



Decision to make the Wireless  
Telegraphy (Vehicle Based  
Intelligent Transport  
Systems)(Exemption) Regulations  
2009

Statement

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## Section 1

# Summary

- 1.1 This statement confirms that, following consultation, the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009 (the “ITS Regulations”) were made by Ofcom on 20 January 2009, and are coming into force on 4 February 2009. A copy of the ITS Regulations can be obtained through the Office of Public Sector Information (OPSI).<sup>1</sup>
- 1.2 The ITS Regulations enact the vehicle based requirements of the European Commission Decision 2008/671/EC of 5 August 2008 on the harmonised use of radio spectrum in the 5875 - 5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS) (the “Decision”).<sup>2</sup> The implementation of the Decision is mandatory on all European Union (EU) Member States by 5 February 2009.
- 1.3 The ITS Regulations only exempt from licensing safety-related vehicle based applications. Safety-related ITS infrastructure and other non-vehicle installations will be subject to the licensing requirement of section 8(1) of the Wireless Telegraphy Act 2006 and we will issue licences on non-exclusive basis as required by Statutory Instrument (SI) 2009/11. The ITS Regulations aim to support the EU’s eSafety Initiative with its goal to reduce the number of road fatalities each year.
- 1.4 Before deciding to make the ITS Regulations, in accordance with the requirements of section 122(4) of the Wireless Telegraphy Act 2006 on 11 November 2008 we published a Statutory Notice<sup>3</sup> (the “Notice”) containing a draft of the ITS Regulations and invited comments from stakeholders.
- 1.5 We received ten responses to the Notice. A summary of the consultation responses that we received is set out in Section 3 of this document. A copy of all the responses we received can be viewed on our website.<sup>4</sup>
- 1.6 Having carefully considered the consultation responses we have made some amendments to the regulations, these are outlined in Section 3.
- 1.7 A Regulatory Impact Assessment (RIA) is available in Annex 1 of this document. The RIA sets out the risks, costs and benefits of our decision and the effects that these will have on the costs to business, us and citizens/consumers.
- 1.8 A list of respondents is available in Annex 2.

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<sup>1</sup> A link to the online version can be found at <http://www.opsi.gov.uk/stat.htm>

<sup>2</sup> <http://www.erodocdb.dk/docs/doc98/official/pdf/2008671EC.pdf>

<sup>3</sup> [http://www.ofcom.org.uk/consult/condocs/wtf\\_vehicle/main.pdf](http://www.ofcom.org.uk/consult/condocs/wtf_vehicle/main.pdf)

<sup>4</sup> [http://www.ofcom.org.uk/consult/condocs/wtf\\_vehicle/responses/](http://www.ofcom.org.uk/consult/condocs/wtf_vehicle/responses/)

## Section 2

# Introduction

### Our powers

- 2.1 Ofcom is responsible for authorising the civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the “Wireless Telegraphy Act”) or by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the Wireless Telegraphy Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. Under Section 8(4) of the Wireless Telegraphy Act we must make regulations to exempt equipment if its installation or use is unlikely to cause undue interference.
- 2.2 Exemption is realised by describing the details of equipment and the parameters under which it may be used in regulations that exempt users of such equipment from the need to hold a Wireless Telegraphy Act licence, provided they comply with the terms of those regulations.

### What are Intelligent Transport Systems

- 2.3 Intelligent Transport Systems (ITS) is an umbrella term, to describe a number of transport supporting services, ranging from driver aids intended to mitigate against accidents through to commercial services for drivers and passengers. ITS as a system includes equipment able to communicate between cars and between the car and any roadside infrastructure.
- 2.4 Safety-related ITS applications are intended to provide information to vehicles to avoid potentially dangerous traffic situations or to reduce the seriousness of an accident. This information, when received in advance, provides an early warning to the driver and becomes increasingly time-critical as the vehicle approaches the site of an incident or potential accident.

