

Results of the Study

Use of commercial mobile networks and equipment for "mission-critical" high-speed broadband communications in the sectors of PPDR, Transport and Utilities



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GOAL OF THE STUDY

explore the potential role that commercial MNO networks – with associated economies of scale for commercial equipment (including handheld devices for end-users) – could play in ensuring the provision of "mission-critical" high-speed broadband communications in the following sectors in Europe:

- **PPDR** - principally police, fire and emergency medical services;
- **Utilities** – electricity, gas and water. Intelligent energy management systems and smart energy grids;
- **Transport** - Intelligent transport safety and transport management systems (ITS) with focus on road and rail.

2 main options considered:

- i) public land mobile networks run by commercial operators**
- ii) dedicated networks created specifically for use in these sectors.**

The Study also examined broadband needs of all three sectors.

Five scenarios based on different types of deployments:

- 1. Dedicated networks and dedicated specialised equipment**
- 2. Commercial MNO networks and commercial equipment**
- 3. Dedicated networks with commercial networking equipment**
- 4. Hybrid networks**
- 5. Common multi-purpose network**

KEY FINDINGS OF THE STUDY

- European society depends on mission-critical services;
- Mission-critical services increasingly require wireless broadband support – most required by PPDR services;
- High-speed mobile broadband networks are currently deployed in Europe, but mission-critical users have reservations about relying exclusively on commercial mobile services;
- Commercial mobile broadband networks **CAN BE USED** for mission-critical services **ONLY IF** five requirements are fully met.
- Specific measures are proposed to build the confidence of mission-critical users in the MNOs;
- For the medium and long term, sharing commercial MNO infrastructures for both public and mission-critical purposes makes sense;

FIVE REQUIREMENTS MUST BE MET FOR USING COMMERCIAL MOBILE NETWORKS FOR MISSION-CRITICAL OPERATIONS

- (1) Commercial MNOs must show stronger commitment to network resilience, the acceptance of limits on price increases and contract conditions revisions, assurances of ownership continuity, focus on quality of service for priority mission critical traffic;
- (2) Commercial mobile networks have to be "hardened" and modified to provide over 99% availability. Geographic coverage must also be extended as needed for mission-critical purposes and indoor signal penetration improved at agreed locations.
- (3) Requirements (1) and (2) must be fulfilled at reasonable cost. As a rule, the selective expansion and hardening of commercial networks for mission-critical use should not cost more than it would cost to build a dedicated national LTE network for that purpose.
- (4) Hardened LTE networks must be able to provide different types of service required by each of the three sectors (PPDR, Utilities and Transport).
- (5) Commercial mobile networks should be able to overcome ingrained Member State preferences for state controlled networks for public safety communications.

EXPLOITATION OF THE RESULTS

Study report will serve as **GUIDANCE DOCUMENT** to administrations in Member States who consider the use of commercial mobile networks for mission-critical operations (e.g. broadband PPDR).

The Commission does not intend to adopt any legally binding measures in the context of the use of commercial mobile networks for mission-critical operations.

Study results can be used for preparing H2020 call DRS-18-2015: Communication technologies and interoperability topic 1: interoperable next generation of broadband radio communication system for public safety and security – Pre-commercial Procurement (PCP).