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| Subject: | EC Mandate on 5 GHz extension (WAS/RLANs);  AI 6.2: Draft Interim Report, general considerations | | |
| N  Group membership required to read? (Y/N) | | | |
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| Summary: | | | |
| WG FM, during its 79th meeting in Budapest (03-07 February 2014), agreed on the draft Interim Report as provided in **Annex 3** to document **ECC(14)008**. The German administration generally supports this version of the Interim Report. The compatibility and sharing studies are still at an early stage; therefore no conclusions can be drawn at the moment on coexistence matters. Nevertheless, some essential regulatory aspects - as proposed below - should be clarified for supporting the on-going activities within WG FM, WG SE and CPG.  Additionally, amendments on the draft Interim Report are proposed, see document **ECC(14)010**. | | | |
| Proposal: | | | |
| During the last WG FM meeting, the questions on the protection of those primary radio services to which the proposed WAS/RLAN extension bands have already been allocated were substantially discussed. It is mentioned in the report from WG FM (ECC(14)008, section 6.1, par. 15) that “As a result of these discussions the meeting asked the WG FM chairman to highlight these discussions at the next ECC meeting and request that the ECC Chairman ask for further clarification from the European Commission when forwarding the final draft Interim CEPT Report to the European Commission.”  **By supporting the on-going work on the response to the EC Mandate, ECC is kindly invited to take into account the views and proposals as provided below.** | | | |
| Background: | | | |
| In September 2013, the European Commission issued a Mandate to CEPT to study and identify harmonised compatibility and sharing conditions for Wireless Access Systems including Radio Local Area Networks in the bands 5350-5470 MHz and 5725-5925 MHz ('WAS/RLAN extension bands') for the provision of wireless broadband services (Document **ECC(13)054**). | | | |

**1. Introduction**

The considerations and proposals as provided below are based on the output of the latest WG FM meeting, 03-07 February 2014. See document **ECC(14)008** and **Annex 3** to it.

**2. Considerations, proposals**

**2.1 Regulatory status of WAS/RLANs**

Task 1 of the Mandate declared “the future WAS/RLAN usages as an essential element of the wireless broadband EU priority”. That sentence has to be understood in the light of Article 6 nb. 7 RSPP:

“The Commission shall, in cooperation with Member States, assess the justification and feasibility of extending the allocations of unlicensed spectrum for wireless access systems, including radio local area networks.”,

and of recital (25):

“(25) Wireless access systems, including radio local area networks, may outgrow their current allocations on an unlicensed basis. The need for and feasibility of extending the allocations of unlicensed spectrum for wireless access systems, including radio local area networks, at 2.4 GHz and 5 GHz, should be assessed in relation to the inventory of existing uses of, and emerging needs for, spectrum, and depending on the use of spectrum for other purposes.”

The Mandate is the initial activity of the Commission to assess in cooperation with Member States the justification and feasibility of extending the allocations. There are neither assessments in relation to the inventory of existing uses of, and emerging needs nor a choice of the 5 GHz spectrum done.

As foreseen by the RSPP, the justification and feasibility of extending the allocations of unlicensed spectrum for wireless access systems will solely depend on the outcome of the studies regarding the use of spectrum for other purposes.

In Task 2 of the Mandate it is indicated that “Based on the working assumption that WAS/RLANs would operate on a co-primary basis under an appropriate mobile allocation in the whole 5150 MHz to 5925 MHz band, and in the light of experience, the compatibility and sharing conditions should in particular identify the technical parameters that would be needed to ensure in the internal market consistent harmonised conditions and requirements for WAS/RLANs operating on a shared basis across the entire 5 GHz band.”

The current spectrum designation for WAS/RLANs (in the bands 5150-5350 MHz and 5470-5725 MHz) is based on a co-primary spectrum allocation to the Mobile Service (except Aeronautical Mobile Service) achieved at the WRC-03. The protection of the other primary radio services is defined in Article 5 of the ITU Radio Regulations, see footnotes 5.446A, 5.446B, 5.447F and 5.450A, and Resolution 229 (WRC-03, Rev. WRC-12). Hence from a regulatory perspective, the Mobile Service (for WAS/RLANs) in the allocated bands has to protect earth stations of the Fixed-Satellite Service, stations of the Fixed Service as well as stations of the Radiodetermination Service.

This basic principle on ITU level is completely in line with the legal status of WAS/RLANs in the German frequency allocation table and frequency plan.

According to Article 9 of the Framework Directive (see Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directive 2002/21/EC) all EU Member States shall respect relevant international agreements, including the ITU Radio Regulations, and may take public policy considerations into account.

