. If you don't want a standard one to be ruggedised and you don't want push-to-talk, it is essentially just a smartphone.

Q168 **Mr Bacon:** Although smartphones—the latest, good ones—are £400 to £600, aren't they?

Stephen Webb: But if you bought them in bulk, you would expect to get them for less.

Q169 **Chair:** What lessons have you learned from BlackBerrys for PCs, which the Home Office rolled out? We have looked at that before. My point is that it is not just about the technology; it is about the culture. Wiltshire, I think, was the force that was particularly good at that on the police side.

Mark Sedwill: I am smiling because that my very first PAC hearing was on that topic. That is actually a question I put to the programme quite a lot. I said, "Give me the assurance around that." It is a different kind of programme, because this is fundamentally building the infrastructure. Most of the benefits do not come from that, but it will be very much down to the individual 400 institutions to drive the business benefits through. Many of them are already making the business changes, because they are using parallel devices to enable them to use data more effectively and so on, but the delivery of it will essentially be in the institutions. Mr Williams may be able to give you some reassurance on how the ambulance service will do it, and Mr Webb on the police, for example.

David Williams: Similarly, as Mr Sedwill says, in terms of the immediate scope of the ambulance radio programme, it is about getting the infrastructure in, supporting the Home Office on the development network and getting the devices, but in terms of the development of the role of ambulance services as part of the five-year forward view, being able while out and about on mobile to access electronic patient records and engage with clinicians live back in emergency departments—

Q170 **Chair:** How are people already handling these functions?

David Williams: In terms of buying into that as the direction of travel and where the ambulance services want to go, there is a lot of support, but that is a second phase, as it were, to be taken forward once the network is there and the devices are—



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Q171 **Chair:** How are both of you going to be sure that the various emergency organisations that you are responsible for—so, fire and police, and the health side, ambulances in particular—will actually do this, because it is no good having the kit, as we previously looked at, if it is not used effectively?

David Williams: Sure—

Mark Sedwill: Sorry, can I just point out one big difference between the two programmes? One was essentially announced and provided—so, pushed, if you like—and this one has been pulled in. They are already making these changes. If you just talk to a police officer, a firefighter or somebody working in the ambulance service, they are really hungry to have the data tools available to them, and they want the capability. And in many cases, as the Report sets out, they are using workarounds now on commercial mechanisms to try to provide as much of that as they can.

That is the big difference between the two, but the delivery will essentially be in the institutions. But maybe Mr Webb can add something to what Mr Williams has said—

Stephen Webb: If I can give you an example of a couple of things we are working on in the Home Office, where there is a huge amount of interest and users. So, mobile fingerprint readers—we have something at the moment that is actually linked to a Blackberry, but it is another thing to carry and it only really searches against the police finger-printer.

What we would like to have is a system where you plug in a peripheral to an ESN device, or, even better, you just have to put your fingers on the screen or take a photo of it, which would then enable every officer with a smartphone to be able to take people's fingerprints and check them against the national collections. So we are developing that.

We are looking at potential facial recognition. There is an interest in latent fingerprints, crime scene readers—again, using ESN as a backhaul. There are a number of projects, all of which are being driven by clear user need.

Q172 **Chair:** So those are separate projects going on in the Home Office?

Stephen Webb: Yes. They are not part of ESMCP. I am responsible for a couple of other programmes and we are bringing them all together for a series of mobile applications, which will then run over ESN—

Q173 **Chair:** So the aim really is that it will be so good that you will want to use it anyway?

Stephen Webb: Absolutely, because you should be able to get to a position where, if you stop someone on a Friday night, you can find out who exactly they are—are they a threat to you? You can get down all the information you need from your national policing systems and that is what we are working on at the moment.

Q174 **Chair:** I just wanted to ask which areas of the country you think are the least likely to get the coverage, because if it is 97% coverage that still



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leaves 3%, as you say? Road coverage will be clear—

Stephen Webb: Yes. By definition, the way it will work is that it is the areas with no roads.

Mark Sedwill: The maps, just before the staple, will sort it out quite well. There are some still areas where you will see—

Q175 **Chair:** So the question is what are you going to do about those areas on those maps that are not-spots?