**Table 1: Examples of safety-related ITS applications**

<b>Application</b>	<b>Description</b>
Cooperative Collision Warning	Cooperative collision warning collects surrounding vehicle locations and dynamics and warns the driver when a collision is likely.
Work Zone Warning	Work zone safety warning refers to the detection of a vehicle in an active work zone area and the indication of a warning to its driver.
Approaching Emergency Vehicle Warning	This application provides the driver a warning to yield the right of way to an approaching emergency vehicle.
Traffic Signal Violation Warning	Traffic signal violation warning uses infrastructure-to-vehicle communication to warn the driver to stop at the legally prescribed location if the traffic signal indicates a stop and it is predicted that the driver will be in violation.
Emergency Vehicle Signal Pre-emption	This application allows an emergency vehicle to request right of way from traffic signals in its direction of travel.
In-Vehicle Signage	The in-vehicle signage application provides the driver with information that is typically conveyed by traffic signs.
Road Condition Warning	Road condition warning is used to provide warning messages to nearby vehicles when the road surface is icy, or when traction is otherwise reduced.
Low Bridge Warning	Low bridge warning is used to provide warning messages especially to commercial vehicles when they are approaching a bridge of low height.
Highway/Rail Collision Warning	Railroad collision avoidance aids in preventing collisions between vehicles and trains on intersecting paths.

Application	Description
Wrong Way Driver Warning	This application warns drivers that a vehicle is driving or about to drive against the flow of traffic.
Emergency Electronic Brake Lights	When a vehicle brakes hard, the Emergency Electronic Brake light application sends a message to other vehicles following behind.
Right Turn Assistant	The Right Turn Assistant application provides information to drivers about oncoming traffic to help them make a right turn at a signalised intersection without a phasing right turn arrow.
Curve Speed Warning	Curve speed warning aids the driver in negotiating curves at appropriate speeds.
Vehicle-Based Road Condition Warning	This in-vehicle application will detect marginal road conditions using on-board systems and sensors (e.g. stability control, ABS), and transmit a road condition warning, if required, to other vehicles via broadcast.
Low Parking Structure Warning	This application provides drivers with information concerning the clearance height of a parking structure.
Lane Change Warning	This application provides a warning to the driver if an intended lane change may cause a crash with a nearby vehicle.
Highway Merge Assistant	This application warns a vehicle on a highway on-ramp if another vehicle is in its merge path (and possibly in its blind spot).
Cooperative Glare Reduction	This application uses C2C-C to allow a vehicle to automatically switch from high-beams to low-beams when trailing another vehicle.
Intelligent Intersection Control	Alerts driver to other vehicles at intersections.

Source: Extract from ETSI TR 102 492-1

## Background

- 2.5 We consulted on the proposal to exempt from licensing vehicle based ITS in our document “Notice of proposal to make the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009” published on 11 November 2008 (the “Notice”).<sup>5</sup>
- 2.6 In accordance with our statutory obligations, a draft of the ITS Regulations was published in the Notice and subject to a one-month and a day consultation period. The consultation closed on 12 December 2008.
- 2.7 The ITS Regulations enacts the vehicle based requirements of the Commission Decision 2008/671/EC of 5 August 2008 on the harmonised use of radio spectrum in the 5875 - 5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS)<sup>6</sup> (the “Decision”). The Decision aims to support the European Union’s eSafety Initiative with its goal to reduce the number of road fatalities each year.
- 2.8 We considered it appropriate to licence exempt the vehicle based safety-related ITS immediately. Since the transmissions from vehicles are typically much lower than those from the infrastructure and do not require to be coordinated we did not consider it practical or necessary to license vehicle based safety-related ITS.
- 2.9 In order to enable the possibility of different ITS operators coexisting without causing a significant loss in the effectiveness of the networks, we believe that a coordinated approach for infrastructure will be necessary. Technical studies carried out by European Conference of Postal and Telecommunications Administrations (CEPT) that underpin the Decision are based on channel access technology where only one device is active on a channel at the same point in time in a given area and all units are operating in the same network. If there is more than one infrastructure network and those networks are not coordinated, there is a likelihood of harmful interference which may prevent the safety-related aims of the Decision from being fully realised.

<sup>5</sup> [http://www.ofcom.org.uk/consult/condocs/wtf\\_vehicle/main.pdf](http://www.ofcom.org.uk/consult/condocs/wtf_vehicle/main.pdf)

<sup>6</sup> <http://www.erodocdb.dk/docs/doc98/official/pdf/2008671EC.pdf>

We will ensure that we will authorise safety-related infrastructure as required by Statutory Instrument (SI) 2009/11.

- 2.10 Having considered the responses to the Notice, to enact the vehicle based requirements of the Decision, we have made a new SI, the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009. The ITS Regulations will come into force on 4 February 2009.

