Notice of Ofcom's proposals for changes to the licence exemption of Wireless Telegraphy Devices

Consultation

Publication date: 20 October 2011
Closing date for responses 21 November 2011

Contents

Section 1

Executive Summary

1.1 This document outlines our decisions following the 7 April 2011 consultation "Licence Exemption of Wireless Telegraphy Devices - Candidates for 2011" (the "2011 Consultation")[1] and consults on draft regulations to implement our decisions.

1.2 Under section 8(1) of the Wireless Telegraphy Act 2006 (the "WT Act"), it is an offence to establish, install or use equipment for wireless telegraphy without holding a licence granted by us, unless the use of such equipment is exempted. The 2011 Consultation outlined a number of proposals relating to the exemption of wireless telegraphy devices, including:

- Use of personal locator beacons (PLBs) on land;
- Wireless access user equipment in the 3400 to 3800 MHz band;
- Safety related intelligent transport systems (ITS) infrastructure;
- 2GHz mobile satellite service (MSS) terminals;
- User equipment connecting to the 2012 London Games Tetra (Apollo) Network; and
- Generic Short Range Devices (SRDs) in the 138 MHz band.

1.3 The 2011 Consultation also provided information on relevant European Union (EU) legislation that had been adopted or was in the process of being adopted, which requires subsequent changes to our exemption regulations. These include:

- fourth Generation (4G) mobile user equipment (LTE and WiMAX) in the 900 / 1800 MHz band[2] (before 4G services will be available a variation of the mobile operators network licence would also be required);
- radio spectrum for use by short-range devices[3]; and
- Automotive Short Range Radar at 24 GHz[4].

1.4 We received two confidential and eighteen non-confidential responses to the 2011Consultation. The non-confidential respondents are listed in Annex 10 of this document and copies of the responses are available on our website[5]. Of these responses the majority supported our proposals. We have however, given consideration to objections and comments which were raised and these are addressed in Section 2 of this document.

1.5 In accordance with the requirements of section 122(4) and (5) of the Wireless Telegraphy Act 2006 (the "WT Act") this document gives notice of our intention to

[1] http://stakeholders.ofcom.org.uk/consultations/licence-exemption-candidates-11/
[2] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:106:0009:0010:EN:PDF
[3] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:166:0033:0041:EN:PDF
[4] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:198:0071:0072:EN:PDF
[5] http://stakeholders.ofcom.org.uk/consultations/licence-exemption-candidates-11/?showResponses=true

make the Wireless Telegraphy (Exemption) (Amendment) Regulations 2011 (the "Proposed Regulations"), the Wireless Telegraphy (Exemption and Amendment) (No.2) Regulations 2011 (the "Proposed SRD Regulations") and the Wireless Telegraphy (Intelligent Transport Systems) (Exemption) Regulations 2011 (the "Proposed ITS Regulations").

1.6 A Regulatory Impact Assessment is included in Annex 5 of this document. Copies of the Proposed Regulations are included in this document at Annex 6, the Proposed SRD Regulations in Annex 7 and the Proposed ITS Regulations in Annex 8. Further copies may be obtained from www.ofcom.org.uk or from Ofcom at Riverside House, 2a Southwark Bridge Road, London SE1 9HA.

1.7 Comments on the Proposed Regulations, Proposed SRD Regulations and Proposed ITS Regulations are invited by **5pm** on **21 November 2011**. Subject to consideration of responses and the adoption of the relevant European Union legislation we intend to bring the new regulations into force by the end of 2011.

Section 2

Background

Authorising spectrum use

2.1 We are responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 ("the WT Act") and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the WT 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.

2.2 Under section 8(4) of the WT Act, we have to make regulations to exempt equipment if its installation or use meets the following criteria:

- is not likely to involve undue interference with wireless telegraphy;
- is not likely adversely to affect technical quality of service;
- is not likely to lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- does not endanger safety of life;
- does not prejudice the promotion of social, regional or territorial cohesion; and
- does not prejudice the promotion of cultural and linguistic diversity and media pluralism.

2011 Consultation

2.3 In the 2011 Consultation, we proposed to allow new types of equipment to operate on a licence exempt basis and to amend arrangements for equipment which is already subject to licence exemption, including:

- Land-based use of personal locator beacons (PLBs);
- Wireless access user equipment in the 3400 to 3800 MHz band;
- Safety related intelligent transport systems (ITS) infrastructure;
- 2GHz mobile satellite service (MSS) terminals;
- Terminals connecting to the 2012 London Games Tetra Network (Apollo); and
- Generic Short Range Devices (SRDs) in the 138 MHz band.

2.4 The 2011 Consultation also provided information on relevant European Union (EU) legislation that had been adopted or was in the process of being adopted, where subsequent changes are required to our exemption regulations. These address:

- fourth Generation mobile user equipment (LTE and WiMAX) in the 900 / 1800 MHz band;

- radio spectrum for use by short-range devices; and
- Automotive Short Range Radar at 24 GHz.

Responses to the 2011 Consultation

2.5 We received eighteen non-confidential and two confidential responses to the consultation. The responses and our comments are summarised below under the headings of the questions posed in the consultation. Respondents' comments on other issues are addressed as they arise later in this section.

Personal Locator Beacons

Question 1) Do you agree with our proposal to exempt the land use of 406 MHz PLBs from the need to hold a Wireless Telegraphy Act licence?

2.6 The majority of respondents were in favour of our proposal to exempt the use of Personal Locator Beacons ("PLBs") on land from the need to hold a WT Act licence. Some respondents did not agree with our proposals but did not provide any information as to why.

2.7 NATS saw merit in the proposal to allow PLBs to be used on land, and had no objection to the licence exemption proposal, subject to the requirement for registration of each beacon under an appropriate regime They however did raise a concern about the ability of NERL to meet the licence conditions of its 121.5 MHz UK aeronautical Alert and Fixing (A&F) safety of life service. They advised that if the system picked up a proliferation of alerts from ground based beacons this might impact the A&F service.

2.8 In the proposal we recommended that PLBs should be registered. We intend to keep this wording in the Interface Requirement IR 2084. On the issue of the secondary homing signal at 121.5 MHz, we are aware that some PLBs will not have a Global Positioning System (GPS) installed in the PLB and that it may be necessary to use the secondary signal. As NATS pointed out they are not aware of any ground based beacons being picked up on this network however, we will monitor the situation and would revisit the 121.5 MHz exemption if it was having a significant impact on the aeronautical A&F safety of life service.

2.9 NATS also made some editorial comments on the technical conditions which we have taken into account and have modified the draft version of the Interface Requirement IR 2084.

2.10 Therefore, for the reasons set out in the 2011 Consultation, the attached impact assessment and above, we propose to proceed with regulations to exempt PLBs for use on land from the need for a licence, subject to the technical requirements of IR 2084.

2.11 The relevant draft Interface Requirement *"IR 2084 – UK Interface Requirement 2084 Cospas-Sarsat locator beacons for use on land"* is available on Ofcom's website[6]. This IR will be finalised when the proposed Regulations come into force.

[6] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

Safety related intelligent transport systems

Question 2) Do you agree with our proposal to exempt the use of equipment for safety-related ITS infrastructure from the need to hold a Wireless Telegraphy Act licence?

2.12 Several respondents agreed with our proposal to exempt the use of safety-related ITS infrastructure from the need to hold a WT Act licence. This proposal brings the authorisation of safety-related ITS infrastructure equipment in line with the equivalent technology on vehicles.

2.13 The Highways Agency supported the proposal but pointed out that while two ETSI standards were available for the equipment these had not yet been widely tested.

