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Industrials Insight
The eCall Technology Dilemma Facing OEMs and M2M Providers

OEMs are facing a technology dilemma. EU regulation requires motor vehicles to be fitted with 112-based eCall from 31 March 2018.

This obligation is technology neutral. The options available on the market include 2G, 3G or 4G technology. However, current EU standards for eCall devices are limited to 2G and 3G technologies that use circuit-switched connections. Industry-led initiatives towards a new standard for 4G interoperable eCall devices are only at the early stages – 4G does not use circuit-switched technology, but is based on IP Multimedia System (IMS) technology.

The technology dilemma arises as member states begin to plan their eventual switching off of 2G/3G networks in favour of 4G networks. While most of the eCall functionality exists in IMS Emergency Call and IMS Multimedia Emergency Service specifications, OEMs must upgrade or refit current eCall devices in their vehicles with 4G interoperable functionality, in order to be able to guarantee that an eCall is transmitted to emergency services in case of a car accident.

Others face the same dilemma – in particular, M2M applications using 2G/3G networks will also need to transition to 4G when 2G/3G networks are no longer available. An adequate transition solution is, thus, desirable at pan-EU level for both OEMs and M2M providers.

There are divided views among operators about 2G and 3G. Clearly, for reasons of spectrum efficiency, as well as customer experience, it makes sense to move as many customers as possible onto 4G and 5G. However, retaining a narrow 2G band has been considered (including by major European operators) for a variety of reasons, including:

- There is likely to be a tail of voice-only customers with quite antiquated handsets for some time to come – getting them all to upgrade could be time consuming and expensive
- There are a number of narrow-band IoT applications that work really well on a 2G network, and 2G is typically in low-spectrum bands that are well suited to wide coverage for narrow-band communications

While some European operators seem to be looking to switch off 3G before 2G, other operators are looking to switch off 2G and keep a 3G coverage layer. Providing coverage for eCall could be influential in operator choices, particularly if OEMs were willing to contribute towards the cost of maintaining 2G narrow-band coverage (in order to avoid the cost of swapping out eCall modules in existing vehicles).

The European Commission considers that, in principle, it is the role of OEMs and M2M providers to adapt to the evolution of network technology. However, it also acknowledges the need to take into account the lifetime of existing vehicles equipped with 2G/3G eCall systems and the need to upgrade these vehicles, as well as the PSAP infrastructure in member states. Old technologies can take a long time to die. Pager networks are still running in a number of European countries, not least to support emergency services.

The unit of the European Commission in charge of telecom regulation and policy (DG CNECT) is, therefore, planning a study on the prospective use of 2G and 3G networks, including for the provision of the eCall service. This study is expected to provide insights as to the continued demand for, and spectrum needs of, existing 2G and 3G networks and their respective remaining lifespans. The forthcoming study is also anticipated to cover aspects related to the need to upgrade vehicles and PSAP infrastructure with a 4G interoperable functionality. A report from the study is expected by April 2020.

It is in the interest of all OEMs and M2M providers to understand the regulatory and commercial implications of a 2G/3G network switch-off on their obligation to provide passengers with eCall access in vehicles across the EU. In addition, the European Commission study and industry-led standardisation initiatives provide an opportunity to engage in a public policy debate aimed at facilitating a smooth pan-EU transition strategy to solve this technology dilemma.

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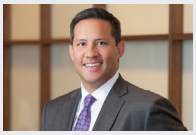
Contacts

Francesco Liberatore
Partner, London
T +44 20 7655 1505
E francesco.liberatore@squirepb.com

Matthew Kirk
International Affairs Advisor, London
T +44 20 7655 1389
E matthew.kirk@squirepb.com



Cipriano Beredo
Global Head of Industrial Products, Cleveland
T +1 216 479 8280
E cipriano.beredo@squirepb.com