



National Audit Office



REPORT

Progress with delivering the Emergency Services Network

Home Office

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Key facts

£2.0bn

forecast amount spent on ESN up to March 2023

uncertain

total expected lifetime spend on the Emergency Services Mobile Communications Programme. In June 2021, the Home Office estimated this at £11 billion, including the cost of running ESN and Airwave until ESN replaces it. The Home Office is updating its forecast which will increase

uncertain

date Airwave is expected to be turned off. In June 2021, the Home Office forecast to end Airwave in December 2026. It is updating its forecast, but delays are expected

99.86% target for the availability of Airwave, which is generally exceeded

£1.1 billion Competition & Markets Authority's (CMA's) provisional estimate of Motorola's supernormal profits, without a charge control, from operating Airwave between January 2020 and December 2026

>£150 million potential annual savings on the cost of Airwave from 2023 to 2029, should the charge control provisionally suggested by the CMA be introduced

£304 million total amount the Home Office forecasts it will have paid Motorola for the Emergency Services Network (ESN) to 31 March 2023. This includes for software and systems that the Home Office will not use when ESN operates, but considers valuable, and recurring payments for having aspects available for testing

£27 million amount the Home Office agreed, in December 2022, to pay Motorola to settle outstanding milestones and disputes following negotiations to end its ESN contract early. Motorola will also be paid £18 million to continue testing and enable the Home Office to ensure that ESN works with Airwave

Summary

1 In 2015, the Home Office contracted with suppliers to provide a new communication network (Emergency Services Network, ESN) to replace its existing Airwave network. All 108 police, fire and ambulance services (users) across England, Scotland and Wales use this critical network to communicate between the field and control rooms. As part of its Emergency Services Mobile Communications Programme (ESMCP, or the programme), the Home Office intended ESN to fully replace Airwave, cost less and provide users with access to modern mobile data.

2 For users to start using the new network and then turn off Airwave, various elements need to work together. In 2015, the Home Office contracted with EE Ltd (EE) to provide priority access to its mobile network and increase network coverage. It also contracted with Motorola Solutions UK Limited (Motorola) for software and systems including critical features not normally found on a mobile network, such as a first-of-a-kind 'push-to-talk' functionality.¹ The Home Office has contracted different suppliers for other parts of the programme such as upgrading users' systems and ensuring that ESN covers remote areas.

3 In 2016, our first report on ESMCP assessed the programme as high risk because of: the commercial approach; the ambitious technology and timetable; and uncertainty about users accepting ESN. It found that Motorola's purchase of Airwave in February 2016 created commercial risks given Motorola's role in ESN. It also found that the Home Office was trying to adopt an approach not used at a national scale in other countries which carried significant implementation risk. When we reported a second time, in 2019, we found that after a reset in 2018 the programme remained high risk. We reiterated that the Home Office should carefully manage the risk associated with Motorola's dual roles.

4 In April 2021, as the Home Office considered that Motorola's Airwave profits were excessive and disincentivised it from completing its ESN contract, it wrote to the Competition & Markets Authority (CMA). To remove the risk that it would be forced to sell Airwave, in November 2021, Motorola told the Home Office that it may not extend its ESN involvement beyond December 2024. In 2022, the Home Office began to find a replacement and agreed to end Motorola's contract early.

¹ 'Push-to-talk' is the ability to make near-instant calls at the push of a button without having to wait for the recipient to answer.

5 The Home Office forecasts that, between April 2015 and March 2023, the programme will have spent £2.0 billion on ESN and £2.9 billion running and maintaining Airwave. In 2018, following significant delays, the timetable for turning off Airwave was extended from 2020 to 2022. In 2021, the timetable was extended further to 2026. Following recent events, the Home Office now expects the date for turning off Airwave to be later, but it cannot be more specific until it has replaced Motorola.

6 Our previous reports evaluated the Home Office's progress with ESN. This provides context for our current report, which describes the Home Office's progress since our 2019 report and our view of the programme's risks and issues. We do not evaluate performance to date, or seek to apportion responsibility for any challenges experienced by the programme. Because of the uncertainty facing the programme, we do not assess the value for money of continuing the programme or provide an exhaustive list of risks.