2.14 We appreciate the comments received concerning testing of the relevant standards however, in this proposal we must comply with EC Decision 2008/671, which the UK is obliged to implement. The technical criteria for ITS is set out in that Decision including reference to the standards. The applicable harmonised European standards for ITS have been developed by ETSI taking into account studies undertaken by the Electronic Communications Committee (ECC)[7]. We are aware that trials of this equipment are currently underway, for instance the innovITS "advance" project"[8], which is funded by various transport bodies (DFT, Highways Agency, etc), includes testing of ITS systems.

2.15 Therefore, for the reasons set out in the 2011 Consultation, the attached impact assessment and above, we propose to proceed with the proposals as outlined in the 2011 Consultation. We will therefore be revoking and replacing the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009 with the Proposed ITS Regulations.

2.16 For information only, we have published on our website a draft Interface Requirement *UK "IR 2086 – UK Interface Requirement 2086 Safety Related Applications of Intelligent Transport Systems"*[9]. The IR mirrors the technical specifications as set out in the Proposed ITS Regulations.

Terminals operating in the 3400-3800 MHz band

Question 3) Do you agree with our proposal to exempt the use of terminals operating in the 3400 to 3800 MHz band from the need to hold a Wireless Telegraphy Act licence?

2.17 The majority of respondents agreed with our proposal to exempt the use of terminals operating in the 3400 to 3800 MHz band from the need to hold a WT Act licence.

2.18 Intelsat considered that if some other method were to be proposed to coordinate the 3400 to 3800 MHz base station (which is separately licensed), for example using frequencies outside the subject band for the transmissions from base station to user terminals, then the base station could be much closer to the earth station and the user terminal transmissions would pose an in-band interference threat to the earth station. They argued that this would likely cause interference to their systems. For

[7] The relevant study is published at http://www.erodocdb.dk/docs/doc98/Official/Pdf/ECCRep101.pdf
[8] http://www.innovits.com/advance/
[9] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

this reason they did not agree with our proposal that wireless access terminals should operate on a licence-exempt basis within the frequency band 3600-3800 MHz.

2.19 We do not anticipate a situation where the coordination of the base station (which is separately licensed) would be carried out differently from the method currently used. If we were to propose such a change to our coordination process then the impact on adjacent users would be taken into consideration before making any such decision. As a result of this, and for the reasons set out in the 2011 Consultation, the attached impact assessment and above, we propose to proceed with regulations to make these devices exempt from the need for a WT Act licence, as set out in the 2011 Consultation.

2.20 The relevant draft Interface Requirement *"UK Interface Requirement 2015 Public Fixed Wireless Access Radio Systems Operating within the 3 to 11 GHz Frequency Bands Administered by Ofcom"* is available on Ofcom's website[10]. This IR will be finalised when the Proposed Regulations come into force.

2 GHz MSS user terminals

Question 4) Do you agree with our proposals to exempt 2 GHz MSS user terminals from licensing?

2.21 This part of the 2011Consultation related to the proposal for interim authorisation of 2GHz user terminals for use with mobile satellite networks. The technical work to support MSS / CGC terminal deployment is ongoing in CEPT and will not be ready until 2012. But because the EU decision already provides for the deployment of services by the selected operators, our consultation proposed set of interim e.i.r.p. limits that could allow the deployment of 2 GHz MSS user terminals in advance of the European harmonised limit.

2.22 We considered it appropriate to propose an "interim" basis for exemption, which would exist only until the CEPT has completed its work and adopted a harmonised European-wide approach. The interim exemption conditions we proposed would have allowed operation of 2GHz user terminals with limitations in e.i.r.p. We received three responses to this question from mobile and satellite operators.

2.23 Although the satellite operators supported the idea of an interim arrangement none of the three respondents agreed with the detail of our proposals for the reasons outlined in paragraphs 2.27 to 2.56. Having reviewed the issues raised in these representations, for the reasons set out below, we no longer consider that it would be appropriate to proceed with the proposal as outlined in the 2011 Consultation. We will therefore wait for completion of the CEPT report on 2GHz User Terminals, which we are expecting to be completed in 2012, before we consult again on this issue.

2.24 To summarise, Everything Everywhere noted and supported the current CEPT work that will develop a basis for the EU to harmonise the authorisations for the new 2GHz MSS User Terminals and protect adjacent services, but would strongly prefer Ofcom to wait for the results of the international studies. They were concerned that if we were to authorise on an interim basis the licence exempt use then it would be extremely hard for Ofcom to later change the technical conditions for these User Terminals. They indicated that if we did go ahead with an interim solution, protection

[10] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

of the adjacent services would be vital. Their stated preference is to wait for the completion of the international studies.

2.25 Both Inmarsat and Solaris sought as few restrictions on satellite and terrestrial User Terminals as possible. They wished to have access for the full, 2 x 30MHz without explicit constraints. They both noted that the CEPT report is expected to be completed in 2012. Solaris indicated that that it will be in a position to operate user terminals in late 2012/ early 2013

2.26 The detailed points raised to our proposed interim e.i.r.p. level covered the following areas:

- Adjacent band 3G mobile Base Station Receiver Blocking Performance;
- 2GHz User Terminal - In-Band Power;
- 2GHz User Terminal Out of Band Emission - Band Edge 2010MHz; and
- 2GHz User Terminal Out of Band Emission - Other Comments.

Adjacent Band 3G mobile Base Station Receiver Blocking Performance

2.27 Everything Everywhere identified that the existing characteristics of base stations operating below 1980 MHz have the potential to be interfered with by blocking caused by high power 2GHz User Terminals operating above 1980 MHz. Desensitisation may occur if these User Terminals operate within a few hundred metres of the base station (BS). They noted that in addition, the blocking performance of the BS extends up to 2 GHz. Therefore, they believe even an interim 5 MHz guard band may not be enough in the long term.

2.28 Inmarsat questioned the adjacent band base station blocking performance that should limit the operation of the new Mobile Satellite Services (MSS). They considered that the adjacent band user has a greater responsibility for the susceptibility of their systems to interference. The use of additional filtering and improved receiver design could help mitigate any problem that arises. They also highlighted that a guard band already exists between the systems. Therefore, they consider that Ofcom should not apply any constraints on User Terminals due to the performance of terrestrial network receivers.

2.29 Solaris questioned why there is a reduced power limit at the edge of the bands if User Terminal out of band limits respect the figures given in Table 1 of the 2011 Consultation. They believe the out of band limits are sufficient to protect services in adjacent bands.

2.30 We believe that both mobile and mobile satellite networks should be able to provide services to consumers. Ofcom supports the comment made by CEPT and recognised in its study work that compatibility with adjacent services is an important issue. CEPT ECC/DECISION (06)09 states *"....mobile satellite services .... shall ensure compatibility with terrestrial services operating in the adjacent bands below 1980 and between 2010 and 2170 MHz".*

2.31 Any technical conditions applied should not be so restrictive to the extent that one service cannot operate. Currently, mobile operators have proposed the use of a restrictive condition to protect their services, while satellite operators believe Ofcom should place no restrictions on User Terminal power. The Ofcom interim exemption

proposal supported both type of operators, while waiting for the completion of the final CEPT studies of compatibility between the two services, where better definition of any conditions would be available.

2GHz User Terminal - In-Band Power

2.32 Everything Everywhere agreed that a User Terminal in the Complementary Ground Component (CGC) mode should be subject to the same terminal power conditions and limitations of similar terrestrial mobile terminals that operate below 1980 and above 2010 MHz.

2.33 Inmarsat noted that CEPT report 39 does not state any in-band power limits for terrestrial mobile terminals and they suggest the same report implies the use of any in-band value in the range 21-33dBm, i.e. that a maximum of 33dBm/5MHz is acceptable. Therefore, Ofcom should support at least this value in the band 1980-2010MHz.

