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| **Working Group FM** | | |
| **74th Meeting** | |  | |
| **Bern, 23 – 27 April 2012** | |  | |
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| **Date issued:** | **13 April 2012** | | |
| **Source:** | **ECO** | | |
| **Subject:** | **Results of the WG FM QUESTIONNAIRE to CEPT ADMINISTRATIONS on the current and future usage of frequency band 2300-2400 MHz** | | |
| N  Group membership required to read? (Y/N) | | | |

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| **Summary**  This questionnaire was sent out from the Office on 24 October 2011. The official deadline was on the 1 March 2012.  **By 10 April 2012, a total of 40 countries provided an answer to the questionnaire.**  All the responses are contained in the table attached to this summary. |
| **Proposal**  WG FM is invited to consider the responses and the summary for necessary actions to be taken on the subject. |

1. **Responses**

Replies were received from 40 administrations by 10 April 2012.

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| Albania  Austria  Belarus  Belgium  Bosnia Herzegovina  Bulgaria  Croatia  Cyprus  Czech Republic  Denmark  Estonia  Finland  France  Georgia  Germany  Greece  Hungary  Iceland  Ireland  Italy | Latvia  Lithuania  Luxembourg  Macedonia  Malta  Montenegro  Moldova  Norway  Polen  Portugal  Russian Federation  Slovak Republic  Slovenia  Spain  Sweden  Switzerland  The Netherlands  The United Kingdom  Turkey  Ukraine |

The countries which have not yet responded are: Vatican City, San Marino, Andorra, Monaco, Liechtenstein, Azerbaijan, Serbia, Romania.

Two questions were included in the questionnaire and all administrations which answered have provided responses to both questions.

**1 What is the current use of the band 2300-2400 MHz in your country?**

**27 countries currently use all or parts of the band for PMSE applications** (PMSE includes SAP/SAB and ENG/OB as defined in ECC Report 002, the answers also include mention of cordless cameras, video links etc.).

Other considerable usage amongst countries in this band (indicated for at least five countries):

* Amateur Services;
* Aeronautical Telemetry (ERC REC 62-02);
* Governmental Use (incl. military);
* Mobile applications (wireless access, IMT);
* Fixed Links

**2 What is your short, medium and long term plans with regard to the future use?**

Only a minority of the answers includes a differentiation between short, medium and long term plans.

**No change or no other plans** (referring to PMSE and other incumbent applications) was the response given by **12 countries**.

Future use in all or part of the frequency band by **IMT (includes also LTE or Wimax), BWA, BWS, Mobile applications, or technology and service-neutral basis** has been indicated by **17 countries**.

One country stated that other applications such as mobile broadband could possibly be introduced on a geographical coordination basis.

Some additional countries (five counted in addition to the 17 mentioned before) indicated that they might support an EC / ECC harmonisation measure for this band, without specifying a preferred or planned radio application, if it would be carried out, especially valid for the long term future.

Two countries mentioned MBANS under future plans for this band. The respondents mentioning them do not appear to be suggesting additional protection such as would impact either on proposed harmonisation measures (MFCN or whatever), or maintenance of status quo arrangements (typically PMSE or governmental usage/military).