## Section 3

# Scope of Regulations

## Responses to the Notice

- 3.1 We received ten responses to the Notice.
- 3.2 Almost all of the respondents supported our proposal to licence exempt vehicle based safety-related ITS.
- 3.3 The main concern raised in the responses we received was our decision not to extend licence exemption to roadside infrastructure. Many commented on how there was no difference between vehicle and infrastructure equipment and both should be treated the same. They also pointed out that without the implementation of infrastructure equipment the business case for the roll-out of ITS would be severely reduced. It was argued that without licence free usage of fixed stations, procurement of ITS would be unlikely.
- 3.4 Although we can appreciate that there could be commercial benefits from applying licence exemption to both the vehicle and infrastructure equipment we are also aware of the potential problems this could cause. In some versions of ITS, vehicle based and roadside infrastructure operate in a similar way but in other systems this may not be the case. In order to allow for different versions of ITS infrastructure to be deployed there is a need, as identified in Section 7 of the CEPT Report 20,<sup>7</sup> to allow for infrastructure to be coordinated. Licence exemption of infrastructure would not facilitate any coordination mechanism, other than that by self-coordinating apparatus. A requirement mandating self-coordination does not exist in the Decision. This policy may be reviewed in the future based on new evidence.
- 3.5 A number of respondents also commented that non-vehicle based equipment such as apparatus deployed at an accident or road works would not be exempt. They argue that these devices could have significant safety benefits and should also be allowed.
- 3.6 We understand that there are a number of potential uses other than those envisaged by the Decision. The authorisation of these devices, providing that they meet the technical parameters and standards as set out in the Decision, is covered by SI 2009/11. Users will be able to apply for a licence in order to deploy non-vehicle based safety-related ITS equipment.
- 3.7 The limitation of a mandatory Transmit Power Control (TPC), of at least 30 dB, irrespective of the maximum power capable of being emitted by particular apparatus, was raised by stakeholders. Many commented on the fact that they believed that the Decision had misunderstood the technical requirements set out in the Harmonised Standard adopted by the European Telecommunications Standards Institute (ETSI).
- 3.8 Member States are required to implement the Decision based on the technical requirements as set out in the Annex by 5 February 2009. However, after reviewing

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<sup>7</sup> CEPT Report 20. Report from CEPT to EC in response to the Mandate on “the harmonised radio spectrum use for safety critical applications of Intelligent Transport Systems (ITS) in the European Union” <http://www.erodocdb.dk/Docs/doc98/Official/Pdf/CEPTRep020.pdf>



the comments we have received we have amended the regulations. We have removed references to the TPC value of 30 dB in Regulation 4(e). We consider that this is in accordance with the Decision, since the 30 dB TPC requirement is associated with the relevant harmonised standards which clearly require TPC or equivalent techniques to mitigate interference to be employed but do not necessarily require that level of TPC irrespective of how low the maximum power of the apparatus is.

- 3.9 Three responses objected to the exemption to the equipment only if it operated in the 5875 to 5905 MHz band.
- 3.10 The Decision specifies the frequency band that we must make available for safety-related ITS. We note that work is ongoing in Europe looking at deploying ITS at 60 GHz and additional use in the 5 GHz bands. We continue to monitor these developments and will make necessary legislation when required to allow the operation of these services. In light of these responses we have amended the text of Regulation 4(c). We have removed the text “only operate in the frequency band 5 875 MHz to 5 905 MHz”, in place we have amended Regulation 3 to make clear that the exemption applies in relation to the frequency band 5875 to 5905 MHz. Equipment may also use alternative frequencies, but would need separate authorisation in relation to those other frequencies either by being exempt or licensed.
- 3.11 Two objections were raised to the exemption only applying to safety-related equipment, stating that additional benefits from allowing traffic management would not be achieved.
- 3.12 Although we can see that there are a number of different uses that ITS can be applied to, the object of our consultation was to implement the Decision. Article 1 of the Decision is specific that the band be used for safety-related applications of ITS on a non-exclusive basis. Recital 12 of the Decision gives an expectation that the scope of the ITS Decision may be reviewed, based on how this technology evolves. Any future review may well extend to cover other ITS uses once the appropriate technical work has been undertaken.
- 3.13 One respondent requested that devices that are limited to 20 dBm but operate without TPC be also made licence exempt.
- 3.14 The proposal to allow 20 dBm devices without TPC to be authorised we believe would not permit fair access to other TPC enabled apparatus, whose own minimum power must be below 3 dBm.
- 3.15 Some respondents wished for us to continue to review the regulations in light of new developments or potential issues that the industry may face.
- 3.16 We will ensure that our regulations are reviewed in line with developments in ITS technologies and the work carried out in Europe. As the industry’s, and our, understanding of deployment and operational issues develops, we may need to amend our regulations in the future. We would consult stakeholders prior to making any regulations.