2.34 Solaris believe the values in the 2011 Consultation are too conservative and would place undue constraints on the operation of User Terminals operating in a satellite mode in the 2GHz band. In addition, there is no reason to consider the 1980 and 2010MHz band in the same way, as the bands adjacent to those band edges will be used differently. They indicate that the band 2010-2025 MHz is still under review in the UK and that User Terminal powers in that band are expected to be 31dBm/5MHz. They disagreed with the Ofcom statement that in practise the User Terminals (immediately above 2010 MHz) would be more likely to operate nearer to 24dBm/5MHz than to use 31dBm/5MHz, because of expected reduced base station power in the frequencies just above 2010 MHz, due to strict out of band emission filtering requirements into the band below 2010 MHz.

2.35 Solaris also advised that the proposal to limit User Terminal power to 24dBm in the lower 5 MHz and the upper 5 MHz of the band 1980-2010 MHz would only allow use in the terrestrial CGC mode of operation and is a significant restriction on bandwidth usage, making it impossible for satellite use. However, they did imply that if the 24dBm/5MHz value, was replaced by a 31dBm/5MHz value, then satellite operation was possible. However, the response also proposed the use of 40dBm throughout the band 1980.1-2009.9 MHz.

2.36 Inmarsat proposed an interim limitation (39dBm) for the maximum eirp of User Terminals operating to the wideband standard, with no implied or explicit restrictions on their operation across the band 1980-2010MHz. In the long term, the expected maximum eirp for wideband User Terminals is 48dBm.

2.37 For narrowband user terminals, Inmarsat submitted that the CEPT studies consider the use of 45dBm and this is a typical value for terminals operating to satellites. At this level, they comment that the interim Ofcom limitations would not allow any narrowband User Terminal operation to a satellite. However, unlike the wideband case, and prior to conclusion of the CEPT studies, Inmarsat did not mention an interim eirp value to allow operation of narrowband user terminals. Instead based on IR2016 their response was for Ofcom to authorise 40dBm in the band 1980-1985 MHz and 2005-2010 MHz and for Ofcom to authorise 50dBm in the band 1985-2005 MHz. This would allow narrowband 40dBm or less across all the band and greater than 40dBm for 2/3rd of each operators radio spectrum, expecting that in future, Ofcom would remove the restrictions on user terminal power in 1980-1985 and 2005 and 2010 MHz.

2.38 To support the higher power argument Inmarsat identified that within IR2016, the UK has exempted for many years mobile satellite terminals in the band 1997.5-2010 MHz. The value stated is for 39.8dBm/25kHz. The value originally defined for a user terminal operating to a non-geostationary satellite system, based on a 25 kHz channel plan. They argued that there is no limitation stated in IR 2016 for that satellite terminal's bandwidth and therefore the aggregate power of a having a wider channel bandwidth could be higher and reach and exceed 40dBm.

2.39 We support the general use of 24dBm for the terrestrial operation of 2GHz User Terminals operating to CGC base station networks, operating in a similar manner to the adjacent mobile networks below 1980 MHz. We would not in general plan an update to the exemption regulations or IR2016 for this terrestrial use of 2GHz User Terminals until the completion of the 2GHz satellite User Terminal conditions. However, we believe that IR2016, could be updated in regard to the terrestrial use of 24dBm CGC User Terminals, as it is the higher power satellite User Terminal eirp that is the main subject of CEPT studies.

2.40 Our support of a power limit of 24dBm for terrestrial operations of 2GHz User Terminal is based on comments made by one satellite operator who agreed that this would allow the use of a User Terminal as part of a CGC network. In addition, UK IR2019 for "Third Generation Mobile" states that the maximum power for mobile terminals is 24dBm at frequencies below 1980 MHz.

2.41 Our interpretation of the response from Everything Everywhere is that at the band edge of 2010MHz, there was no objection raised for a 2GHz User Terminal to operate in a terrestrial mode at 31dBm/5MHz. However, authorising use of 31dBm/5MHz creates a different authorisation value between the two satellite operators adjacent to 1980 and 2010MHz i.e. 24dBm/5MHz in one and 31dBm/5MHz in the other. CEPT report 39 uses a value of 23dBm in-band value for its terrestrial mobile studies, and CEPT used this value for calculating the out-of-band emissions. We would prefer one authorisation value across the band 1980-2010 MHz.

2.42 The satellite operators in their responses did not support the view that Ofcom needs to consider the effect on adjacent services of User Terminal in band powers, as opposed to the response made by the adjacent mobile operator who did see the needs for adjacent band consideration. However, we support the need to fully consider the effect of in-band powers.

2.43 One respondent also highlighted that the current IR2016 for the band 1997.5-2010MHz, implied the possibility of using 2GHz User Terminal with higher power, because of the possibility to aggregate power density. Ofcom notes that interpretation and the possible need to clarify IR2016.1 to be more appropriate to indicate 39.8.dBm power and 25 kHz channelling in separate line entries. However, we also note that these types of satellite User Terminal have not operated and were for use with a network of Non-Geostationary satellites. They were also the subject of ERC Report 65, a reference report, which will be affected by conclusions of the new CEPT work item on 2GHz User Terminals. Therefore, amendment of this part of IR2016, will be updated taking account of the CEPT conclusions.

2GHz User Terminal Out of Band Emission - Band Edge 2010MHz

2.44 Everything Everywhere stated that within CEPT group ECC PT1 there has been no interest stated in the use of Frequency Division Duplex (FDD) in the band 2010-2025MHz, and that Time Division Duplex (TDD) will be the only system deployed.

Therefore, the lower out of band emission limit (5 to 10 MHz offset) of -27dBm should be used rather than the -6dBm (CEPT Report 39 section 4.6.2 Tables 11 and 12).

2.45 Inmarsat compared resultant User Terminal out-of-band emissions against CEPT Report 39, in this instance, they stated that User Terminals built to the wideband standard can meet all the Report 39 limits except for the limit P_{bl} (-27dBm @2010 MHz) for terrestrial use more than 10 MHz from the band edge. They also provided a comment in regard to the narrowband User Terminals and that they cannot meet the -27dBm/5MHz limit (>10MHz TDD CHECK TABLES 11 and 12) of CEPT Report 39.

2.46 Solaris suggested, without additional supporting comment, that at 2010 MHz band edge, the value -6dBm, should be used across 2-5 MHz and 5-10 MHz.

2.47 At the band edge, 2010 MHz we considered the values given in CEPT 39 Tables 11 and Table 12, which suggest that either -6dBm or -27dBm are applicable out of band requirements. The value in CEPT Report 39 depends on whether the offending transmitter uses FDD or TDD technology. For 2GHz, the User Terminals must operate in the same direction as the authorisations given to the 2GHz satellites operating across 1980-2010 MHz, where this is an uplink band and only FDD type transmissions are possible. Therefore, we believe Table 11 in Section 4.6.2 of CEPT Report 39 is more applicable and the value of -6dB/5MHz should be considered rather than -27dBm/5MHz, and therefore consistent with the band edge at 1980 MHz for these terminals.

2GHz User Terminal Out of Band Emission - General

2.48 Inmarsat stated that User Terminals (39dBm and an assumed antenna gain of 0dB) built to the wideband standard can meet the Report 39 limits (except for the limit P_{bl} -27dBm @2010 MHz). They proposed an interim limitation of 39dBm for a User Terminal operating to the wideband standard, prior to the CEPT consideration of 2GHZ User Terminals using 15dB antenna gain and 33dBm transmitter inputs, 48dBm eirp).