**Attachment: Responses received by 10 April 2012**

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| **Country** | **What is the current use of the band 2300-2400 MHz in your country?** | **What is your short, medium and long term plans with regard to the future use?** |
| Albania | The national table of Frequency allocations defines for the band 2300-2400 MHz the following use:  FIX  MOBILE  Amateur  Radiolocation  • In Fixed service the applications are Aeronautics Telemetry  • Amateur service included in Amateur  • SAP/SAB in mobile  And the following documents:  ERC/REC 62-02; ERC/REC 25-  10; EU2 | ALBANIA supports all the European development regarding this issue, especially on the future use of this band for IMT services. |
| Austria | The whole frequency band is used and licensed for cordless cameras. These cordless cameras are used either by the broadcasters or by the police and other emergency services. | There is no general change concerning the usage of this frequency band foreseen in the near and far future. |
| Belarus | Currently the 2300-2400 MHz band is designated for governmental purposes in the Republic of Belarus. There are no any civil BWS applications in this frequency band. | In future in the Republic of Belarus this frequency band is planned to be designated for deployment of BWS applications in accordance with the Perspective plan of radio spectrum utilization by radio electronic facilities in the Republic of Belarus. Term of BWS introduction into the band will be determined later. As first stage the conversion process should be carried out. |
| Belgium | Amateur  Defence systems  Military aeronautical telemetry  SAP/SAB airborne video links (2200-2400 MHz)  SAP/SAB portable video link (2200-2400 MHz)  SAP/SAB vehicular video links (2200-2400 MHz) | We will continue to use this band for wireless video links as we do not have sufficient suitable frequency bands available for this wireless video. |
| Bosnia Herzegovina | Licensed to Public Broadcasting Service for SAP/SAB applications (entire band for mobile video links) | Even in the long term plans, it is planned to keep this assignment. |
| Bulgaria | – 2300-2400 MHz band is used for amateur service according to Technical requirements to carrying out electronic communications through Amateur Service equipment;  – According to General requirements for provision of public electronic communications 2300-2400 MHz band is also used for public electronic communication networks SAP/SAB, including ENG/OB. | As EU member state Bulgaria observes the recommendations and decisions adopted by the European Commission. |
| Croatia | SAP/SAB | No change in usage plans |
| Cyprus | In accordance to the Radiofrequency Plan of the Republic the 2300-2400 MHz band can be used for:  1. Aeronautical Telemetry  2.Amateur applications  3. Mobile applications  4. SAP/SAB | There are no plans with regard to the future use of the band, since limited interest has been expressed so far for the use of the said band. We have only issued one authorisation (one frequency national coverage) for the SAP/SAB service. |
| Czech Republic | Band is 2300–2400 MHz is used for civil purposes as follows:  o The band 2300–2400 MHz is used by ENG (SAP/SAB applications).,  o The sub band 2300–2328 MHz is used by Aeronautical telemetry (one channel), | There are not urgent requirements for usage of this band in the Czech Republic, consequently, short terms plans don’t assume any significant changes, i.e. utilisation of aeronautical telemetry and SAP/SAB apps is remaining.  Long term utilisation strategies take into consideration the ITU identification of the band for IMT and RSPP requirements for additional spectrum for BB. |
| Denmark | Until 31. December 2015 the band is used for PMSE. Reference is made to EFIS. | After 31. December 2015 the band will be used for mobile broadband. |
| Estonia | SAP/SAB (10 MHz) and 2 operators (2x30 MHz) of Wireless Access Systems | Depending on market needs and progress of CEPT regulation. |
| Finland | The band is used for wireless cameras and video links (ENG-links). The radio license for these applications covers nation- wide usage of the band 2315 - 2400 MHz. For the band 2290 - 2315 MHz the radio licenses are granted for the use in defined geographical locations. | We have considered no change to our existing usage in short to medium term. According to the radio licenses the current nation-wide use by wireless cameras and video links (ENG-links)in the band 2315 - 2400 MHz should be protected from harmful interference and no other applications can be introduced in this band.  For the long term plan: Currently, there is no alternative spectrum available for these applications in Finland. |