Key findings

Progress since our last report

7 In December 2022, the Home Office and Motorola agreed for Motorola to leave ESN early and receive £27 million to settle outstanding milestones and disputes.

By late 2021, when Motorola had said it may not extend its ESN involvement, the Home Office and Motorola had limited confidence in each other's ability to complete the software within the time available and to work constructively together. The Home Office and Motorola therefore negotiated to terminate Motorola's ESN contract early, which the Home Office concluded was the quickest and least risky way to exit the contract. In December 2022, the Home Office agreed to pay Motorola £45 million which included £27 million to settle outstanding milestones and disputes, with the remainder for both testing and enabling the Home Office to ensure that ESN works with Airwave. The Home Office recognised that Motorola's exit from the programme would have a significant impact. It must introduce new software and systems and, while it finds another supplier, other parts of the programme have been paused (paragraphs 1.3 to 1.5 and 1.16 to 1.17).

8 The Home Office has not received the critical systems and software that ESN needs, and will not use any of Motorola's work when ESN is live.

In November 2021, when it indicated it could leave the programme, Motorola had been paid for meeting 85%, by value, of its contractual milestones. Some initial versions of Kodiak, provided by Motorola, were completed late. In June 2022, the Home Office estimated that delays to versions of ESN, which relied on Motorola's software, would contribute to pushing the programme back by 15 to 27 months. We have not attempted to determine responsibility, or to exhaustively set out reasons for delays to which both the Home Office and Motorola will have contributed. The Home Office forecasts that it will have paid Motorola £304 million by 31 March 2023. This includes recurring payments for having elements of ESN available for testing and payments for creating ESN software and systems. The Home Office does not expect to use any of the software and systems provided in ESN but considers that it has obtained some value from this work (paragraphs 1.11 to 1.17 and Figures 4 and 5).

9 Other elements of the programme have been delayed with some not able to progress until the Home Office finds a new user services provider. For example, work to provide users with full network coverage is progressing more slowly than expected in 2019. Although the Home Office considers that it can predict where coverage is incomplete, this has not been fully tested. EE has nearly completed its work to establish the main network, but the Home Office must still obtain planning permission for work on 42 of the 292 remote area sites. The Home Office no longer has a contract to provide it with a handset for ESN. The handset it had procured will not be supported after 2023. As the handset must work with the systems and software, the Home Office expects the new user services supplier to provide a handset for testing. The Home Office also needs to ensure that users can upgrade control rooms, but it does not have a full understanding of the work involved (paragraphs 1.18 to 1.26 and Figure 6).

10 Although Airwave will eventually become obsolete, the Home Office does not know with certainty that it cannot last during the 2030s. It continues to perform well, generally exceeding its 99.86% availability target, and users are confident that it allows them to communicate effectively. In using Airwave, the Home Office recognises that it must maintain a relationship with Motorola as Airwave's owner. This may be more challenging because any remedies decided upon by the CMA could affect this relationship. Although Airwave technology will eventually become obsolete, the Home Office does not know when this will happen. While some countries are replacing Airwave technology, others continue to use it with Motorola confident that Airwave can be used well into the next decade with adequate investment. Continuing to use Airwave could cost at least £250 million a year. For this to happen, the Home Office must formalise extending the Airwave contract beyond 2026, and itself or users must pay to maintain and replace some Airwave devices and control room systems. The Home Office considers that it cannot take the risk of remaining on Airwave. In August 2022, the Home Office decided to continue with ESMCP because it would cost more to start a similar programme that introduces a new network by the 2030s (paragraphs 1.6, 1.27 to 1.29 and Figure 7).