**🡪 ECC is invited to support the basic principle, the protection of all primary radio services to which the bands 5350-5470 MHz and 5725-5925 MHz have already been allocated according to Article 5 (Region 1) of the ITU Radio Regulations / according to ERC Report 25, as an essential requirement for the on-going studies.**

The response to the Mandate (development of the final CEPT Report) should be based on this principle, because activities pursued under Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) shall take due account of the work of international organisations related to radio spectrum management, e.g. the ITU and the CEPT (see Article 1 No. 3). This would define a seniority e.g. of the Radiolocation Service (including military radars), Fixed-Satellite Service (E-s) and Fixed Service (in Germany including BFWA) over the proposed future allocation to the Mobile Service (WAS/RLANs).

Although the proposed future allocation to the Mobile Service (WAS/RLANs) could not claim protection from the other primary services, any mitigation measures which are possible on both sides (on the possible interferer (WAS/RLANs) as well as on the possible victim (incumbent radio services)) which would ease sharing and which could result from the outcome of the compatibility and sharing studies may be applicable, as long as they are based on a cooperative solution (agreed by all relevant parties). This would also be in line with Task 2 of the EC Mandate, which tasks CEPT to develop “appropriate mitigation techniques and/or operational compatibility and sharing conditions […] in close cooperation with all concerned stakeholders”.

An approach which would not be in line with this general principle as described above and which would probably be part of a future harmonisation measure (Commission Implementing Decision) would hinder the implementation of such a harmonisation measure on national level. In Germany e.g. the bands 5350-5470 MHz and 5725-5850 MHz could only be made available for the Mobile Service (WAS/RLANs) if an agreement between the military and the civil administrations could be achieved. It cannot be assumed that such an agreement would be possible if the primary Radiolocation Service (military radars) would not be sufficiently protected. A future Commission Implementing Decision would not be supportable in this regard, because the military responsibility is purely based on national sovereignty. Since some stakeholders claim the RSPP and EU Policy goals mentioned in the RSPP justify a mobile allocation for WAS/RLANs operating on a shared basis in the whole 5150 MHz to 5925 MHz band, it needs to be emphasised that according to its Article 1, the RSPP “is without prejudice to the right of Member States to organise and use their spectrum […] for defence.”

In this context the own findings of the European Commission regarding the future military spectrum demand should be considered, too. They are published in the conclusions of Analysys Mason´s study “Analysis of technology trends, future needs and demand for spectrum in line with Art. 9 of the RSPP” prepared for the European Commission DG Communications Networks, Content & Technology (see p. 227): “There is a significant additional demand for the defence sector in the medium to long term, with a more moderate demand in the short term. The view of the sector is that this increase in demand can be managed within the currently used designations, as long as these are protected.” According to Art. 1 No. 1 of it, the RSPP shall not affect the sufficient availability of spectrum for other Union policy areas such as the Common Security and Defence Policy.

It should also be taken into account that CPG/PTD is responsible for the technical studies on WAS/RLANs vs. radars and for the preparation of AI 1.1 of WRC-15 the regulatory status of the Radiolocation Service cannot be ignored (neither of other radio services). WG FM, during its latest meeting in Budapest, agreed which compatibility studies should be addressed by WG SE and also invited WG SE to consider both directions of interference in the studies (regarding the range 5725-5925 MHz), recognising that WG FM will be responsible for assessing any potential regulatory implications for each of compatibility scenarios being addressed. This way forward is supported by Germany.

**🡪 ECC is invited to confirm that both directions (WAS/RLANs as a potential interferer as well as a potential victim) should be taken into account during the on-going studies.**

This should not be understood as a contradiction with the principle that WAS/RLANs in the proposed extension bands must not claim protection from other primary services. But it would provide a complete picture which would also be required for a future implementation of WAS/RLANs. Also by taking into account relevant coexistence measures which would then be described in a future harmonised standard for the WAS/RLAN extension bands. This would be in line with studies e.g. carried out in the past for SRDs. Although SRDs have a lower regulatory status in relation to the radio services in the relevant bands, typically studies in both directions are carried out to get a clear view on a predictable sharing environment for these SRDs. It seems to be appropriate, for the on-going technical studies, to firstly carry out the studies related to WAS/RLANs as a potential interferer and to know the conditions for the protection of the incumbent radio services before studies are carried out for the opposite direction (WAS/RLANs as a victim). However, all studies are subject to contributions submitted to the relevant PT meetings.

Because of the discussions which took place during the latest WG FM meeting regarding the regulatory status of WAS/RLANs in relation to other radio services, it seems to be necessary to emphasise that no changes should be addressed with regard to the status of the WAS/RLAN bands already available (although only used to a very limited extent).