| France | The band 2300-2310 MHz is used for both civilian video-links (SAP/SAB, ENG/OB) and governmental aeronautical telemetry over specific national areas.  The band 2310-2400 MHz is primarily used for governmental terrestrial and aeronautical telemetry (in accordance with ERC/REC/62-02) and other usages including data networks, video links (terrestrial and aeronautical), aeronautical data links and UAS.  As per RR No. 5.395, the use of the band 2 310-2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service in France. | In the short and medium terms, the above mentioned telemetry applications will remain the major and priority uses even if other applications like mobile broadband could possibly be introduced on a geographical coordination basis. |
| Georgia | Currently 2300-2400 MHz band is distributed to licensed operators and in accordance with ITU-RR is used by IMT 2000 systems | In future LTE technologies should be implemented, currently used technology is WiMax |
| Germany | 2300-2320 MHz: Telemetry on a primary basis (including airborne and civil as well as military applications).  2320-2400 MHz: Cordless Cameras on a primary basis (dedicated sub-bands for different user categories: PPDR, ENG/OB, industry).  2320-2400 MHz: Amateur Service on a secondary basis. | The telemetry applications were shifted from the band 1474 1481.5 MHz to the band 2300-2320 MHz some years ago because of the introduction of T-DAB. The band 2300-2320 MHz should be kept for telemetry based on ERC Recommendation 62-02.  The band 2320-2400 MHz has to be considered as the core band for cordless cameras in Germany (for PPDR, ENG/OB, and industry). Because of the higher bandwidth required for HD cameras and because of the fact that other bands, available in the past for short term licenses for cordless cameras, have been auctioned for MFCN in the meantime, the band 2320-2400 MHz and additional spectrum is required for cordless cameras in the short, medium and long term future.  Because of the situation as described above, there will be no possibility in the foreseeable future for the introduction of mobile broadband in the range 2300-2400 MHz. |
| Greece | The band is exclusively used in the five largest (by population) cities of Greece for the operation of public safety networks (government usage). In the rest of the territory there is minimal deployment of fixed point-to-point links (less than ten links nationwide) supporting television broadcasting purposes. | There are no short, medium or long term plans for this band |
| Hungary | The 2300-2400 MHz band is allocated to the Amateur Service on a secondary and to the Fixed and Mobile Service on a primary basis. Regarding the primary services the band is segmented with respect to the nature of use: the sub-band 2300-2370 MHz is planned for electronic communication services (including IMT and BWA) for civil use, therefore licenses cannot be issued for such purposes for the time being due to the fact that there is no CEPT document that could provide guidance (harmonised use of the band) for the elaboration of the national regulation.  The other segment of the band (2370-2400 MHz) is designated for non-civil (TDD) BWA applications. | In case of having a CEPT document on the harmonised use of the 2300-2400 MHz band (which could be the basis of the national regulation) and planning to initiate an awarding procedure, the subband 2300-2370 will be designated for electronic communications services (including BWA and IMT applications) for civil use. |
| Iceland | Mobile TV camera links | Short term plan: Mobile TV camera links; Medium and long term: To be decided. |
| Ireland | Currently, within Ireland the sub-band 2307 - 2327 MHz is used for Rural Telecommunications services (Rurtel). This allows for the provision of basic telecommunications to rural users via wireless means when provision of fixed telecommunications services is deemed unfeasible.  The sub-band 2308-2316 MHz is assigned to Dáil TV. This service provides live footage from Irish Parliamentary discussions to interested subscribers. The usage of this spectrum is geographically limited to the Dublin area.  The Amateur Service has access to the entire 2300 – 2400 MHz band on a secondary basis, whilst services ancillary to programme making/broadcasting (SAP/SAB) utilise spectrum across the whole 2300 – 2400 MHz band. SAP/SAB assignments are made on a case by case basis, and operate on a non-interference, non-protected basis. | ComReg consulted on the future use of the 2300 – 2400 MHz band in 2009. Further information with regard to the consultation is available on the ComReg website, at: <https://www.comreg.ie/radio_spectrum/2_3_ghz_spectrum_competiton.714.html>  The outcome of the consultation was that the band 2300 – 2400 MHz band will be considered for release within Ireland following completion of CEPT/EU work. ComReg will monitor progress on this front and will be in a position to consult with stakeholders once more on the release of 2300 – 2400 MHz spectrum after work has been completed at European level. It is anticipated that the spectrum will be released for the provision of broadband wireless services.  With respect to Rurtel and Dail TV services, ComReg anticipates that these services will be allowed to continue in operation after any such spectrum release. |