## **Final scope of the Regulations**

### **The Legislative Framework**

3.17 We can exempt the establishment, installation and use of wireless telegraphy equipment by making regulations under section 8(3) of the Wireless Telegraphy Act.

### **Extent of application**

3.18 The ITS Regulations will apply in the United Kingdom, Jersey and Isle of Man.

### **The Regulations**

3.19 The ITS Regulations exempt in the frequency band 5875 to 5905 MHz the installation and use of vehicle based safety-related ITS pursuant to section 8(4) of the Wireless Telegraphy Act. The ITS Regulations mirror the technical parameters and standards set in the Decision. They set the terms, provisions and limitations to be complied with for the safety-related ITS. The ITS Regulations provide that the exemption shall apply if:

- The wireless telegraphy apparatus is or is part of a safety-related intelligent transport system.
- The wireless telegraphy apparatus is within or fixed to a vehicle.
- The wireless telegraphy apparatus transmission power has at its highest point:
  - a maximum mean e.i.r.p. density no greater than 23 dBm per MHz;  
and
  - a maximum mean e.i.r.p. no greater than 33 dBm.
- The wireless telegraphy apparatus use techniques to mitigate interference providing at least equivalent performance to ETSI standard EN 302 571.
- The wireless telegraphy apparatus does not cause or contribute to undue interference to any wireless telegraphy.

## Annex 1

# Impact Assessment

## Introduction

- A1.1 In accordance with government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment (RIA) must be undertaken. The analysis presented in this document represents an impact assessment, as defined in section 7 of the Communications Act 2003 (the “Communications Act”) for making the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009.
- A1.2 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policymaking. This is reflected in section 7 of the Communications Act, which means that generally we will carry out impact assessments where proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in our activities. However, as a matter of policy we are committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. In accordance with section 7 of the Communications Act, in producing this RIA, we have had regard to such general guidance as it considers appropriate including related to Cabinet Office guidance. For further information about our approach to impact assessments, see the guidelines, “Better policy-making: Ofcom’s approach to impact assessment”, which are on our website: [http://www.ofcom.org.uk/consult/policy\\_making/guidelines.pdf](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf)

## Background

- A1.3 In the UK, we are responsible for the authorisation of civil use of the radio spectrum and achieve this by granting Wireless Telegraphy licences under the Wireless Telegraphy Act 2006 (the “Wireless Telegraphy Act”) and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the Wireless Telegraphy Act, it is an offence to establish, install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted.
- A1.4 A European Commission Decision of 5 August 2008 on the harmonised use of radio spectrum in the 5875 - 5905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS) 2008/671/EC<sup>8</sup> (the “Decision”) was made to allow the use of the radio spectrum for safety related Intelligent Transport Systems (ITS) equipment in a harmonised manner in the Community.
- A1.5 The Decision was addressed to all Member States and requires them to, not later than six months after entry into force of the Decision, designate the frequency band 5875 - 5905 MHz for ITS and, as soon as reasonably practicable following such designation, make that frequency band available on a non-exclusive basis. The Decision expected that Member States would make the spectrum available for vehicle to vehicle ITS communications within the six-month period during which they were to designate the frequency band 5875 - 5905 MHz according to this Decision. The Decision further notes that:

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<sup>8</sup> <http://www.erodocdb.dk/docs/doc98/official/pdf/2008671EC.pdf>

- it may prove difficult for some Member States to finalise an appropriate licensing framework or a coordination mechanism for roadside infrastructure installation of different ITS operators within this timeframe.
- any delays in making the spectrum available beyond this period may impact negatively on the wide take-up of safety-related ITS applications in the European Union and should therefore be limited and duly justified.

A1.6 SI 2009/11 requires Ofcom to exercise our functions in accordance with the Decision.

A1.7 The band 5850 - 5925 MHz has been allocated for use by Programme Making & Special Events (PMSE), who are allowed to use wireless cameras in these frequencies. However, there is only limited PMSE use in this band. The implications of the ITS Decision along with the proposal for PMSE use of the band are intended to be addressed within the wider discussion on the award of the spectrum 5850 - 5925 MHz. We have also consulted separately on this issue in the detailed design of the digital dividend review (DDR) band manager award.<sup>9</sup>

## Proposal

A1.8 This RIA relates to the making of the regulation needed to comply with the Decision. For the vehicle based elements of safety-related ITS, we believe that the Decision will be implemented by the allocation of the band 5875 - 5905 MHz to safety-related ITS and the exemption of the apparatus.