**🡪 ECC is invited to support that the regulatory status of WAS/RLANs in the existing bands 5150-5350 MHz and 5470-5725 MHz should be kept unchanged (based on the outcome of WRC-03).**

**2.2 Tasks as defined in the EC Mandate**

Task 1 of the EC Mandate has been subdivided into the following four items:

1.1. Ensuring the planned operation of GMES/Copernicus (such as availability of proper satellite data based on SAR imaging systems) within the band 5350-5470 MHz.

1.2. Ensuring safety-related operation of ground-based ITS systems in the band 5875-5905 MHz in line with the provisions of Decision 2008/671/EC.

1.3. Facilitating coexistence between RLAN systems and other existing usage in various Member States in and adjacent to the bands 5350-5470 MHz and 5725-5925 MHz as listed in the annex to the Mandate, including FSS in the band 5725-5925 MHz and radiolocation applications in the bands 5350-5470 MHz and 5725-5850 MHz.

1.4. Assessing the impact, if any, of the future use of WAS/RLAN systems in the WAS/RLAN extension bands on SRDs operating in the bands 4500-7000 MHz, 5725-5875 MHz and 5795-5805 MHz according to the parameters harmonised in Decision 2006/771/EC.

There is a common understanding among the relevant parties that ‘ensuring the planned operation” of GMES/Copernicus and ‘ensuring safety-related operation´ of ITS requires a protection of the relevant radio services to which the spectrum has already been allocated, namely Earth Exploration-Satellite Service (active) and Mobile Service (for ITS), both with a primary status in Article 5 of the ITU Radio Regulations as well as in ERC Report 25.

However, the discussions during the last WG FM meeting had shown that the meaning of ‘ensuring operation´ and of ‘facilitating coexistence´ was interpreted in different ways.

Such a dissimilar interpretation is not feasible due to the following aspects:

Firstly, it would contradict the literal sense. Both wordings aim to reach the same. `Ensuring an operation´ as well as `facilitating coexistence´ describe that two different applications shall be able to run in the same frequency range.

Secondly, from a sensible reader’s and recipient’s perspective no differentiation can be perceived. Throughout the Mandate itself no uniform terminology is used:

* Section 1) Purpose, page 1: “…and that coexistence with other systems in these and adjacent frequency bands is safeguarded”,
* Section 2) Background, page 4: “to ensure coexistence between WAS/RLAN and existing operations of military applications and meteorological radars as well as other primary services”,
* Section 3) Justification, page 5: “However, such an opportunity can only be realised if appropriate coexistence between WAS/RLAN and those civil and/or military radio applications for which the bands 5350-5470 MHz and 5470-5725 MHz are already assigned or designated is duly safeguarded” and further:

“It will therefore be necessary to carry out the appropriate technical studies and identify suitable sharing conditions to fully safeguard the envisaged operation of GMES and of safety-related ITS applications as well as to study the compatibility of WAS/RLAN with all other radio applications currently operated in these bands as well as in bands adjacent to these bands.”

* Section 4) Task order and schedule, page 6: “The purpose of this Mandate is to (1) study and identify harmonised compatibility and sharing scenarios for WAS/RLANs to operate on a shared basis in an uninterrupted band from 5150 MHz to 5925 MHz under the condition that (i) appropriate protection of EU priority applications, *in particular* the planned introduction of GMES in the band 5350-5450 MHz and the use of safety-related ITS applications in the frequency band 5875-5905 MHz, is ensured and (ii) that coexistence of WAS/RLAN with other current civil and/or military radio systems to which the bands 5350-5470 MHz and 5725-5925 MHz and adjacent bands have already been assigned or designated (see Annex) is safeguarded;”.

Furthermore, the Mandate uses there and in Section 3) Justification, page 5, the term ‘in particular’: “In particular with regard to radio applications that represent priorities of EU spectrum policy […] it will be necessary to ensure full protection of the envisaged usage.” ’*In particular*’ gives only one explicit example for which usages “full protection would be necessary to be ensured”. But also those radio applications which are not mentioned explicitly after ’*in particular*’ require the same protection level.

In this context it should be highlighted that a ‘full protection’ (100 %) as required by the Mandate is technically unfeasible and the EC is most likely aware of that. If the Mandate nevertheless uses this formulation, it is obvious that the wording of the Mandate should not be taken too literally.

In order to avoid any misunderstanding and debates on the wording in Mandates in the future, providing future (Draft) Mandates translated in all EU languages as it is currently state of the art for final Commission deliverables only seems to be appropriate. In case, there were different meanings from a native speaker’s perspective, in the future a Mandate to CEPT would be accepted in the Radio Spectrum Committee by Germany only if the Commission provided a German translation of the draft in advance.