Commercial risks

11 The Home Office is currently trying to find a suitable replacement for Motorola, which addresses some risks. Motorola provided critical aspects of ESN, including push-to-talk software. The new supplier will not have the same conflicting incentives as Motorola, who owns Airwave. The Home Office had considered making a direct award of Motorola's contract to EE but in August 2022, after analysing its options, decided to reprocure the contract. It began engaging with the market in October 2022 and expects to award a contract in April 2024. The Home Office told us that it assesses the risk of not identifying a supplier as low because alternative technology is available, but it has not yet been able to fully test this assessment (paragraphs 1.11 to 1.18 and 2.3 to 2.4).

12 After considering alternatives, all of which the Home Office assessed as medium or high risk, it decided to continue with its current commercial approach to avoid further delays. It recognises that the split of responsibilities between suppliers is suboptimal. It cannot fully address this without revisiting its other contracts, which would delay the programme further, and it has concluded that the current structure is workable. It has started to identify detailed lessons to help improve the new user services contract. As part of this contract, to help build users' confidence in ESN, it will continue to specify detailed requirements in advance but recognises that it may need to respond flexibly to user feedback. We have previously found that government digital projects need a flexible contracting process that recognises that scope and requirements may change (paragraphs 2.5 and 2.6).

13 The Home Office plans to award EE a new contract, without competition, extending the role of EE. Between 2015 and March 2023, it forecasts that it will pay EE £660 million for network infrastructure. EE's contract was due to be recompleted in 2022 but, following the 2018 reset, was extended to 2024. The Home Office is now seeking to award EE a new contract, without competition, to avoid delaying the programme. It intended the programme to use short-term network infrastructure contracts to avoid being locked into a single supplier and to take advantage of innovation. Extending EE's role creates a longer-term risk that the Home Office cannot realise these benefits. Also, a direct award may be subject to a higher risk of challenge, which could then delay the programme. The Home Office intends to recomplete the contract when it ends (paragraph 2.7 and Figure 4).

Technology risks

14 There remains a risk that the technology will not work at scale across a mobile network. The system to be provided by Motorola was regarded as market-leading and alternatives may require significant development. Since the Home Office contracted with Motorola in 2015, the market for this technology has widened with other countries developing similar approaches, and the Home Office is now more confident that ESN will technically work. However, it still needs to be developed to the standard and scale that ESN requires. The new contract will be the Home Office's third attempt to procure this technology. The Home Office has yet to test the technology in real-world conditions at any significant scale (paragraphs 2.8 to 2.10).

15 The Home Office has not yet decided how ESN will come together as a network and who will be responsible for the live service. We previously found that the Home Office was unclear as to how the different elements of ESN would be made to work together (“integration”), and did not have the capability it needed to fulfil its role. It started rating technical integration as a ‘red’ risk in February 2022. As the required skills are not always available within the Home Office, it has relied on contractors. It does not yet know how hard it will be to integrate the new software. This will depend on whether there is a clear technical architecture and whether Motorola’s work followed expected standards so can be easily replaced. The Home Office has paused work on how it will run ESN when it is live and it will resume this work when a replacement for Motorola is appointed (paragraphs 2.11 to 2.13 and 2.26 to 2.28).

User take-up risks

16 Users are now more confident in the programme’s leadership but organisations expect to decide themselves whether to use ESN. Police and fire user representatives told us that they had an improved relationship with leaders who better understood their needs. The Home Office has also made progress in agreeing with users the requirements that must be met before determining whether ESN can fully replace Airwave. However, individual police forces will make their own decisions about when to stop using Airwave. As suggested in our previous reports, given the complex network of users and approvals, getting users to accept ESN as a replacement for Airwave is inherently difficult. Transition planning remains at an early stage and some users are now temporarily disbanding dedicated ESN teams that had been preparing for testing and transition (paragraphs 2.14 to 2.22 and Figures 9, 10 and 11).

Programme-management risks

17 The Home Office recognises the programme as high risk but has not been able to reduce many of the significant risks. While it has improved the information reported to the programme board, this is sometimes inconsistent and incomplete. Since April 2021, most reported risks have consistently been assessed in the highest or second highest category. Most of those we observed in 2019 are still reported as risks and some have become more challenging or have crystallised. The Home Office told us that it now has increased confidence in the programme’s leadership. From June 2022 to February 2023, the programme’s senior responsible owner, who has a policing background, also had temporary responsibility for the National Law Enforcement Data Programme. This is something the Home Office previously told Parliament it would avoid (paragraphs 2.23 to 2.27 and Figures 8 and 12).