Mark Sedwill: Those are areas without roads. If—

Q176 **Chair:** If there are no roads, there can still be emergencies—

Mark Sedwill: Indeed. And there is a capability—

Q177 **Chair:** The Cumbria shootings were not—

Mark Sedwill: Indeed. So we are very conscious of that, not least because of the follow-through to the Charlie Hebdo incident, for example, which we are really conscious of. Again, Mr Webb can explain in more detail if you want, but essentially there is the ability to put out mobile repeaters—so, essentially mobile masts—to extend coverage if an operation of that kind requires it in an area where you would not otherwise require it.

Stephen Webb: Off-road with satellite backhubs, you could actually contact—

Q178 **Chair:** So they would be shipped out at the time they are needed? So they would go on a police vehicle to the area?

Stephen Webb: Yes. Well, it is a separate vehicle. It is basically an off-road 4x4—

Q179 **Chair:** And is that part of this contract, or is that—?

Stephen Webb: Yes.

Q180 **Chair:** So, EE will be providing those—?

Stephen Webb: Yes.

Q181 **Mrs Trevelyan:** On that point, obviously I represent Northumberland. Northumberland and Cumbria—low populations, very sparse, big gaps in roads, if that is the basis. Looking forward—I am an optimist; I am new here—let us assume this programme rolls out pretty much on time and as you want it to. When will the mobile operators be able to see the map of where the planned masts are, so that they can start to plan their infrastructure?

I ask that because the reality is that I have a low population but I gain seven million tourists every year; Cumbria gains 30 million tourists. The opportunity that this will provide is enormous at lots of levels, not only for security and safety, but it is very difficult for mobile operators to make any progress, because they do not know which ones they are going



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to be. So could you give some sort of timescale for that?

Stephen Webb: I think Mr Frumkin was talking about this for EE, for the sites they are building themselves, and they are certainly looking to allow their competitors a sense of where they are, earlier, for our sites. The ones that we are responsible for building in what is known as the extended area services again will be going out to planning probably around May. For all that, we will have all the details of the sites and the designs at that point.

Q182 **Mrs Trevelyan:** Right. So it will be possible for everyone else to start thinking about it, because I think that is one of the challenges—

Stephen Webb: We have been in touch with planners already all over the country, so they have got a good idea of what our radio plans are looking at and what the coverage map should be.

Q183 **Mrs Trevelyan:** Let us assume we get there. These will therefore be multi-occupier masts—that is the idea. Will they be built tall enough that we are not going to have to get that right later?

Stephen Webb: The way the state aid works is that we have to offer it to people, and they need to make whatever reasonable contributions are necessary to get their kit on to it. We want to give people an early opportunity to say, “I’m definitely going to use this mast”. Then we will think about how we would design and future-proof it. Given the cost of delay, we are anxious about letting that slip too much. The absolute priority has to be building this for the emergency services. They will be built. There will definitely be coverage for EE customers. There will be an opportunity for other operators to come on and then they will have to agree terms.

Q184 **Mrs Trevelyan:** But this is the technology of the future, and we are pretty sure that there will be a continuing need for greater capacity. Therefore, the chances are that any mast will want multi-occupier use in the future. Do you have a model that you know will be able to sustain multi-occupier use? Is that the design—

Stephen Webb: It is always possible. It comes down to what level of investment people want to make.

Q185 **Mrs Trevelyan:** Or are you building the size of mast you need simply for the EE contract? This is a practical question.

Mark Sedwill: I entirely understand the point. We are not going to build in advance a mast that we will just be able to have as a plug-and-play thereafter. Essentially, the four big providers themselves get notified of the sites. They then decide whether it is in their commercial interest to add to a mast. Commercial provisions are then made to ensure that that mast is equipped to do so. As I said earlier, Mrs Trevelyan, the reason that they are not in all these areas already is because commercially they have concluded that the cost and profit is not worthwhile for them. They still have to make those judgments. It will change that balance, but of course it will not mean that they will all want to be everywhere.



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Stephen Webb: The Scottish Government are very interested in this, and there have been a lot of discussions about potentially doing this. To build everything twice as big and have twice as much coverage, it would be a bit unreasonable to expect the emergency services to pay that on behalf of the wider—we would have to work out who is going to pay for this. At the moment, as the Permanent Secretary says, we are building on the basis of what we need to do coverage-free ESN.

Q186 **Mrs Trevelyan:** Why are you using a design of mast that you know will have an easy modular expansion opportunity?

Stephen Webb: It will depend mast by mast.

Q187 **Mrs Trevelyan:** It is not a standard model that you are using.

Stephen Webb: No.