| Italy | In Italy the band 2300-2400 MHz is deeply used for fixed Point to Multipoint networks for private use and also for the transportation of sound broadcasting signals. | In Italy there are no further plans with regard to the future use. |
| Latvia | 2300-2370 MHz: identified for IMT (Multipoint TDD systems for fixed and/or mobile services)  2370-2400 MHz: SAB/SAP | Short term (3-5 years):  2300-2370 MHz: IMT  2370-2400 MHz: SAB/SAP  Long term (5-10 years):  no changes or adjustment to harmonised use of the band in Europe |
| Lithuania | 1) Temporary terrestrial audio and video SAP/SAB (including ENG/OB) links.  2) Radio amateurs. | Short term plans: authorization procedure for 2310–2370 MHz radio frequency band to use for terrestrial systems capable of providing electronic communications services |
| Luxembourg | Amateur and  SAP/SAB ENG/OB | No changes planned for the time being. |
| Macedonia | FIXED, MOBILE on primary bases and Amateur, radiolocation (secondary bases) | To introduce the Broadband Wireless Systems in the band 2300-2400 MHz. |
| Malta | This band is primarily used by a number of PMSE applications (i.e. broadcasting links, wireless cameras). | No changes to the current use of this band are planned. |
| Moldova | Final stage of reallocating of existing MMDS systems in this band to 2200-2292 MHz band | The band 2300-2400 MHz is under study for possible implementation and development of IMT systems, taking into account the market requirements in the electronic communication field, CEPT Decisions and Recommendations. |
| Montenegro | SAP/SAB (incl. ENG/OB) - Cordless cameras, Portable video links, Mobile video links (mainly vehicular). | SAP/SAB will continue to work until further notice, although mobile operators in Montenegro have expressed interest for allocation of this band to mobile broadband systems. So the future plans for the usage of this band will definitely go towards this direction. |
| Netherlands | 1600 – 3.4 GHz: Ultra Wide Band, no license required  1600 – 3.4 GHz: GPR/WPR, no license required, max pwr -51.3 dBm/MHz  2200 – 2500 MHz: Analysis of construction materials, no license, max pwr -50 dBm/MHz  2300 – 2450 MHz: Mobile, license required ( public use)  2320 – 2450 MHz: Amateur service, max 120 Watt  2322 – 2347 MHz Video Link, license required, max 1 Watt e.i.r.p.  2357 – 2382 MHz Video Link, license required, max 1 Watt e.i.r.p.  2392 – 2417 MHz Video Link, license required, max 1 Watt e.i.r.p.  2400 – 2483.5 MHz – Non specific SRD, no license required, max 10 mW e.i.r.p.  2400 – 2483.5 MHz – Movement detection, no license required, max pwr 25 mW e.i.r.p  2400 – 2483.5 MHz – Wideband datasystems, no license required, max pwr 100mW e.i.r.p.  2400 – 2500 MHz – ISM band, no license required. | • Planning: Medical body Area Networks.  • Currently: ENG/OB: licence based  • Currently: Amateur radio  • Currently: Public use |
| Norway | Fixed and Mobile Service licences are valid until 31-12-2019 (land) and until 31-12-2021 (offshore)  2300 MHz – 2320 MHz (offshore) – technology neutral  2301 MHz – 2323 MHz (land) – technology neutral  2327 MHz – 2390 MHz general authorisation for usage of mobile video links (max. 2W e.i.r.p.) – PMSE  2336 MHz – 2386 MHz fixed service (ETSI EN 301751& ETSI EN 301753) | Short term: no change  Long term: under evaluation – most probably will be used for mobile services, depending on market demand and international trends |
| Poland | According to National Frequency Allocation Table the band 2300-2400 MHz is allocated as follows:   FIXED (civil-military),   MOBILE (civil-military),   Radiolocation (military),   Amateur (civil).  The frequency band is divided into two parts:   2300-2350 MHz for military purposes,   2350-2400 MHz for civil applications.  Currently there are no civil applications in the above mentioned sub-band. | In the near future Poland is going to take measures to re-farm the 2300-2400 MHz band in order to allow only civil applications in the whole band and to implement incoming spectrum regulatory framework for mobile broadband in the 2300-2400 MHz band. |
| Portugal | SAP/SAB video links (wireless cameras) and amateur. | To keep the current use of the band. No other use is envisaged given the limited alternative frequency bands available for the SAP/SAB purposes. |