18 The Home Office is updating the programme rationale alongside the timetable and costs. It is developing a new business case, for approval in 2024, which will set out a revised strategic case for continuing the programme. The programme's original objectives from 2015 – saving money and bringing mobile data to users – may no longer be as strong justifications for the programme. The CMA's provisional recommendation for a charge control on Airwave would save the taxpayer at least £150 million a year between 2023 and 2029, which would then reduce any savings from ESN.² Also, most users we surveyed are already using data, including through commercial mobile contracts. Where users have adopted different data contracts, it will be harder for the Home Office to standardise approaches, which has an impact on both data and security risks. The Home Office told us that it would set a realistic programme timetable, not necessarily led by the end of the Airwave contract (paragraphs 2.29 to 2.30).

Concluding remarks

19 The Home Office forecasts that it has spent some £2 billion on ESN since 2015 but is a long way from having a functioning network to replace Airwave. A 2018 reset, introduced to address technology and commercial issues, did not work. Recognising this, in 2021 the Home Office wrote to the CMA expressing concerns over Airwave's excessive profits and Motorola's incentives to complete ESN. Subsequently, Motorola indicated that it may leave ESN and, in December 2022, the Home Office and Motorola agreed to end Motorola's ESN involvement early. This addressed recognised issues but means that the Home Office has paid Motorola for software and systems it will not use and Motorola has written-off some ESN investment. The Home Office must find a new supplier, which will not happen before April 2024, to continue the programme. However, although replacing Motorola may have been necessary, it does not guarantee that the programme will succeed.

20 With the aim of putting the programme onto a stable footing, the Home Office has taken some tough decisions. These affect the programme's risks and uncertainties, but the Home Office cannot yet be certain of the impact of its actions. It now has more confidence in the programme leadership, which has improved the programme's relationship with users that is critical to ESN being accepted. However, ongoing uncertainty risks putting this new-found confidence at risk. To avoid doing so, the Home Office needs to make clear to users the value of ESN, particularly as Airwave meets their expectations and many have their own data solutions. It also needs to continue revising timetable and cost estimates, avoiding a repeat of past mistakes such as setting unrealistic time frames; complete other aspects of ESN; and bring everything together into a working service. Because Airwave will eventually need to be replaced, the Home Office must make sure that it has taken the time it needs to fix the problems and not waste money, as we have previously reported, or reset the programme again.

² Figures estimated in October 2022, at the time of the CMA's provisional decision.

Recommendations

21 Given the significant uncertainties facing the programme, the Home Office has an opportunity to ensure that the programme establishes a sustainable and realistic foundation. To help it do so, as it continues to redevelop its plans, we recommend that it:

- a** completes the work it has started to revisit the programme's objectives and assumptions, and to re-articulate the programme's rationale to demonstrate whether ESN remains the right thing to do given the increasing use of mobile data by users and technology developments;
- b** before the end of 2023, establishes a process for continually assessing the risks and investment required to maintain Airwave to better understand how long this network could be used for, and therefore the time it has available to complete ESN;
- c** continues developing a revised programme plan. This should include realistic time frames that are not driven by an arbitrary date for shutting down Airwave, but which allows sufficient time to complete and test that ESN's technical architecture works. This should include time and cost estimates that allow for optimism bias and are presented in ranges to reflect uncertainty where appropriate;
- d** uses its experiences from the user services contract to better manage the risks that it needs to avoid, or mitigate, with the new supplier to increase the likelihood of the technology being introduced on time and in line with users' needs;
- e** ensures that the new network infrastructure contract has sufficient mechanisms and incentives to establish effective relationships and ensure value for money within this contract period, while supporting a wider strategy for how the Home Office will avoid being locked into one supplier in the future; and
- f** improves the programme's management information, so that it is consistent and timely, and includes metrics as well as leading indicators to help consider progress and identify where action is required.