Q188 **Chair:** Maybe that is an issue for the mast-supplying companies. I just have a couple of quick, but important, points. Mr Webb, we talked earlier about the testing of a breach of the network. Motorola will be testing the handsets, as I understand it. Is that right?

Stephen Webb indicated assent.

Q189 **Chair:** But they are also providing quite a lot of them, or certainly setting the specification. Is there any independent assurance that they will work? You say you have a couple of prototypes. Hopefully it is a bit more than just you. I've got nothing against you, but I am not sure you are the expert on testing these items.

Stephen Webb: The actual testing has been subcontracted by MSI to a different company. They are not going to be testing their own and the competitors'.

Q190 **Chair:** They're not marking their own homework.

Stephen Webb: No.

Q191 **Chair:** Are they testing it out with the people who might be using it at the end of the day?

Stephen Webb: Yes. The testing we are talking about here is making sure it is not going to disrupt the network. The testing with users is really to ensure that it meets their needs and is ergonomic and suitable. They are different sorts of testing. There has to be testing to make sure that they are going to work over the network without problems. That is reasonable. We would expect Motorola probably to come up with a handset, as will a number of others. We have been very careful to make sure the specifications do not exclude other providers and are not bespoke. It is a standards-based process.

Q192 **Chair:** Just to be clear, are you going to give a sort of kitemark to those handsets that are—

Stephen Webb: Yes. They have to go through this to be acceptable for the procurement—absolutely.



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Louise Bladen: In paragraph 3.6, we have written, based on our understanding of the testing, that the programme's testing strategy relies on Motorola Solutions and EE undertaking the early testing themselves.

Q193 **Chair:** That is the early testing, but thereafter there will be external testing.

Stephen Webb: Yes. That is really testing the software—the in-house testing, the integration testing and the user acceptance. You have the usual frame for those. For devices, there is what is called a NATS testing process.

Q194 **Chair:** So do you now have key milestones, from the prototype handsets you say you have today to where they are going to be? Do you have milestones in, as Mr Bacon said, a spreadsheet with dates and targets attached?

Stephen Webb: Yes.

Q195 **Chair:** And you are confident about that.

Stephen Webb: Yes, that is really pulling together the whole new integrated plan that I was talking about earlier, which will need to go to the users.

Q196 **Chair:** And with the overall programme, what are the key milestones that you need to have met between now and September 2017 when you are supposed to be starting to trial this?

Stephen Webb: There are an awful lot of them—a series of functionality drops that need to be done and a series of coverage milestones.

Q197 **Chair:** If you met someone at a party and explained what you do for a job and what your big challenges are in the next year, what would be the top three or four things that you have got to meet to make sure that when you are sitting in front of us again in September 2017, you will be saying, "It's fine; all I said last year is true. It has all happened."

Stephen Webb: We have a series of milestones for the extended area services getting out to planning and starting to build the process. That will be over the spring and summer. There is a series of device procurement milestones. Those are going to be critical. We have got to make a final decision on the London Underground and then kick that process off. There are lots of them.

Q198 **Mr Bacon:** This is all going to be on the spreadsheet that you are sending us.

Stephen Webb: You asked for one on coverage. I think you are asking for one on extended area services.

Q199 **Mr Bacon:** Actually, I'm interested in the milestones for the whole project. The evidence from the Olympics is that when people have been watched, and everything is public, and you have high-quality managers in place—you have been the SRO from the beginning so we can tick that



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box—

Q200 **Chair:** That is quite a big compliment from the deputy Chair.

Q201 **Mr Bacon:** —then we get delivery. I think there is a good reason, in your own interests, to have this in public. Doubtless Mr Sedwill will want to have a conversation with you offline about how he can edit what is published.

Q202 **Chair:** I think we are on to open government and shared data, aren't we?

Mark Sedwill: The Home Office always has been, Madam Chair.

Q203 **Chair:** We look forward to getting that.

You mentioned London Underground. That is a real concern. EE were very clear that it was a matter for the Home Office to negotiate access to London Underground. I refer you to the Harris review for the Mayor of London, which you will of course know about. He says, "I remain very concerned that this new system may not operate effectively on the underground system. Currently the Home Office... are working with TfL and police forces to see whether they can make the...system work on the underground using existing networks, which are themselves approaching the end of their natural lives."

That seems to me to be one of the biggest risks for this city at least. Where are you at with that, Mr Webb?

