

18 September 2008

Ref. BAJ-MG/OL/2008-048

Mr. George Komodromos
Electronic Communications Department
Fax No. +357 22321925,
Email: gkomodromos@mcw.gov.cy

Dear Sir,

Public Consultation H.E.13/08: Authorizing Use of the Radiofrequency Band 1790 – 1800 MHz

We refer to your invitation for comments on the above subject and, prior to responding directly to your questions, we would like to place on record the situation as it currently stands at European level regarding the use of the so called "flexible zones", commonly referred to as WAPECS (Wireless Access Protocol for Electronic Communication Systems).

The importance of the flexible zone was emphasized by the Commission¹ as well as by the member states² and the Commission issued on 5 July 2006 a Mandate³ to the CEPT in which it recognizes that "the success of this approach will now depend on an optimal implementation on the basis of concrete measures at the level of specific frequency bands". In particular, CEPT was mandated to develop the least restrictive technical conditions in the frequency bands addressed in the context of WAPECS, which were:

- 470-862 MHz
- 880-915 MHz / 925-960 MHz (900 MHz bands)
- 1710-1785 MHz / 1805-1880 MHz (1800 MHz bands)
- 1900-1980 MHz / 2010-2025 MHz / 2110-2170 MHz (2 GHz bands)
- 2500-2690 MHz
- 3.4-3.8 GHz

The particular instructions of the Commission were:

1. To review existing technical conditions attached to the rights of use of these frequency bands.
2. To the extent possible, to identify future common and minimal (i.e. least restrictive) technical conditions across frequency bands listed above,
3. To study and confirm the technical feasibility and support for operating technologies other than GSM in the bands currently used for 2nd generation mobile services and to develop a channelling arrangement including all technical elements needed in order to facilitate a common approach within the Community
4. If time and resources allow, to look at the band 1800-1805 MHz (upper TFTS band) in the context of this Mandate.

ECC/CEPT replied on 1 December 2006 to mandates 1 and 3 with an interim report⁴, whose summary is included in the covering letter, attached as **Annex 1**, which states the following:

1. As far as mandate 1 is concerned, there are considerable differences between the bands under study. At this stage, it seems that of the previous studies carried out within the ECC, studies related to the 3.5GHz band could be considered to be furthest advanced in relation to providing flexibility in line with the WAPECS

1 Communication on "A market-based approach to spectrum management in the EU", COM(2005)400

2 RSPG Opinion on Wireless Access Policy for Electronic Communications Services (WAPECS)

3 Mandate to CEPT, DG INFSO/B4, 5th July 2006

4 RSCOM06-99, dated 1st December 2006, ECC Interim Report in response to the EC Mandate on WAPECS

2. As far as mandate 1 is concerned, it is natural that the IMT-2000/UMTS channelling arrangements for these bands will follow the existing GSM channelling arrangement. 3GPP has already taken into account this constraint in developing the equipment specification.....

On 21 December 2007 CEPT issued its final report⁵ No. 19, whose official summary is attached as **Annex 2**. The following important points of the report are stressed:

- 1 The replies to mandates 1 and 3 that were contained in the interim report are reconfirmed.
- 2 As far as mandate 2, on which the report is basically concentrated, the following are worth mentioning:
 - 2.1 The 900 MHz; 1800 MHz and 2 GHz bands have been treated with lower priority.
 - 2.2 The Block Edge Masks (BEM)⁶ approach has been selected in order to derive the least restrictive technical conditions
 - 2.3 A universal BEM mask based on assumptions that are more or less reliable cannot substitute a compatibility study that is based on real system parameters and system scenarios⁷
 - 2.4 All frequency bands addressed are suitable from a technical perspective for the introduction of flexibility.
 - 2.5 Technical conditions are defined only for the frequency bands 3.4-3.8 GHz και 2500-2690 MHz.
 - 2.6 All other bands are still under study and will need further consideration
 - 2.7 A reference WAPECS system is presented in the conclusions of report No. 19 (**Annex 3**), in which the operating scenarios and the minimum technical conditions are stated against each band.
- 3 As far as mandate 4 is concerned, it is stated that it has not been possible to investigate the band 1800-1805 MHz in the time available.
- 4 Other activities on the flexible use of the spectrum outside of the scope of the EC mandate to CEPT are ongoing. The frequency bands identified for study were 862- 870 MHz, 1785-1805 MHz and 57-59 GHz, with the aim of testing the principle of flexible use of spectrum.

The European Commission issued on 21st May 2008 και on 13th June 2008 its Decisions on the harmonisation of the 3.400-3.800 MHz and 2.500-2.690 MHz frequency bands respectively, by basically adopting the CEPT recommendations and obliging the member states to implement them within 6 months, with the exception of the frequency band 3.600-3.800 MHz, whose implementation is specified by 1st January 2012. Furthermore, for the frequency band 2.500-2.690 MHz transitional periods may be allowed following a request, but it is not known whether Cyprus has made such a request.