Thirdly, from a legal point of view, it has to be taken into account that mandates itself are no legal instrument for changing existing community or national law. They provide only tasks to the CEPT to fulfil with no automatic follow-on activity for an Implementing Decision. Mandates are only consulted with RSCOM and do not need a formal approval. Therefore member states can only express opinions on the wording without the right to vote.

Existing national law would be amended if different grades of primary services could be introduced by the Mandate. The German Telecommunications Act requires the protection of all incumbent radio services. The German Telecommunications Act requires further the protection of all incumbent radio services in the same manner. It would not at all be possible to differentiate, in particular not to “downgrade” the status of specific radio services because they are not covered by EU policy goals mentioned in the RSPP (like GMES/Copernicus in Task 1.1 of the Mandate) or covered by a Commission Decision (like ITS in Task 1.2).In line with its Telecommunications Act, Germany will protect all (primary) radio services under consideration (those to which the spectrum has already been allocated and the proposed mobile service) according to their regulatory status. All existing radio services, e.g. the Fixed-Satellite Service (E-s), the Radiolocation Service and - in Germany - the Fixed Service (also because of BFWA), have seniority over the proposed new Mobile Service (for WAS/RLANs).

Furthermore, if the fact to be mentioned in the RSPP or to be covered by a Commission Decision could lead to an “upgraded” regulatory status or protection level of an application, SRDs operating in the 5 GHz bands would need to be protected against future WAS/RLAN systems too, because they are covered by Commission Decision 2006/771/EC and its updates. The same would be valid for UWB applications according to Task 1.3 of the Mandate that are covered by Commission Decision 2007/131/EC (amended by 2009/343/EC). On the other hand, it is obvious and undisputed, that SRDs and UWB applications shall be treated according to their - lower, underlaying - regulatory status.

Thus, neither to be part of an EU policy goal nor to be covered by a Commission Decision creates any changing of the regulatory status of a service or an application.

**🡪 ECC is invited to support that all primary radio services to which the spectrum has already been allocated and which are relevant within the scope of items 1.1, 1.2 and 1.3 of Task 1 of the Mandate should be treated and protected in the same way.**

The applicability of mitigation measures on the victim side (radio services already available) would require a cooperative approach between the relevant parties.

This approach, i.e. the requirement for protection of the existing radio services, would also be in line with the work on ITU level and would therefore match with the CPG preparation for AI 1.1 of WRC-15. Any deviation between the work related to the EC Mandate (CEPT Report) and the WRC-15 preparatory work (ECP) could result in additional constraints for all involved parties. This may also limited the negotiation range for international harmonised solutions at WRC-15 on 5 GHz RLANs, as it will be extreme unlikely that other administrations will follow the proposed interpretation.

It should also be taken into account that WAS/RLANs in the proposed extension bands (as well as in the bands already available) would be used without the requirement of an individual authorisation. Therefore any geographical coordination between WAS/RLAN stations and e.g. FSS earth stations or radar sites could hardly been carried out in practise; neither on national level nor cross-border. Therefore geolocation databases (as currently mentioned as an example in section 5 of the draft Interim Report) is not considered as an appropriate tool for improving the coexistence between WAS/RLANs and the existing radio services. Furthermore it should be considered that e.g. information on military radar sites must not be made publicly available and that for requirements on the protection of the incumbent radio services not only the regulatory but also the enforcement context of general authorisations - envisaged for WAS/RLANs in the proposed extension bands - should be taken into account.

The experiences, made during the last years with regard to the coexistence between WAS/RLANs and other radio applications in the bands 5150-5350 MHz and 5470-5725 MHz has to be taken into account. ECC Report 192 on “The current status of DFS (Dynamic Frequency Selection) in the 5 GHz frequency range” has just been adopted and published. This Report was intended to keep the collected information and study further in detail the issue of WAS/RLANs 5 GHz interference to meteorological radars.

Item 1.4 of the Mandate’s task 1 is related to SRDs, hence to a radio application within the scope of an underlay regulation. Although WAS/RLANs, according to the expected primary Mobile Service, would have precedence over SRDs, the impact on the various sub-categories of SRDs should also be studied.

In addition, the impact on planned radio applications, such as “Wireless Industrial Applications” (WIA, see ECC Report 206) and “Broadband Direct-Air-to-Ground Communications” (DA2GC, see ECC Report 210 and draft ECC Report 214), should be studied.

**🡪 ECC is invited to take into account the aspects as mentioned above and to support that also the compatibility with SRDs, WIA and Broadband DA2GC should be studied.**