2.49 They also commented that narrowband User Terminals, (like wideband User Terminals) cannot meet the CEPT Report 39 values in the first adjacent 5 MHz channel, irrespective of guard bands. They instead proposed for the narrowband User Terminals a relaxation to the CEPT Report 39 values, in line with the ETSI standards, and the use of a 100 kHz MSS guard band, (the User Terminals operating with a 15dB antenna gain, 45dBm eirp, and 200kHz channel). Terminals that operate with a lower antenna gain and therefore a reduced eirp would not need a guard band.

2.50 In addition they also noted that CEPT Decision ECC/DEC(06)01 provides a 300kHz guard band below 1980 MHz and 500kHz above 2010 MHz. This Decision is currently under revision, and they note that these guard bands were not taken into account in CEPT Report 39. These guard bands will provide an additional level of protection to terrestrial mobile systems. They identified that User Terminals operating to the ETSI standards are not able to fully meet the Report 39 limits, irrespective of any guard bands. They note that terrestrial mobile user terminals <1980 MHz are also unable to meet this limit.

2.51 Both Inmarsat and Solaris identified that ETSI published standards for the MSS User Terminals in 2010, underwent public consultation and they now have a citation published in the European Union Official Journal[11]. They do not expect there to be

[11] EU Official Journal Entries for EN 302 574

any update required to these standards because of the CEPT studies, as compliance with the ETSI standards should adequately protect adjacent band systems from out of band emissions.

2.52 We note that a wideband 39dBm User Terminal (0dB antenna), has different out of band emissions to a 48dBm User Terminal (including 15db antenna). The satellite operator did not state whether the resultant eirp using that antenna had out of band emissions exceeding the CEPT Report 39 values. Ofcom notes that CEPT is considering this in its studies. We also note that there are guard bands available below the band edges 1980 and above 2010MHz, and that these assist operation of these different services and compatibility, which the CEPT studies will consider.

2.53 Ofcom supports the current ETSI standards for 2GHz User Terminals, but retain the view that if CEPT studies indicate significant spectrum management differences, then a maintenance update of the standards might be considered. We note that the 2GHz wideband standard is very similar to the existing 3GPP standards for mobile terrestrial services.

2GHz User Terminal Out of Band Emission - Other Comments

2.54 Inmarsat queried the interim values in Table 1 for 2GHZ exemptions in the 2011 Consultation. The values between 1.2 and to 2 MHz compared to those values greater than 2 MHz.

2.55 We proposed the use of an interim licence exemption regime because it was unclear whether the satellite operators would be considering operation in advance of any European harmonised operation. The proposed table values came from two sources, CEPT Report 39 and EN 301 442, both information sources already published by ETSI and CEPT and relevant to the 2GHz band. The step change between 1.2 and 2 MHz in the proposed interim exemptions table was caused by the combining of the values to form this table. If this table is formally adopted in an interim IR2016, Ofcom's future consideration of final exemption authorisations will correct the values.

2.56 Given the reasons and issues highlighted above, we have decided not to proceed with the interim exemption at the moment, and instead will wait until the CEPT has completed its work and adopted a harmonised European-wide approach. We will therefore review this issue again once the CEPT report has been completed.

Terminals connecting to the 2012 London Games Tetra Network

Question 5) Do you agree with our proposal to exempt the use of terminals forming part of the Apollo network by a network station user exemption?

2.57 There were no objections to this proposal. Therefore for the reasons set out in the 2011 Consultation and the attached impact assessment, we propose to proceed with regulations to licence exempt terminals forming part of the Apollo network by a network user station exemption and a new interface requirement, IR 2085.

2.58 The relevant draft Interface Requirement *"IR 2085 - UK Interface Requirement 2085 London 2012 Games Tetra Network (Apollo)"* is available on Ofcom's website[12]. This IR will be finalised when the Proposed Regulations come into force.

[12] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

Non-specific SRDs at 138.2 to 138.45 MHz

Question 6) Do you agree with our proposed changes to the current exemption regulations to permit use of non-specific SRDs at 138.2 to 138.45 MHz?

2.59 The majority of respondents agreed with our proposal. One response did not agree with our proposals but did not provide any information as to why.

2.60 Therefore for the reasons set out in the 2011 Consultation and the attached impact assessment, we have decided to proceed with changes to the current exemption regulations to permit use of non-specific SRDs at 138.2 to 138.45 MHz and corresponding amendments will be made to Interface Requirement IR 2030.

2.61 The relevant draft Interface Requirement *"IR 2030 - UK Interface Requirement 2030 Licence Exempt Short Range Devices"* is available on Ofcom's website[13]. This IR will be finalised when the Proposed SRD Regulations come into force.

Other amendments to exemption regulations

2.62 In section 9 of the 2011 Consultation we also provided information relating to the implementation of a number of EU decisions, relevant to licence exemption, and on the work we are carrying out relating to White Space Devices (WSD). This section was included for information only.

EU Decisions

2.63 This section refers to measures adopted/ in the process of being adopted by the European Union which are legally binding on the UK and includes:

- Commission Implementing Decision of 18 April 2011 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community 2011/251/EU (the "4G Decision");
- Commission Implementing Decision of [awaiting formal adoption reference] amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices 2011/xx/xx (the "SRD Decision"; and
- Commission Implementing Decision 29 July 2011 amending Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community EU Decision on the harmonisation of the 24 GHz band for automotive short-range radar equipment in the Community (2011/485/EU) (the "Automotive SRR Decision").

2.64 The information below outlines how we intend to implement the requirements to exempt equipment from the need to hold a WT Act licence as a result of these Decisions.

[13] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

4G Decision

2.65 The EC has amended Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community[14]. This Decision harmonised the technical conditions for the 900 and 1800 MHz bands permitting the use of Universal Mobile Telecommunications System (UMTS) in addition to the Global System for Mobile Communications (GSM). As part of its implementation measures, the UK exempted from licensing UMTS terminals operating in these bands by making amendments to the Wireless Telegraphy (Exemption) Regulations 2003.

2.66 On 15 June 2009 the EC mandated CEPT to define technical conditions for allowing Long Term Evolution (LTE) and other technologies in these bands. CEPT Reports 40 and 41 concluded that LTE and Worldwide Interoperability for Microwave Access (WiMAX) could be introduced in these bands. At the same time ETSI began work on finalising harmonised standards EN 301908-21 and EN 301908-22 which relate to product compliance for these technologies.

2.67 The Commission Implementing Decision 2011/251/EU amending decision 2009/766/EC was published on 18 April 2011 and requires Member States to allow the use of LTE and WiMAX in the 900 MHz and 1800 MHz bands complying with standards set out in that Decision by 31 December 2011.

2.68 As a Member State of the European Union, the UK is bound by the terms of the Decision and is required to implement them. Consequently, we have an obligation to transpose this requirement into UK law. This will require us to vary the mobile network licences. In addition to this change, we propose to also amend the Wireless Telegraphy Act (Exemption) Regulations 2003 to exempt LTE and WiMAX user terminals operating in these bands from the requirement to hold a licence under the WT Act.

2.69 Interface Requirement "IR 2087- *UK Interface Requirement 2087. LTE and WiMAX equipment in 900 and 1800 MHz Bands"* details the technical conditions for the use of LTE and WiMAX user terminals in the UK and is available on Ofcom's website[15]. This IR will be finalised when the Proposed Regulations come into force.