Mark Sedwill: May I make a quick point to start? First, I think that is really helpful, because what it does is bring together what is essentially the Mayor's responsibilities over TfL and the Mayor's responsibilities for the Met and security in London and meshes those together. Now, there are technical answers.

Q204 **Chair:** Yes, it is the technical bit that we are concerned about.

Mark Sedwill: My point is that the Mayor has, of course, both those sets of responsibilities, and it is therefore very much in his interests for TfL to be part of the solution.

Q205 **Chair:** I do not doubt that it is in everyone's interests for TfL to be part of the solution. I do not think there is any wilfulness by any party not to be part of the solution. The challenge is the technical solution. Mr Webb, what is happening? Where are we at?

Stephen Webb: We know how to deliver this. We know that you can actually use the existing leaky feeders, as they call the antennae that run through the tunnels; we know how you would deliver it in the stations and the back stations. The decision we need to make now is: do we go for a solution that is just for the emergency services, or do we combine it with one that also delivers a service for the general public? There are pros and cons of all this.

Q206 **Chair:** Would the latter—the one for the general public as well—cause a delay?



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Stephen Webb: That is the issue. We need to ensure with TfL that that does not happen. Equally, the argument would be that ideally you would invest once rather than having to do it twice, although with the first route, a certain amount of that could be recycled as well.

Q207 **Chair:** So where are the negotiations at the moment with TfL? Is an announcement imminent that it is all going to work underground?

Stephen Webb: In the next couple of months. It is not imminent.

Q208 **Chair:** So in the next couple of months, we will expect an announcement from TfL and the Home Office about how it is going to work.

Stephen Webb: I certainly hope so.

Q209 **Chair:** I know "a couple of months" in civil service parlance can be six months, and "summer" can be winter, but we will take what you say in good faith. Maybe I am cynical. Mr Sedwill and Mr Williams, I know you have talked about collaboration, and working with and listening to those on the ground. Let's say for argument's sake that you get a police and crime commissioner locally, or the chair of a health body—the ambulance trust, say—who says, "We're not doing this, because we're concerned." Maybe we were coming up to an election or something and they were nervous about it and took a stand. Would you ultimately mandate that a local area took it on? Mr Williams? Mr Sedwill is going to put his throat out.

Mark Sedwill: To be honest—we touched on this earlier—it would very much have to depend on the circumstances. If someone were being completely unreasonable, we would have to consider that kind of course, and if they were a complete standout and everybody else had agreed, of course we would not want to be imposing costs on everybody else. That is a hypothetical situation that I really do not expect to find ourselves in. We have had this with other major roll-outs—the National Police Air Service, for example—where we had to put considerable effort into getting the last couple over the line. I would expect us to be able to do that. We try not to mandate unless it is by consent and we are just therefore providing some legal certainty if we possibly can. Programmes like this only really work if they work with everybody putting their shoulders to the wheel and leading it.

David Williams: I have the same position as we set out earlier, but if there are good operational reasons why the service has not been demonstrated in the way that we expect, that is one set of circumstances. If it is around a degree of unreasonableness, we would want to look at how we push the collective effort forward within the constraints. As you know, our ability to mandate anything to NHS bodies is sometimes constrained.

Q210 **Chair:** That is very diplomatically put, as I would expect from a man of your experience. Going back to the beginning, we had witnesses in before you arrived on Motorola and the negotiations with Airwave. I want to nail this one down before we reach our conclusion here. On the deal done



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with Motorola and Airwave, as we understand it, there were offers made by Airwave prior to Motorola taking ownership, which were rejected but were of a similar nature. Is that right, Mr Webb?

Stephen Webb: There has only ever been one offer. That was also to do with the extension of contracts to 2020, so it was what we would do for this period between 2016 and 2020. The offer that was made then was, for various reasons, considerably less attractive than the one that we finally got. What we agreed with Motorola was in the context of the programme. It included a number of other things that were very helpful to us like this interworking solution. Generally, the offer we had from Airwave was not a particularly appealing one.

Q211 **Chair:** Was it a similar price?

Stephen Webb: It was broadly a similar price.

Q212 **Chair:** It was more the attitude, was it?

Stephen Webb: It did not have the benefits of de-risking, and it certainly did not have the opportunity we now have to extend incrementally into 2020.

Mark Sedwill: I think it came quite late in the process. This was not right at the beginning when we were making the decisions about which way to go. This came essentially once we had demonstrated we were on this new strategic solution, and therefore they had to deal with the reality of that, whereas they had, I think, hoped that there would be a longer gap after 2020.