## The citizen and/or consumer interest

A1.9 We took account of the impact of its decisions upon both citizen and consumer interests in the markets it regulates. As a Member State, the UK was bound by the terms of the Decision and the requirement to implement them by 5 February 2009. However, in addition:

- the measures will allow the use of vehicle based safety-related ITS equipment on a licence exempt basis which reduces the regulatory and administrative burden on motorists and the automotive industry; and
- the introduction of safety-related ITS systems are intended to improve road safety. The European Commission stated<sup>10</sup> that in 2006 42,000 people were killed on the roads of Europe. The cost of accidents to society is clearly high. The Impact Assessment included as Annex 2 of the European Conference of Postal and Telecommunications Administrations (CEPT) Report 20,<sup>11</sup> concluded in paragraph 4.3 that even a marginal reduction in road casualties would provide a greater benefit than alternative uses for the radio spectrum 5875 - 5905 MHz. The report suggests that just a 1% reduction in casualties would be of very significant value to European society.

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<sup>9</sup> <http://www.ofcom.org.uk/consult/condocs/bandmgr/> Paragraphs 5.37 and 5.38

<sup>10</sup> Press notice

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1240&format=HTML&aged=0&language=EN&guiLanguage=en>

<sup>11</sup> CEPT Report 20. Report from CEPT to EC in response to the Mandate on "the harmonised radio spectrum use for safety critical applications of Intelligent Transport Systems (ITS) in the European Union" <http://www.erodocdb.dk/Docs/doc98/Official/Pdf/CEPTRep020.pdf>

## **Ofcom's policy objective**

- A1.10 As a Member State, the UK was bound by the terms of the Decision and the requirement to implement them by 5 February 2009.
- A1.11 The national regulatory authority with responsibility for the management of the radio spectrum in the UK is Ofcom. Our power to create exemption regulations may be exercised where appropriate so as to give effect to the Decision. SI 2009/11 requires Ofcom to exercise its powers, including its licensing powers, in accordance with the Decision.

## **Options considered**

- A1.12 The options open to us in relation to the implementation of the Decision were as follows:
- to make regulations that are compliant with the Decision; or
  - to do nothing.

## **Analysis of the different options**

### **Make new regulations**

- A1.13 The most efficient route to mandatory compliance was to make regulations that enact the vehicle based elements of the Decision as closely as possible.
- A1.14 As set out earlier, there could be significant benefits for UK consumers and citizens from the development of ITS systems in the 5875 - 5905 MHz band. However, it should be noted that the designation of the spectrum is not sufficient to fully realise these benefits. Some of the safety benefits will be achieved by vehicle to vehicle communication, but significant infrastructure investment will also be required to achieve all of the safety benefits ITS has the potential to deliver. Given the uncertainty over whether this investment will be forthcoming there is a risk that this spectrum will not be fully exploited by safety-related ITS in the UK. However, if this is the case, it would still be possible for alternative uses to access this spectrum.
- A1.15 There is currently limited use of this band by other uses (such as PMSE). The future needs of PMSE users across all of the spectrum that it currently has access to is being considered separately as part of the DDR band manager award. We intend to consider the implications of safety-related ITS use of these frequencies in the award, which would take into account the needs of the different potential users of this band and our duty to promote optimal use of the radio spectrum. However, we note here that we believe that it might be possible for some PMSE use to coexist with the proposed ITS systems.

### **Do nothing**

- A1.16 Without the benefit of an exemption from the Wireless Telegraphy Act users of safety-related ITS equipment would need a licence which would result in a greater regulatory and administrative burden on individuals.
- A1.17 The do nothing option could result in consumers and citizens not benefiting from the development of safety-related ITS systems in the UK.

## **The preferred option**

- A1.18 The preferred option was to make regulations to allow the use of vehicle based safety related ITS equipment on a licence-exempt basis, in order to comply with the Decision and SI 2009/11. The benefits of this option were compliance with European Community law, a reduction in the regulatory and administrative burden for stakeholders wishing to use compliant safety-related ITS devices and more generally benefits to consumers from the potential introduction of a technology designed to improve road safety.

## Annex 2

# List of respondents

COOPERS

Dr. Richard Roy

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Institution of Engineering and Technology

Knut Evensen

Name Withheld

TRL Ltd

Volvo

Transport for London