SRD Decision

2.70 At the time of the 2011 Consultation and this Notice the European Commission has not yet adopted the fourth update of EU Decision 2006/771/EC. A draft version of the SRD Decision[16] is available and we believe that our proposals match the technical criteria set out. We are expecting the SRD Decision to be adopted in early December and that Member States will have until 1 June 2012 to implement the decision. However if the SRD Decision is delayed by more than six weeks, or is materially amended, we would proceed with the Proposed SRD Regulations without the provisions to implement the SRD Decision (in order to implement the PLB

[14] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:274:0032:0035:EN:PDF

[15] http://stakeholders.ofcom.org.uk/spectrum/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_ir/

[16] http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/_document_storage/rsc/rsc36_public_docs/rscom11-26_draft_decision_amending_srd.pdf

exemption). If necessary we would re-consult on new regulations that would implement the SRD Decision.

2.71 Within the 2011 Consultation we listed the changes suggested to the RSC in relation to Short Range Devices (SRDs) though CEPT Report 38. The draft SRD Decision requires the following:

- the bands 122 to123 and 244 to 246 GHz be allocated for non specific short range devices. This is a new spectrum allocation for SRD within these internationally recognised industrial, scientific and medical (ISM) bands;
- the band 63 to 64 GHz be allocated for ITS. This is a new authorisation for SRD, although the UK Frequency Allocation Table (FAT) has for some considerable time now listed the allocation of this band to Road Transport and Traffic Telematics (RTTT), RTTT being a form of ITS;
- in the band 127 to 135 kHz a minor change to the power limit for Inductive Applications amounting to a change of under 0.4 dB increase in power;
- for the existing licence exempt 24 GHz vehicular radar the removal of the restriction "for vehicle radar only" for 0.1 mW e.i.r.p. devices and devices operating in the frequency range 24.050-24.075 GHz and above 24.150 GHz;
- in the 87.5 to 108 MHz band amending the title of the permitted devices from Wireless Audio Applications to Low Power FM Transmitters; and
- for RFID operating in the 2446 to 2454 MHz band, alignment of the power limitation to 500 mW e.i.r.p. including airborne use.

2.72 As a Member State of the EU, the UK will be bound by the terms of the Decision and will be required to implement it within the time limits set by the EU Decision. We therefore propose to introduce these liberalisation measures for licence-exempt SRDs by updating IR 2030 – UK Interface Requirement 2030 Licence Exempt Short Range Devices and amending the associated provision in the Wireless Telegraphy Act (Exemption and Amendment) Regulations 2010 in the Proposed SRD Regulation.

Automotive SRR Decision

2.73 The EC has now adopted an amendment to Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for time-limited use by automotive short-range radar equipment in the Community[17]. The amending decision proposes an extension of up to nine years for the use of automotive radar in this band. In order to further protect radio astronomy the decision proposes a number of technical limitations occurring from 30 June 2013.

2.74 We intend to review our current regulations in 2012 with a view to transposing the decision into UK law. Therefore we will not be changing the current exemption for SRR at this time.

[17] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:198:0071:0072:EN:PDF

White Space Devices

2.75 The British Entertainment Industry Radio Group (BEIRG) raised a concern about the potential for harmful interference to existing services from white-space devices (WSD). They believed that Ofcom must undertake extensive real life testing, with industry partners, before any white-space devices are allowed to operate under licence exemption in the UK.

2.76 We realise that work still needs to be done to ensure the risks of interference from WSD to primary users are well understood and mitigated. We are currently monitoring the ongoing trials which are underway and will seek to ensure the required work is undertaken to satisfy us that harmful interference will not occur before moving ahead with licence exemption. Further information can be obtained by visiting the consultation area for WSD on our website at: http://stakeholders.ofcom.org.uk/consultations/geolocation/.

Section 3

General effect of the Wireless Telegraphy (Exemption) (Amendment) Regulations 2011

The legislative framework

3.1 We can exempt the establishment, installation and use of wireless telegraphy equipment by making Regulations under section 8(3) of the WT Act. We propose to implement the changes proposed in this document by making the Wireless Telegraphy (Exemption) (Amendment) Regulations (the "Proposed Regulations"). The Proposed Regulations are included in Annex 6 of this document and will amend the Wireless Telegraphy (Exemption) Regulations 2003 (the "2003 Regulations").

Extent of application

3.2 The Proposed Regulations would apply in the United Kingdom, the Channel Islands and the Isle of Man, subject to formal agreement of the Island Authorities.

Regulations to exempt various devices

3.3 The Proposed Regulations would make the following changes to the 2003 Regulations:

i) Regulation 2 inserts provisions into the 2003 Regulations in order to licence exempt LTE, WiMAX, 3.6 GHz and London 2012 Games Apollo user terminals and sets out the technical references that the above equipment must meet in order to be licence exempt.

Do you have any comments on the drafting of the Proposed Regulations?

Section 4

General effect of the Wireless Telegraphy (Exemption and Amendment) (No.2) Regulations 2011

The legislative framework

4.1 We can exempt the establishment, installation and use of wireless telegraphy equipment by making Regulations under section 8(3) of the WT Act. We propose to implement the changes proposed in this document by making the Wireless Telegraphy (Exemption and Amendment) (No.2) Regulations (the "Proposed SRD Regulations"). The Proposed SRD Regulations are included in Annex 7 of this document and will amend the Wireless Telegraphy (Exemption and Amendment) Regulations 2010 (the "2010 Regulations").

Extent of application

4.2 The Proposed SRD Regulations would apply in the United Kingdom, the Channel Islands and the Isle of Man, subject to formal agreement of the Island Authorities.

Regulations to exempt various devices

4.3 The Proposed SRD Regulations would make the following changes to the 2010 Regulations:

i) Regulation 2 (1) updates the relevant reference to Interface Requirement 2030 in order to make the necessary changes required to implement the SRD Decision (note paragraph 2.76) and the changes to Non-specific SRD at 138.2 to 138.45 MHz.

ii) Regulation 2(2) inserts a new exemption for land use of PLBs providing they meet the requirements of IR 2084 and are not used whilst airborne or on a ship.

Do you have any comments on the drafting of the Proposed SRD Regulations?

Section 5

General effect of the Wireless Telegraphy (Intelligent Transport Systems) (Exemption) Regulations 2011

The legislative framework

5.1 We can exempt the establishment, installation and use of wireless telegraphy equipment by making Regulations under section 8(3) of the WT Act. We propose to implement the changes proposed in this document by making the Proposed ITS Regulations. The Proposed ITS Regulations are included in Annex 8 of this document and will revoke the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009.

Extent of application

5.2 The Proposed ITS Regulations would apply in the United Kingdom, the Channel Islands and the Isle of Man, subject to formal agreement of the Island Authorities.

Regulations to exempt intelligent transport systems

5.3 The Proposed ITS Regulations would make the following changes:

i) Regulation 2 revokes the Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009.

ii) Regulation 4 sets out the frequency band that the service must operate in.

iii) Regulation 5 sets out the technical criteria that the equipment must comply with, as described in Common Decision of 5 August 2008 on the harmonised use of radio spectrum in the 5 875-5 905 MHz frequency band for safety-related applications of Intelligent Transport Systems (ITS).

Do you have any comments on the drafting of the Proposed ITS Regulations?

Annex 1

Responding to this Notice

How to respond

A1.1 We invite written views and comments on the issues raised in this document to be made ***by 5pm on 21 November 2011***.

A1.2 We strongly prefer to receive responses using the online web form at http://stakeholders.ofcom.org.uk/consultations/notice-wireless-telegraphy/ , as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 4), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data – please email licence.exemption@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Paul Chapman
Floor 3
Spectrum Policy Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7981 3921

A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together in annex 3. It would also help if you can explain why you hold your views and how our proposals would impact on you.

Further information

A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Dave Donachie on 020 7981 3173.