Q213 **Chair:** Can I just ask about assurance? Have you got the right technical people in your team, Mr Webb, or access to them perhaps via Mr Maxwell or others to get this done? We often talk about skills in government, but there are a lot of different elements to this and a lot of interactions. Can you be sure you are not being wowed by technological speak?

Stephen Webb: Indeed. I think we have got an outstanding team with lots of experience of delivering these kinds of projects. It is a cutting edge area. Telecoms expertise is very hard to find. To find both technical expertise for the team and then independent staff to sit on the programme board and challenge us is even more difficult, because if you find anyone good we are minded to bring them into the team and help us deliver the programme. We are working with IPA and others to try to see what we can do. At various stages in the process we have brought in that red team challenge to look at our proposals—to kick the tyres. Obviously, Liam, the GDS and the gateway reviews do that. You can't get enough of it. It is very hard to find. Within the team, I am pleased.

Q214 **Chair:** And how have you kept that? Tell us the secret. We often hear about shortages. How have you kept that team together and not lost them all to lucrative jobs in the private sector?

Stephen Webb: We lose a fair few to lucrative jobs, but we try to replace them. On the senior teams we have had a lot of stability. People are very



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committed and excited about this project. It will make a huge difference and people want to stay and see it through—I hope.

Q215 **Chair:** We hope you will stay and see it through because we don't like people leaving at this point in a project. Mr Sedwill, a final question from me before I hand over to Mr Bacon. There are concerns articulated in paragraphs 2.11 and 3.17 of the Report about the management arrangements once the programme is operational. Why haven't those been set out clearly yet? When will we have a clearer idea of what is going to happen once it is rolled out?

Mark Sedwill: Is this question driving at users having to feed in through the Home Office, as essentially the broker?

Q216 **Chair:** Yes, because you are at the client end and there are all these different users out there. It is a bit clunky for them. How are you going to manage it?

Mark Sedwill: Mr Webb may be able to answer in more detail. We have 400 institutions out there, so their individual negotiating power with the handful of suppliers would obviously be quite limited. Obviously we need to put together mechanisms so that individual problems in individual areas are followed up. Our job is to identify if there are significant issues emerging such that we start to see a pattern across the country. If, for example, authorities in Scotland and authorities in Cumbria are experiencing some of the same issues, we are the only people who will be able to identify that and go to the suppliers and say, "Right, there is a systemic issue here, and you need to fix it." That is essentially how we would use it.

Q217 **Chair:** Who? Is this a management board? Mr Webb's team?

Mark Sedwill: This would essentially be one of the follow-on arrangements to the programme itself.

Q218 **Chair:** So what is the mechanism? Is it Mr Webb's team or a new version of that?

Stephen Webb: We have a team, a service management organisation, within the programme at the moment, and that will ultimately go into the live services part of the Home Office, which is managing it. There is quite a detailed MOU. The Report made a fair point, and we have now produced the blueprint for how the SMO will work, and we have put it around to the users and other organisations. They are deeply embedded in it, and there are quite clear arrangements for how it will be funded and what it will do. We made sure, I hope, that we have sufficient resources to manage the contract over its life, because in the past there has often been experience of doing quite well on the procurement and then losing everything in the contract change notices. We have tried to design it so that the cost of the SMO is charged to the users as part of the service in order to ensure that they have the proper level of resources that they need.

Q219 **Chair:** Sir Amyas wishes to ask a question.



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Sir Amyas Morse: I am just curious about intellectual property. Presumably something is being created here. Will it belong to the contractors? Listening to Motorola, they were clear that they are putting together new capability. If they are generating intellectual property, is that going to belong to the contractors? Have you reserved any intellectual property rights yourselves?

Stephen Webb: They will largely gain the benefit of exploiting it. We are moving more and more towards a standards-based system. To the extent that there is proprietary stuff at the moment, we have a fixed-price contract in these areas that protects the public. If they are successfully able to exploit it internationally, we would welcome that. The larger the infrastructure and the larger the number of users you have internationally, the more support there will be for the products.