From all the above, it is evident that at European level, the frequency bands 3.400-3.800 MHz and 2.500-2.690 MHz have been harmonised for use as flexible zones, whilst the remaining bands, including the band 1.790 – 1.800 MHz, reviewed under this public consultation, are under study "with the aim of testing the principle of flexible use of spectrum".

Referring now to the public consultation document and taking all the above into consideration, we reply as follows:

Question E2.1: Do you concur that the use of the 1.790 – 1.800 MHz band be based on the principles of technological and service neutrality?

Reply E2.1:

⁵ RSCOM07-94 Final, dated 7 January 2008, Final Report from CEPT in response to the EC mandate on WAPECS

⁶ Block edge masks control interference between radio systems by defining a power/frequency envelope within which radio transmitter emissions must remain. This is done by specifying a maximum in-block transmission power in addition to out of block or out of band powers.

⁷ Paragraph 5.6.1, page 45 of CEPT report No.19

⁸ Commission Decision of 21 May 2008 on the harmonisation of the 3 400-3 800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community (2008/411/EC)

⁹ Commission Decision of 13 June 2008 on the harmonisation of the 2 500-2 690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community (2008/477/EC)

As stated above, the particular band, although outside the scope of the EC mandate, is under study at CEPT level with the aim of testing the principle of flexible use of spectrum. We believe that Cyprus, being a member of the European Union, should abide by the European decisions and avoid the utilisation of spectrum at a national level for a particular cause other than that decided at the European level. The European Commission has already decided to use the 2.500 – 2.690 MHz and 3.400 – 3.600 MHz bands as flexible zones and we believe that we should apply this decision in Cyprus the soonest. Consequently, we disagree with the proposed use of the 1.790 – 1.800 MHz to be based on the principles of technological and service neutrality, waiting for a decision at European level to this respect.

Question E2.2: Do you agree with the proposed terms and obligations for the use of the 1.790 – 1.800 MHz band?

Reply E2.2:

We find the proposed terms unjust and not according to standard business practice. In particular in 2nd bullet, page 4, we believe that an authorised business that has legally secured such an authorisation is entitled to protection by the Director against interference from other networks, regardless of whether these networks operate legally or not. It is the duty of the Director to provide such a protection; otherwise, if the Director feels insecure in setting the necessary criteria to ensure interoperability between networks, then the Director should avoid licensing such frequency bands. Furthermore in the last bullet, page 5, we believe that it is again unjust for a business to pay authorisation fees for a license, whose terms may be modified arbitrarily by the Director “*in view of future decisions or recommendations by the European Commission and the CEPT*”. If with this statement the Director expects significant future changes at the European level regarding usage of this band, then we believe that he should wait for them and not rush into unnecessary adventures.

Question E2.3: Do you consider that the external security bands and the relevant remaining provisions ensure the normal operation of the GSM systems operating in the nearby bands?

Reply E2.3:

We disagree with the use of the proposed external security bands. Firstly, CEPT and the European Commission are still unable to set the minimum inter-operability criteria for the band, and consider this band under study. Secondly, we believe that the purpose of a public consultation is definitely not that of a scientific study group, having an expertise level higher than that of CEPT. Finally, we find the proposed allocation of the 1.800 – 1.805 MHz band as an external security band a probable waste of national resources and against the policy of the Commission, since the Commission has requested CEPT to study this particular band for WAPECS purposes.

Question E2.4: Do you concur with the proposed coordination framework with systems operating in Cyprus as well as with radio communication systems outside Cyprus?

Reply E2.4:

We believe that, as stated in our previous replies, it is the duty of the Director to ensure interoperability of a legally authorised business with all other systems, both national and international. Consequently, all relevant costs should be borne by the Director.

Question E2.5: Do you believe that there should be a limit to the Equivalent Isotropically Radiated Power (EIRP)? If yes, which do you consider should be the maximum limit of the EIRP and why?

Reply E2.5:

We believe that such technical parameters should not be the subject of a public consultation but the outcome of an expert study group at European level. The CEPT has decided to continue the study of such technical criteria and consequently we do not consider that the Director should rely on a public consultation response to finalize his opinion.

Question E2.6: Comments are sought in relation to the proposed approach for the wireless microphones. Do you concur that the use of should not be allowed in the 1.790 – 1800 MHz band without securing authorization?

Reply E2.6:

In paragraph 2, page 4 of the consultation document, it is stated that “according to CEPT recommendation ERC/REC/70-03 wireless microphones operating in the 1.790 – 1800 MHz bandare considered as short range apparatus and should be excluded from the obligation to secure special authorization”. We believe that, although recommendations are not obligatory, they should be complied with, unless it is absolutely impossible to do so. In addition, it is practically impossible to control the operation of short range apparatus. Consequently we disagree with the proposal and believe that wireless microphones should be allowed to operate in the 1.790 – 1800 MHz band.

Question E3.1: Comments are sought in relation to the number of individual rights of use of radio frequencies. Do you believe that the number of individual rights of use to be assigned should be one, two, or more?