Confidentiality

A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your

response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Our approach on intellectual property rights is explained further on its website at http://www.ofcom.org.uk/about/accoun/disclaimer/

Next steps

A1.11 Following the end of the Notice period, and subject to responses, we intend to make the Proposed Regulations, Proposed SRD Regulations and the Proposed ITS Regulations by the end of December 2011.

A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

A1.13 We seek to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.14 If you have any comments or suggestions on how we conduct our consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk. We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@ofcom.org.uk

Annex 2

Our consultation principles

A2.1 We have published the following seven principles that we will follow for each public written consultation.

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about whom we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals. As a 10 week consultation has already been published we will be consulting on the Proposed Regulations for 6 weeks.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Our consultation champion will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We will usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape them.

Annex 3

Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing ☐

Whole response ☐

Part of the response ☐

Name/contact details/job title ☐

Organisation ☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here. ☐

Name

Signed (if hard copy)

Annex 4

Consultation question

A4.1 A list of the questions proposed in this consultation can be found below.

Do you have any comments on the drafting of the Proposed Regulations that implement European and UK proposals?

Do you have any comments on the drafting of the Proposed SRD Regulations that implement European and UK proposals?

Do you have any comments on the drafting of the Proposed ITS Regulations that implement European and UK proposals?

Do you have any comments on the Regulatory Impact Assessment?

Annex 5

Regulatory Impact Assessment

Introduction

A5.1 In accordance with Government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment ("RIA") must be undertaken. The analysis presented here, when read in conjunction with the rest of this document and the 2011 Consultation, represents an RIA as defined by section 7 of the Communications Act 2003 ("the Communications Act").

A5.2 You should send us any comments on this RIA by the closing date for this Notice. We will consider all comments before deciding whether to implement our proposals.

A5.3 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 policy-making and are commonly used by other regulators. This is reflected in section 7 of the Communications Act, which means that we will generally 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 we consider appropriate including related 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.

Background

5.4 In the UK, we are responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy ("WT") licences under the Wireless Telegraphy Act 2006 (the "WT Act") and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the WT 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. However, under section 8(4) of the WT Act, we have to make regulations to exempt equipment if its installation or use meets the following criteria:

- is not likely to involve undue interference with wireless telegraphy;
- is not likely adversely to affect technical quality of service;
- is not likely to lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- does not endanger safety of life;
- does not prejudice the promotion of social, regional or territorial cohesion; and

- does not prejudice the promotion of cultural and linguistic diversity and media pluralism.

Proposal

A5.4 This RIA relates to the proposal to make exemption regulations exempting a number of low powered devices which meet certain criteria from the need for a WT licence. This will be achieved through making two new sets of regulations:

- The Wireless Telegraphy (Exemption) (Amendment) Regulations 2011 (the "Proposed Regulations");
- The Wireless Telegraphy (Exemption and Amendment) (No.2) Regulations 2011 (the "Proposed SRD Regulations"); and
- The Wireless Telegraphy (Intelligent Transport System) (Exemption) Regulations 2011 (the "Proposed ITS Regulations").

A5.5 The changes proposed fall into the following categories:

- Measures to introduce the new technology such as Wireless Access Terminals operating in the 3400-3800 MHz band; LTE; WiMAX, Personal Locator Beacons on land and ITS; and
- Measures to liberalise current licence exemption criteria e.g. for low power Short Range Devices (SRD).

The citizen and / or consumer interest

A5.6 Our principal duty under section 3 of the Communications Act 2003 is to further the interests of citizens in relation to communications matters; and of consumers in relevant markets, where appropriate by promoting competition. We take account of the impact of our decisions upon both citizen and consumer interests in the markets we regulate. We must, in particular, secure the optimal use for wireless telegraphy of spectrum and have regard to the principle under which all regulatory activities should be targeted only at cases in which action is needed. In proposing changes to the existing Regulations we have considered the wider impact beyond immediate stakeholders in the radiocommunications community. We believe that the proposals will be of benefit to consumers for the following reasons:

i) The measures proposed all concern the use of radio equipment on a licence-exempt basis, which reduces the regulatory and administrative burden on our stakeholders and helps to secure the optimal use of spectrum;

ii) Licence-exemption is proposed only in areas where use of equipment is unlikely to cause undue interference to other spectrum users; and

iii) The exemptions support the introduction of new and innovative technologies that will be of benefit to consumers in general.

A5.7 We are required by statute to assess the impact of all our functions, policies, projects and practices on race, disability and gender equality – an Equality Impact Assessment (EIA) is our way of fulfilling these obligations. Based on an initial EIA screening, Ofcom considers that the Proposed Regulations, Proposed SRD

Regulations and the Proposed ITS Regulations have no direct implications for equality or diversity.

Our policy objective

A5.8 We seek wherever possible, to reduce the regulatory burden upon our stakeholders, in this instance users of the radio spectrum. One way in which we can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment. Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument (secondary legislation called Regulations) that exempts users of such equipment from the need to hold a WT licence provided they comply with the terms of the Regulations.

A5.9 In accordance with the Communications Act, we aim to exempt from licensing the use of specified equipment where it is not likely that such use will cause undue interference to other legitimate users of the radio spectrum. We are also required to implement European Union legislation relating to radio spectrum and from time to time this requires licence exemption arrangements to be changed.

Options considered

A5.10 All the licence-exemption measures considered in this consultation involve removing regulatory burdens on stakeholders.

A5.11 In considering whether spectrum should be made available for a particular use, we balance the value of the proposed use of the band against existing and potential future uses. Such judgements typically require assumptions to be made about potential future uses of each band and the potential markets (and producer and consumer benefits) that may arise. Quantitative estimates would involve significant uncertainty and are unlikely to give a robust basis for analysis. Instead our approach has been to gather available information on the potential demand from other uses for the spectrum and make qualitative assessments of the relative benefits and costs of the proposed use.

A5.12 Our consideration also takes into account whether the appropriate means of authorising use is through exemption. Generally, licence-exemption presents the lowest barrier to entry compared with other forms of authorisation, such as individual licences. Our analysis takes this proposition as a starting point and then assesses concerns over harmful interference or congestion to existing users (if any) or potential new users of the band. Harmful interference or congestion could negate the benefits of any reductions in the regulatory burden gained from exemption.

A5.13 Some of the measures also involve implementation of EU Decisions that require allocation of specified spectrum bands to a particular device e.g. to short range devices (SRDs), LTE and WiMAX. EU Decisions are binding on the EU Member States and we are therefore legally required to implement them. A considerable amount of consultation is involved in developing these decisions and therefore our analysis of the final measures for implementing EU Decisions tends to be less detailed than for nationally based policy initiatives.

Analysis of options

Removing regulatory burdens

A5.14 Table A.5.1 below presents our analysis of measures which deal with proposals that remove regulatory burdens on spectrum users. The table considers the arguments for authorising versus not authorising the use / change proposed. In considering whether use should be authorised or not, we assess the potential demand for the spectrum from alternative uses and whether licence-exemption could mean that potentially more valuable uses could be excluded from the spectrum.