Q220 **Mr Bacon:** I have just two questions. The NAO drew attention in paragraph 3.18 to the highest-level oversight. Mr Sedwill, your response was that it was some sort of bureaucratic mistake that you had not conveyed sufficiently clearly the way in which you were re-categorising your risks. Yet, the NAO went to a lot of trouble to write this Report and felt the need to draw attention to it in paragraph 3.18. Given that the Home Office has form on this—I am thinking specifically of the C-NOMIS project, where it turned out that for three years from 2004 to 2007 neither Ministers nor senior managers in the Home Office, and not even the project board, were aware of the problems, and the costs tripled—can you tell this Committee that you are completely confident that there is enough senior oversight at the highest levels of this project?

Mark Sedwill: Yes.

Q221 **Mr Bacon:** Good. This is my final question, and it may be for you, Mr Webb. My colleague Bridget Phillipson asked Paddy McGuinness—the deputy national security adviser—on Monday, when we were looking at protecting Government information, about a range of IT projects. She said: “there would appear to be the common theme that they just are not delivering...the financial case, the savings, the timetabling. What are we going to do to stop this happening? It seems to happen time and again in Government projects, particularly when it comes to IT.” Mr McGuinness’s response was, “One of” the things we can do “is to be in the middle of the pack on what is delivered by commercial services rather than always trying to be at the front of it and generating innovative approaches.” We know from the NAO that this is inherently high-risk and that such an approach has not been tried nationwide anywhere in the world. What do you know that Mr Paddy McGuinness doesn’t know?

Stephen Webb: In an ideal world we would not absolutely be at the bleeding edge, doing things first. There are reasons—commercial reasons—that meant that all the other options were equally risky. Right from the start of the programme we looked back and thought, “If we owned all the infrastructure, we could sweat it for a bit and see how other people who went first had got on and then moved on.” That is a perfectly rational thing to do. That option was not open to us. I don’t disagree with



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him. I think we have done a huge amount to mitigate those risks that he rightly points out. Actually, his organisation is very closely involved with this programme, helping us out around accreditation and so on, which is very welcome. I don't disagree with him; I just don't think we had a choice, and I am confident we are in a position now where we can deliver this.

Mr Bacon: With Mr Sedwill's senior-level oversight, I am sure you are right. Let's hope you are.

Q222 **Chair:** Let me ask the final question to each of you: what keeps you awake at night about this programme?

David Williams: I find in my job that I compartmentalise work and my personal life, and in the five hours a night I get to sleep, I sleep pretty well.

Q223 **Chair:** Okay, so when you're awake then. In the day, what worries you?

David Williams: For me it is about the timetable risk of demonstrating the technical solution that has been the main theme of the conversation this afternoon. For the ambulance services, the logistical challenge is around getting the vehicle fit done and in terms of reaping the longer-term benefit, how we link in to the urgent emergency care review, the ambulance response programme and get those operational changes and benefits downstream.

Mark Sedwill: As you know, at the Home Office other things keep me awake at night.

Chair: I'm surprised you sleep at all, Mr Sedwill.

Mark Sedwill: To the extent anything does. I think it is the question we have dwelt on all afternoon: the fact that this is an innovative programme, with considerable complexity. It is high-risk—there is no question about that; it is entirely agreed between us. Therefore, we have to make the effort right the way through its design, build and implementation to manage all those risks. I am determined that we will. I think we are doing it well, but just the level of risk in a programme of this scale, complexity and innovativeness has to be the thing that is most on my mind.

Stephen Webb: For me, the number of moving parts brings in complexity and then the sheer number of users. We have three emergency services and the Scottish and the Welsh Government. There are an awful lot of people to keep informed and only so many hours in the day. The complexity and sheer number of moving parts is the biggest challenge.

Liam Maxwell: The three Ts really: first, TfL, which I am concerned about; secondly, just that the technology delivers, and I am confident that it will; and thirdly, the most important thing, and the thing that worries me, is team. We have worked with lots of programmes across Government. We were very intensely involved in this programme until about 2013. The programme director who came in in 2013 was a step

change away from anybody we had worked with up to that point, and he is excellent, so the team he has got together is very good. Keeping that team together is why we have much more faith in the programme than we might do and, looking from the outside, you might do.

Q224 **Chair:** There is also a risk if that team doesn't hold together.

Liam Maxwell: Yes.

Chair: But the TfL one is a salutary reminder for those of us in London. We need to keep on that one.

Thank you very much for your time. We were interrupted by the vote, which has delayed the hearing. As ever, our transcript will be up in the next couple of days. The report is likely to come out, realistically, after Christmas. We will keep you posted and make sure you get a copy.