| Russian Federation | In Russia the frequency band 2300-2400 MHz is currently allocated and used by:  • Fixed service  (approx. 100 radio relay stations)  • Mobile service  (Trial LTE TDD networks are deployed in several regions of the Russian territory. WiMax networks can also be deployed.)  • Radiolocation service  • Space operation service in the space-to-Earth direction (2341-2381 MHz)  • Amateur service on secondary basis (2320-2320,15 MHz) | • Mobile service  (In 2012 commercial launch of LTE TDD systems and their modifications are expected)  • Fixed service (existing radio relay stations will remain operational up to 2019)  • Radiolocation service  • Space operation service in the space-to-Earth direction (2341-2381 MHz)  • Amateur service on secondary basis (2320-2320,15 MHz) |
| Slovak Republic | This band The Slovak Republic has used by civil mobile SAP/SAB a ENG/OB links and military fixed service. | At present time we do not plan changes the use of this band. |
| Slovenia | SAP/SAB and ENG/OB: wireless cameras, according to ERC/REC 25-10;  Point to point video links according to ERC/REC 25-10;  Radioamater service;  Short range devices; | Short, medium and long term plans:  In case of new CEPT recommendations adoption if needed. |
| Spain | AUDIO AND VIDEO SAP/SAB LINKS | THERE IS NOT ANY PLAN TO CHANGE IT |
| Sweden | Mostly unused spectrum | We intend to assign the 2.3 GHz frequency as a technology and service-neutral band. |
| Switzerland | 2302-2322 MHz: Aeronautical telemetry systems (mil) (primary)  2300 - 2400 MHz: SAP/SAB and ENG/OB: Cordless cameras according to the following radiointerfaces:  RIR0203-16 (see Annex 1)  RIR0203-17 (see Annex 2)  RIR0203-18 (see Annex 3)  RIR0203-11 (see Annex 4)  2300 - 2400 MHz: Amateur according to the following radiointerface:  RIR1101-15 (see Annex 5)  (max. transmit power:100 W conducted)  (OFCOM authorisation is required for the the frequency bands 2300 2308 MHz and 2312 2450 MHz.) | Short term plan: No change (important frequency range for Aeronautical telemetry systems (mil) and cordless cameras).  Medium term plan: No change (important frequency range for Aeronautical telemetry systems (mil) and cordless cameras).  Long term plan  (>10 Years): - Refarming of Aeronautical telemetry systems (mil) in other frequency band,  - SAP/SAB and ENG/OB: No change,  - Amateur: No change.  - 2360 2390 MHz and 2390 2400 MHz: Expecting (worldwide) harmonised frequency bands for Medical Body Area  Networks (MBAN). |
| Turkey | Fixed Link | If needed in the future, the band can also be planned for other systems. |
| Ukraine | Currently the radio frequency band 2300-2400 MHz is used by radio facilities of fixed and mobile services for “broadband radio access” and “multi-service radio access” technologies, mainly by distribution systems which parameters are in line with IEEE 802.16-2009 and EN 300 749 standards.  The radio frequency band is used on the basis of licenses and permissions for REFs operation.  At this time there are about one hundred frequency assignments in approximately a half of Ukrainian regions.  Some parts of this band is also used by REFs of Ukrainian special users. | The short-term plans regarding the 2300 – 2400 MHz frequency band are predetermined by the licenses issued (5 in total). Among them:  - 2 national licenses (for “multi-service radio access” and “broadband radio access” technologies (licenses are valid up to 2016 and 2019, respectively) and;  - 3 regional licenses (only for “multi-service radio access” technology in the frequency band 2325 – 2375 MHz (licenses are valid up to 2012, 2016 and 2021). |
| United Kingdom | The UK MOD (Ministry of Defence) is the manager and current user of the spectrum within 2310-2400 MHz in the UK. It is an extensively used and congested band that is primarily used for airborne telemetry and data down links by the military and Emergency Services (the latter are sharers). UK MOD intends to rationalise its use in this band and transfer around 40 MHz to non-military users by December 2013. | UK MOD is conducting a long term spectrum efficiency programme that will reduce the amount of spectrum that it uses. As part of this programme UK MOD intends to release 160 MHz of spectrum from within its holdings. This supports the UK government’s target of releasing up 500 MHz of spectrum below 5GHz by 2020.  Whilst UK MOD will continue to use some spectrum from the 2310 – 2400 MHz band it will release 40 MHz of spectrum to the market. Working Groups have been established that will report on the feasibility of refarming / retuning existing military use out of the 40 MHz to assist with the spectrum release.  UK Defence intends to retain 2310-2350 and 2390-2400 only for its continued use and release 2350 – 2390 MHz to the market by Dec 2013. |