Table A.5.1: Assessment of costs and benefits of authorising vs not authorising use

Device	Description of exemption	General benefit of authorising	Potential costs
Personal Locator beacons (PLBs)	To allow the use personal locator beacons (PLBs) on land.	Improves the safety for citizens taking part in outdoor activities in remote areas. Helps to reduce the number of causalities and fatalities by providing search and rescue services with information to aid rescue more rapidly. This could in some cases reduce costs to these emergency responders.	PLBs have been in use on ships and aircraft for several years. Therefore the majority of the cost in the recommended registration service is already there. There may be some additional cost due to the increase in number of registrations. There is a potential additional cost to emergency services of allowing PLB use on land as result of an increase in false alarms. However, this is outweighed by the fact that location information is provided by PLBs.
Infrastructure equipment for safety-related intelligent transport systems (ITS)	To exempt safety-related ITS infrastructure in the 5875 to 5905 MHz band.	Exemption will remove an unnecessary regulatory burden to the introduction of safety-related ITS infrastructure and bring it into line with similar vehicle based equipment. Authorises the use of systems which can improve road safety.	Potential for increase in users in the same location that may led to an increase in congestion and may reduce the effectiveness of such a system. Possible impact on PMSE wireless cameras however, we believe this is unlikely.
Wireless Access user terminals in the 3400 to 3800 MHz band	Proposal to exempt terminal stations for use in the band 3400 to 3800 MHz	Reducing a potential inconsistency in regulation and reducing the administrative burden on licensees. Enables a potential operator to provide a service to their customers in a similar way that a Mobile Operator would.	We do not expect a negative impact on other users as terminals can only transmit when within the coverage footprint of an authorised network.
LTE and WiMAX user terminals	Proposal to exempt user terminals in the 900 and 1800 MHz bands	Required by EC Decision. Enables the existing spectrum used for mobile services to use new technologies once operator licences have been liberalised.	One off cost of statutory instrument.
Tetra terminals for the 2012 London Games Apollo network	To exempt the use of terminals connecting to the Apollo network	Reduce administrative burden to allow authorisation of terminals for the duration of the London 2012 Games.	One off cost of statutory instrument. Terminals are under control of the network so low risk of interference,
Non-specific SRDs in the 138.2 to 138.45 MHz band	Exemption of non-specific SRD in the 138.2 to 138.45 MHz band	Brings the UK into line with other European countries (see ECC Recommendation (ERC\REC 70-03). Can for instance to authorise use of fire safety systems improving safety for citizens.	Sonobuoys are authorised to use this frequency in UK waters. Interference is unlikely due to geographic separation from the low power SRDs.

Device	Description of exemption	General benefit of authorising	Potential costs
Non-specific SRDs in the 122 to 123 GHz and 244 to 246 GHz bands	A new spectrum allocation for non specific SRD in the 122 to 123 GHz and 244 to 246 GHz bands	EC decision. SRDs to operate in bands that are already internationally recognised for industrial, scientific and medical (ISM) use and the Earth Exploration Satellite Service (EESS).	There is currently no known use of apparatus. Studies are ongoing in CEPT on the possible increase in aggregate noise levels in these bands. This would ensure that any apparatus brought onto the market in the EU does not have potential to cause a problem to the EESS. However, as ISM is already authorised in these bands we do not expect an increase in interference to EESS.
Equipment for ITS in the 63 to 64 GHz band	New exemption.	EC Decision. Allocation already in the UK Frequency Allocation Table for Road Transport and Traffic Telematics (RTTT)	Studies in the ECC have indicated that there is compatibility and sharing options between this service and other services previously introduced in 60 GHz bands.
Equipment for inductive applications in the 127 to 135 kHz band	Minor change to power level (less than 0.4 dB)	Alignment with EC Decision.	No costs associated other than one-off administrative cost of making exemption regulation.
Vehicular radar in the frequency range 24.050 to 24.250 GHz	Alternative technical parameters for vehicle radar already authorised for use in the UK.	Harmonisation with EU.	No costs associated other than one-off administrative cost of making exemption regulation.
Low power FM transmitters in the 87.5 to 108 MHz band	Amendment of title of the permitted devices from wireless audio applications to low power FM transmitters.	Harmonise with Europe.	No costs associated other than one-off administrative cost of making exemption regulation.
Equipment for RFID operating in the 2446 to 2454 MHz band.	Alignment of power limitation already permitted (500 mW) for terrestrial apparatus to airborne apparatus	2.4 GHz RFID interrogators will be able to equally operate on an aircraft in motion as well as on the ground, at the increased power (500mW) rather than the (100 mW) present airborne limitation. This should allow a better read rate of RFID tags.	This 7 dB power increase for airborne applications is unlikely to have much impact; 1) because there is little “in-transit” use of RFID and 2) a localised terrestrial unit is far more likely to cause interference to other 2.4 GHz devices than any similar power device shielded within an aircraft at some distance (height).

A5.15 In summary, we consider that there is a good case for authorising, by exemption regulation, the use of devices proposed. In particular, no compelling evidence has been found that there is likely to be current or future demand for the spectrum from other more valuable uses in the relevant frequency bands.

A5.16 We also consider that implementing the measures listed above is likely to generate a net benefit for UK businesses and consumers and at worst would have a neutral outcome (to the extent that benefits may depend on the uptake of the new opportunities afforded by each proposal). We consider that each measure is unlikely to impose costs on other users. Therefore the effect of implementing the proposed measures would be likely to be positive overall.

A5.17 As regards the proposed exemption for LTE and WiMAX user terminals, the Government has requested Ofcom not to change the licensing position as regards user stations in existing frequencies. Given that decision, we do not think it is appropriate to apply a different licensing regime in relation to user stations in the new frequencies.

Costs to business

A5.18 Our assessment of the potential costs to business from each of the proposed licence-exemption measures is detailed in the sections above under analysis of the options. Costs to business could arise insofar as the proposals impact on business use of the spectrum. However, for each of the proposed measures our view is that the potential impact on other users of the spectrum, in terms of the risk of undue interference or increased congestion, is low. Hence, we consider that each of the measures should impose very little cost on business.

A5.19 Moreover, costs to business are likely to be lower under a licence-exemption approach than the requirement for users to obtain individual licences. Licence-exemption represents the least cost regulatory approach to authorisations on the use of spectrum. For example if use of spectrum is authorised through a WT licence, businesses face administrative costs associated with applying for the licence. Businesses could face additional costs depending on the method of award of the licence. If licences are awarded by means of an auction, businesses face the costs (including management time) of participating in the auction. If licences are awarded on a first come first served basis, businesses typically incur the administrative costs of the initial application and annual renewal of licences.

Costs to us

A5.20 There are one-off administrative costs associated with making Statutory Instruments. We consider the implementation costs to be low, both in absolute terms and in comparison to licensing alternatives that might require an auction or the maintenance of an annually renewable licence scheme if licences are awarded on a first come first served basis. Moreover, the costs such as they are will also be offset by the benefits to business and consumer outlined above. There may also be a slight reduction in spectrum management costs in certain areas through licence exemption.

Do you have any comments on the Regulatory Impact Assessment?

Annex 6

Proposed Regulations

D R A F T S T A T U T O R Y I N S T R U M E N T S

2011 No. XXX

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Exemption) (Amendment) Regulations 2011

Made - - - -	**December 2011*
Coming into force - -	**December 2011*

The Office of Communications ("OFCOM"), make the following Regulations in exercise of the power conferred by section 8(3) of the Wireless Telegraphy Act 2006 ("the Act")([18]).

Before making these Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1.These Regulations may be cited as the Wireless Telegraphy (Exemption) (Amendment) Regulations 2011 and shall come into force on [] December 2011.

Amendment of the Wireless Telegraphy (Exemption) Regulations 2003

2.The Wireless Telegraphy (Exemption) Regulations 2003([19]) are amended as follows—

(1) In Schedule 3, Part III paragraph 3—

(a) after sub-paragraph (c), add—

"(d) Long term evolution radiotelephones (LTE):

880–915 MHz

925–960 MHz

1710–1785 MHz

1805–1880 MHz

(e) Worldwide Interoperability for Microwave Access radiotelephones (WiMax)

([18]) 2006 c. 36.

([19]) S.I. 2003/74 amended by S.I. 2003/2155, S.I. 2005/3481, S.I. 2006/2994, S.I. 2008/236, S.I. 2008/2426 and S.I. 2010/2512.

