Europe

GSMA Europe Response to the RSPG Draft Opinion for Public Consultation on

Spectrum Aspects of Intelligent Transport Systems

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About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

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Introduction

The GSMA thanks the RSPG for the opportunity to comment on its Draft Opinion on the Spectrum Aspects of Intelligent Transport Systems (ITS). This is clearly an important topic as the automotive and rail sectors are two of the key vertical sectors that will benefit from the arrival of 5G[1].

Mobile connectivity provides many opportunities to address a variety of multimodal connectivity requirements. Through the Connected Vehicle Forum the GSMA works closely with key automotive and transport industry stakeholders on this and many other topics and it is vital that suitable spectrum is available for these applications in order to address market demand.

In this response the GSMA provides comments on a number of areas relevant to the role that mobile networks can play in relation to ITS, highlighting the work currently underway in this area as well as making a number of recommendations that we believe that RSPG should address in order to realise the socio-economic benefits associated with ITS for roads in particular.

Relevant standardisation activity

As the RSPG will be aware, 3GPP unites seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC). This activity covers cellular telecommunications network technologies, including radio access, the core transport network, and service capabilities and thus provides complete system specifications. The specifications also provide hooks for non-radio access to the core network, and for interworking with Wi-Fi networks.

3GPP's standard for LTE V2V (in the form of Release 14) has already completed and the specifications have been available from September 2016.[2] Further standardisation activity in relation to Release 14, in the form of a full set of LTE V2X functionality, and advanced use cases, is expected to be finalised by Q2 2017.

RSPG may also wish to note that a new draft of the ETSI Harmonized Standard for ITS operation in 5.9GHz, namely ETSI 302 571[3], has recently been agreed in ETSI to put for National Voting, with the outcome expected in February 2017 leading to potential publication by the EU in June 2017. This standard applies to communications using radio transmitters and receivers for Intelligent Transport Systems (ITS), comprising vehicle-to-vehicle, vehicle-to-infrastructure and infrastructure-to-vehicle, and it is envisaged that this particular version (subject to final approval) will offer the flexibility for both LTE-V2X and IEEE 802.11p operation, as well as potentially any other ITS technologies.

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[1] See for example the 5GPP White Paper '5G Automotive Vision' at https://5g-ppp.eu/wp-content/uploads/2014/02/5G-PPP-White-Paper-on-Automotive-Vertical-Sectors.pdf In this White Paper, representatives from both the automotive and the telecom industry provide their vision on how 5G will enable the next generation of connected and automated driving and new mobility services.

[2] See for example www.3gpp.org/news-events/3gpp-news/1798-v2x_r1

[3] Intelligent Transport Systems (ITS); Radiocommunications equipment operating in the 5 855 MHz to 5 925 MHz frequency band; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU. See http://standards.globalspec.com/std/1634935/etsi-en-302-571

Ongoing LTE-V2X trials

Mobile operators and car manufacturers are already trialling ITS LTE V2X services in a number of European countries, including Germany and France, in the form of the recently established European Telecoms and Automotive Alliance. This industry-led project is focusing on use cases and test functionalities in three main areas: automated driving, road safety and traffic efficiency, and the digitalisation of transports and logistics. Functions that are being considered include high density platooning, cooperative collision avoidance, remote control parking, local-hazard warnings and traffic flow optimisation. High definition maps will be updated with a fast connection to the internet on phone or other mobile devices. The works, which are expected to start in 2017, will include two main phases. A first phase, to run until 2019, will feature tests on available communication technologies, such as LTE V2X. A second phase, to run until 2021, is expected to cover the full set of 5G use cases, bearing in mind that different functionalities have different network requirements.[4]

Given the abovementioned activity, we would suggest that the Draft Opinion could go further in reflecting the role that mobile networks will play in relation to ITS. Paragraph 5 of the Draft Opinion currently states that "mobile networks *may* provide opportunities for services to complement ITS, in particular using 5G features"[5] The GSMA suggests that paragraph 5 is amended to confirm that *"RSPG notes that mobile networks will provide opportunities for services to complement ITS, in particular using enhanced 4G technology and also 5G features".*

Spectrum availability for Cellular ITS applications for roads

It is vital that regulatory policy in respect of the 5.9GHz band is technologically neutral, allowing mobile operators to respond to market demand for ITS applications using C-V2X. The GSMA very much supports the RSPG's statement that the spectrum designation in 5875 – 5905MHz is technology neutral. 3GPP's work in this area is important because it already includes (in the form of Release 14) measures for C-V2X to coexist with IEEE 802.11p, and further 3GPP activity is envisaged in this area.

In this context, we note RSPG's recommendation that further work be undertaken in relation to future use of spectrum for ITS in 5875 – 5905 MHz and its adjacent bands, referencing ongoing CEPT compatibility studies in the process, and the need to take into account both 5G LTE-V (C-V2X) and IEEE 802.11p. An appropriate forum for this work could be the abovementioned European Automotive and Telecoms Alliance, of which the GSMA is a participating association (along with ACEA, CLEPA, ETNO and ECTA).

Such further work could consider the merits of partitioning 5.9GHz between C-V2X and IEEE 802.11p and/or methods of sharing 5.9GHz band in order to ensure an

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[4] See for example the Joint Press Note 'Automotive and Telecoms Sectors to Launch EU Project for Connected and Automated Driving' at http://www.gsma.com/newsroom/press-release/joint-press-note-automotive-telecoms-sectors-launch-eu-project/

[5] We would contrast the position in paragraph 4 of the Draft RSPG Opinion with the paragraph 6 of the draft RSPG opinion on IoT spectrum, which confirms (correctly) that "new IoT uses cases will be enabled by 5G".

approach that will facilitate deployment of both C-V2X and IEEE 802.11p applications in the 5.9GHz band. The GSMA believes it would be helpful if the RSPG noted such activity in its Opinion.

Implementing and coordinating activity

Finally, it is important that the European Commission (in consultation with the RSPG as appropriate) takes any necessary action to implement a technology neutral approach, as envisaged by its recent C-ITS Masterplan which highlights that the Commission will consider, where appropriate, making use of its mandate under the ITS Directive to adopt delegated act(s) by 2018… on ensuring a forward looking hybrid communication approach.[6] CEPT ECC Decision (08)01[7] should also be updated as required.

In relation to spectrum for next-generation of railway communications systems, future 5G networks can provide the required coverage and bandwidth to deliver a range of rail innovations, including dynamic scheduling, automated operations and the ability to monitor and control infrastructure remotely through sensor networks or CCTV systems. It is important that regulatory policy does not impede the use of 5G for railway applications, and we support the RSPG's view that the use of commercial networks and other bands could be viable options for the future of railway communications. It is also vital that the RSPG and the European Commission takes a coordinating role to ensure a pan-European approach.

[6] European Commission Communication 'A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility' of 30 November 2016

[7] CEPT/ECC Decision (08)01 on the harmonised use of the 5875-5925 MHz frequency band for Intelligent Transport Systems.