



Emergency Services Network (ESN) – Information Note

1. **Introduction**. The purpose of this briefing note is to explain: who is involved in delivering the **Emergency Services Network (ESN)**; why is it required; how is it being procured; who is it being procured for; where is it required; and when is it required.
2. **Why the Home Office?** The Home Office (HO) is the lead government department for border control, immigration and passports; drugs and alcohol policy; counter-terrorism; crime; and police and fire, which along with the ambulance services makes up the three Emergency Services (3ES). UK's Critical National Infrastructure (CNI) is a fundamental enabler for these important public safety services to be delivered effectively for the national good.
3. **Why ESN?** The 3ES and over 300 other public safety and national contingency organisations across England, Scotland and Wales are required to protect the public and save lives. Today they use a mobile radio system (Airwave) to communicate within and between the 3ES but this needs replacement. Airwave delivers a secure and resilient critical voice communications with high levels of coverage and availability, but the technology cannot deliver broadband data services, it is very expensive and contracts are beginning to expire. The HO will not be extending the contracts for Airwave beyond those necessary to achieve an efficient transition to the new service, ESN.
4. **How will ESN be procured?** The Emergency Services Mobile Communications Programme (ESMCP) is the HO-led programme responsible for replacing Airwave. ESMCP aims to provide an integrated critical voice and broadband data communications service for the 3ES that meets the public safety requirements for functionality, coverage, availability and security. The chosen technology will be based on enhancing a commercial 4G network, configured to give the 3ES priority over other users. Police, Fire and Health are all represented on the Programme at strategic and operational levels, including the relevant government departments and devolved bodies in Scotland and Wales. ESMCP is progressing in close collaboration with the 3ES, who provided the requirements for their future communications and will be responsible for transitioning on to the new service, ESN.
5. **What is ESN?** The new service, to be known as the **Emergency Services Network (ESN)**, will be delivered across England, Scotland and Wales (there is a map of predicted infrastructure locations – a mix of existing and new sites – at Annex A). ESN is being procured competitively to provide a high-quality service that makes full use of the latest technology in the telecoms sector, and has a number of related projects (see table below) to provide the capability, resilience and security required for what will be a key part of the CNI supporting public safety. ESN will act as a platform for business applications being developed by the 3ES and other users. ESMCP comprises:

1. **Delivery Partner (DP)** (Kellogg Brown and Root). A delivery partner to: oversee the build-out of ESN; programme manage and report on transition; provide cross-Lot integration; training support; vehicle installation reference design and assurance; and delivery support.
2. **User Services (US)** (Motorola). A service provider for: end-to-end systems integration; public safety functionality; account management; network and IT infrastructure; technical interfaces; user device approval and management; application approval and hosting; customer support; and service management.
3. **Mobile Services (MS)** (EE). A mobile network operator (MNO) to provide an enhanced radio access service with highly available national coverage and an interface to US and the EAS.
4. **Extended Area Services (EAS)**. Additional infrastructure over which EE will extend their network into rural areas.
5. **Air to Ground Services (A2G)**. Additional infrastructure over which EE will extend their network to provide a national service above 500ft.
6. **London Underground Services (LUS)** (TfL). Additional infrastructure over which EE will extend in the London Underground.
7. **Devices (handheld, vehicle and airborne)**. A range of commercial, ruggedized and specialist devices to be used by officers and installed in a range of vehicles.
8. **Control rooms**. Conversion of control rooms to accommodate ESN and connections over the



Public Services Networks (PSN) to the US supplier's data centres.

9. **Vehicle and aircraft installations.** Conversion of 3ES vehicles to accommodate ESN.

10. **Transition support services.** Support to the 3ES user organisations to carry out transition.

6. **When will ESN be deployed?** ESN is required to be in place so that the 3ES can transition when Airwave contracts expire between 2017 and 2019. There will be a 21 month mobilisation phase to design, build, test and assure ESN that will run between December 2015 and September 2017, followed by a transition phase that will enable users to transition from Airwave to ESN. Throughout transition there will be interoperability between the two systems.

7. **Where will ESN be deployed?** A key requirement of ESN is to deliver coverage to major and minor roads which will require additional infrastructure to be provided by the MS and EAS suppliers – approximate locations have already been identified. *Positive relationships with stakeholders such as the devolved Governments, Local Planning Authorities, National Parks and potential landowners will therefore be vital to the successful delivery of ESN.* Different contractual arrangements within ESMCP will collectively deliver infrastructure for the ESN as follows:

a. **Mobile Services (MS).** EE has prepared a radio plan which identifies potential sites they will deliver for ESN and from which they intend to offer a commercial service (**blue dots**). EE will operate these sites, many of which will become part of their core network. Some sites will be retained by HO for use by the follow-on MS supplier.

b. **EAS.** The EAS project will extend the coverage provided by EE. This requires telecoms infrastructure to be secured in defined but primarily rural, remote and commercially unviable areas where little or no MNO coverage exists (**red dots**). The HO will be acting as the prime contractor to contract with Acquisition, Design and Build (ADB) suppliers for EAS sites and transmission suppliers for their backhaul. Sharing existing sites will be negotiated where possible but EAS coverage needs will mainly require new sites that the HO will then own and operate and from which it hopes to offer a commercial service. EE will install their active equipment and connect this to their core network. All sites will be retained by HO for use by the follow-on MS supplier.

c. **A2G.** The EAS team are also undertaking site acquisition for the A2G system that provides communications to emergency services aircraft above 500ft (**green dots**). It is anticipated that A2G can be delivered through site sharing arrangements.

8. EAS/A2G sites that are being delivered by HO and the sites being delivered by the MS supplier may be in the same local planning authority's area of interest. Every effort will be made to ensure a coordinated approach to the relevant local planning authority.

9. **Key Messages.**

- ESN is providing critical national infrastructure to enable communications and interoperability for the police, fire and ambulance services in England, Scotland and Wales (including extension into remote areas) to help them cut crime, fight fires and save lives.
- ESN will provide the same capability as Airwave as well as an integrated 4G mobile broadband data service using the latest generation of mobile technology.
- Government has provided £1bn of investment to build and operate ESN but your support for the locating of new or enhanced equipment in rural locations will be vital to delivering the network by 2017, thereby improving public safety and reducing cost to the tax payer.
- In addition to the 3ES, ESN may offer a 4G mobile service to local EE customers, providing access to digital services that are increasingly essential to everyday life and business, and a 999 service to all mobile users. Other MNOs will have access to upgrade the new infrastructure should they wish to install their own equipment and offer services in future.
- Satellite solutions for backhaul are being considered where more cost-effective or timely.



Annex A: Predicted infrastructure locations for ESN