880–915 MHz

925–960 MHz

1710–1785 MHz

1805–1880 MHz

(f) Radiotelephones used as part of the system operated by Airwave Solutions Limited under licence number 0857910/1 for the 2012 London Olympic and Paralympic Games

385–399.9 MHz"

(b) after paragraph 6, add-

"**6A** Wireless access terminals licensed for use in the following frequency band

3400–3800 MHz"

2) In Schedule 3, Part IV, at the end of the list, add—

"IR 2015- UK Interface Requirement 2015 Public Fixed Wireless Access Radio Systems Operating within the 3 to 11 GHz Frequency Bands Administered by Ofcom, published by Ofcom in [DATE] 2011;

IR 2087- UK Interface Requirement 2087. LTE and WiMax equipment in 900 and 1800 MHz Bands, published by Ofcom in [DATE] 2011;

IR 2085- UK Interface Requirement 2085 London 2012 Games Tetra Network (Apollo), published by Ofcom in [DATE] 2011."

[*Ed Richards*]
[Chief executive] of the Office of Communications
[date] For and by authority of the Office of Communications

EXPLANATORY NOTE

(This note is not part of the Order)

Annex 7

Proposed SRD Regulations

DRAFT STATUTORY INSTRUMENTS

2011 No.

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Exemption and Amendment)(No. 2) Regulations 2011

Made - - - -	** December 2011*
Coming into force - -	** December 2011*

The Office of Communications ("OFCOM"), make the following Regulations in exercise of the power conferred by section 8(3) of the Wireless Telegraphy Act 2006 ("the Act")([20]).

Before making these Regulations, OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1.These Regulations may be cited as the Wireless Telegraphy (Exemption and Amendment)(No. 2) Regulations 2011 and shall come into force on [ ] December 2011.

Amendment of the Wireless Telegraphy (Exemption and Amendment) Regulations 2010

2.The Wireless Telegraphy (Exemption and Amendment) Regulations 2010([21]) are amended as follows—

(1) in regulation 5,—

(1) after "Devices" insert "([Date] 2011)"; and

(2) for the footnote, substitute "published by OFCOM in [DATE] 2011"; and

(2) after regulation 7, insert—

"Personal locator beacons

8. (1) The use of wireless telegraphy apparatus in the frequency band 406 to 406.1 MHz complying with the publication "IR 2084 - UK Interface Requirement 2084 Cospas-Sarsat locator

([20]) 2006 c. 36.
([21]) S.I. 2010/2512.

beacons for use on land ([DATE] 2011)"([22]) is exempt from the provisions of section 8(1) of the Act, if—

(a) it does not cause or contribute to any undue interference to any wireless telegraphy;

(b) use is not airborne; and

(c) it is not used on a ship.

(2) In this regulation-

"ship" includes every description of vessel used in navigation."

[Ed Richards]
[Chief Executive] of the Office of Communications
[Date] For and by authority of the Office of Communications

([22]) published by OFCOM in [DATE 2011].

Annex 8

Proposed ITS Regulations

D R A F T S T A T U T O R Y I N S T R U M E N T S

2011 No. 0000

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Intelligent Transport Systems) (Exemption) Regulations 2011

Made - - - -	** December 2011*
Coming into force - -	**December 2011*

The Office of Communications ("OFCOM"), make the following Regulations in exercise of the power conferred by section 8(3) of the Wireless Telegraphy Act 2006 ("the Act")([23]).

Before making these Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1.These Regulations may be cited as the Wireless Telegraphy (Intelligent Transport Systems)(Exemption) Regulations 2011 and shall come into force on [] December 2011.

Revocation

2.The Wireless Telegraphy (Vehicle Based Intelligent Transport Systems) (Exemption) Regulations 2009([24]) are revoked.

Interpretation

3.In these Regulations—

(1) "dBm" means decibels of power referenced to one milliWatt;

(2) "e.i.r.p." means equivalent isotropic radiated power;

(3) "ETSI" means the European Telecommunications Standards Institute;

(4) "intelligent transport system" means a system or service, based on information and communications technologies, including processing, control, positioning, communication and electronics, that is applied to a road transportation system; and

([23])2006 c.36.
([24])SI 2009/65

(5) "MHz" means megahertz.

Exemption

4.The establishment, installation and use of wireless telegraphy stations and apparatus within the frequency band 5875 MHz to 5905 MHz complying with the terms, provisions and limitations in regulation 5 is hereby exempt from the provisions of section 8(1) of the Wireless Telegraphy Act 2006.

Terms, provisions and limitations

5.The station or apparatus must—

(1) be, or be part of, a safety-related intelligent transport system;

(2) only emit emissions which when measured in any direction have-

(i) a maximum mean e.i.r.p. density of 23 dBm per MHz; and

(ii) a maximum mean e.i.r.p. of 33 dBm;

(3) use techniques to mitigate interference that-

(i) provide at least equivalent performance to techniques described in ETSI standard EN302 571 (version 1.1.1)([25]); and

(ii) use a transmitter power control (TPC) range of at least 30 dB; and

(4) not cause or contribute to undue interference to any wireless telegraphy.

Ed Richards
Chief executive of the Office of Communications
[date] For and by authority of the Office of Communications

EXPLANATORY NOTE

(This note is not part of the Order)

[]

([25])Published by ETSI in September 2008

Annex 9

Glossary of abbreviations

CEPT	European Conference of Postal and Telecommunications Administrations
CGC	Complementary Ground Components
Cospas-Sarsat	International satellite-based search and rescue system
dB	Decibels
dBm	Decibels relative to a milliwatt
ECC	Electronic Communications Committee
e.i.r.p.	Equivalent isotropic radiated power
ETSI	European Telecommunications Standards Institute
EC	European Community
EU	European Union
FSS	Fixed Satellite Service
FWS	Fixed Wireless Service
GHz	Gigahertz (one thousand Megahertz)
GSM	Global System for Mobile communications
IR	Interface Requirement
kHz	Kilohertz (one thousand Hertz)
LMSS	Land MSS
LTE	Long Term evolution
MHz	Megahertz (one thousand Kilohertz)
MoD	Ministry of Defence
MSS	Mobile Satellite Services
mW	Milliwatt (a thousandth of a Watt)
PLB	Personal Locator Beacon
R&TTE	Radio and Telecommunications Terminal Equipment Directive
RTTT	Road Transport and Traffic Telematics

RSC	Radio Spectrum Committee
SRD	Short range device
TRP	Total Radiated Power
UMTS	Universal Mobile Telecommunications System
WBDTS	Wideband Data Transmission Systems
WiMAX	Worldwide Interoperability for Microwave Access
WT Act	Wireless Telegraphy Act 2006

Annex 10

List of respondents

A10.1 Below is a list of the non-confidential respondents to this consultation.

Alan Robinson

Alistair Edwards

BEIRG

Equine Ramblers UK

Everything Everywhere

Heather Morning

Highways Agency

Ian Macleod

Inmarsat

Intelsat

John Gay

McMurdo Ltd

Mike Simpson

NATS

Niall Campbell

Silver Spring Networks

Solaris Mobile

UK Broadband Ltd

Annex 10

Radio Interfaces

A11.1 Listed in the table below are links to the associated IR documents referenced in this Notice.

IR Document	Link
IR 2015.1 to 2015.3	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR_2015.pdf
IR 2016.1 to 2016.10	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR_2016.pdf
IR 2083	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/draft_IR_2083.pdf
IR 2084	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR_2084.pdf
IR 2085	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR_2085.pdf
IR 2086	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR_2086.pdf
IR 2030/1/26	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR2030.pdf
IR 2087	http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/Draft_IR2087.pdf