Reply E3.1:

The number of individual rights of use to be assigned will depend on the anticipated use of each band. If more than one individual right of use is assigned per band of flexible use, provision should be made for intra band security zones. For the band in question we recommend that no individual rights of use are assigned, for the reasons stated in this response.

Question E3.2: Comments are sought in relation to the needs of your business in radio spectrum. You are requested to state the spectrum width needed to provide your services.

Reply E3.2:

We estimate that we will need about 25 MHz to provide our planned services. However we do not intend to use frequency band that have not been harmonised at European level for flexible use.

Question E3.3: Should obligations for geographical coverage be included and, if yes, which and why?

Reply E3.3:

We agree that the individual rights of use to be assigned should be for the whole territory of Cyprus. Furthermore, we believe that the same geographical coverage obligations (50% in 2 years and 75% in 4 years) that have been imposed upon the 2nd GSM operator are also applied in this case. This is justifiable by the fact that under “flexible services” mobile services may also

be provided. In addition, it is the duty of the Director to ensure optimum use of the assigned spectrum, and not just to receive payment for its assignment.

Question E3.4: Comments are sought in relation to the duration of the authorizations.

Reply E3.4:

We believe that the authorizations should have duration of at least 15 years to ensure the adequate return on the investment required.

Question E3.5: Comments are sought in relation to the intention to terminate the individual right of use in case that the spectrum is not used within a set time period.

Reply E3.5:

We believe that it is impossible to specify and control the "usage" of spectrum. The best approach is to ensure geographical coverage within a set time period, as we propose in our reply 3.3.

Question E3.6: Comments are sought in relation to the collocation of antennas and the joint use of facilities.

Reply E3.6:

We agree with the principles and advantages of collocation, however we find unnecessary and time consuming the proposal to communicate to the "responsible authorities" every request for collocation. Organisations with SMP, once regulated, are obliged to provide collocation. All other collocation cases should be market driven (demand, cost and time). Furthermore, it should be noted that GSM antenna masts in towns usually cannot accommodate additional antennas.

Question E3.7: Comments are sought in relation to the type of terms and/or special obligations by virtue of a General Authorization in case of use of the band for operation of electronic communication networks and/or for provision of electronic communication services.

Reply E3.7:

In the 3rd paragraph of point 3.6, page 8, it is stated that terms and/or special obligations will be imposed by the Commissioner if and when the type of networks/systems to be used for the provision of electronic communication services is decided. Thus, further to our comments in Replies 2.2 and 2.3 above, it is expected by an applicant to participate in a competitive bidding process without knowing a priori the terms and conditions applicable. This is again another example of unjust practice, against the standard norms of business, and definitely against the flexibility that these bands claim to offer. We believe that the Commissioner should first define the terms and/or special obligations under which such flexible networks operate and then proceed with the assignment procedures of the corresponding spectrum.

Question E4.1: Do you agree with the proposed auction methodology?

Reply E4.1:

We have no comments in this respect.

Question E4.2: Comments are sought in relation to the starting price

Reply E4.2:

The starting price should be low enough so as not to exclude those interested, considering the market saturation and high enough so as to discourage those that do have a genuine interest.

Question E4.3: Comments are sought in relation to possible additional criteria that the applicants should fulfill

Reply E4.3:

Regulation 22, point (γ) of the Radiocommunications Regulations 2002 up to No. 2 of 2004 (Competition and Negotiation Procedures) states that an applicant is considered suitable for a right of use if it does not hold a "similar" right of use. The public consultation document has excluded this condition in its proposal for the minimum criteria without justification. We believe that this was correctly done, as nobody holds at present rights of use for a flexible zone. However, existing holders of right of use for frequency bands with specific applications that have Significant Market Power in the particular corresponding service will affect competition and should not be allowed to participate. This is a firm requirement of the same point in the referred Regulation. Furthermore, any government or government controlled organisation should be excluded from the auction process, as it may be argued that it participates simply to drive prices up.

Question E4.4: Comments are sought in relation to the selection criteria of applicants to participate in the auction process.

Reply E4.4:

We have no comments to this respect.

Question ΓE.1: Which is the possible market that you wish to serve through your networks / systems (large – small/medium enterprises, home users) and which services do you intend to provide?

Reply ΓE.1:

Through the flexible bands we intend to serve the fixed/nomadic/mobile market by providing a wide portfolio of services.

Question ΓE.2: Comment on any other subject item (for which no specific comments are sought) substantiating your position.

Reply ΓE.2:

The following questions reasonably emerge when reading the public consultation paper and the proposal included therein:

1. Why does a public consultation take place for the assignment of a frequency band which at this particular moment is still under study at European level and is being examined for the particular application at lower priority compared to other bands?
2. Why is the band 1.800 – 1.805 MHz proposed as External Security Zone, when the European Commission has specifically requested that this band be studied for WAPECS purposes?

3. Why one of the frequency bands already harmonised for WAPECS use by the European Commission was not selected instead?
4. Why there is no reference in the public consultation document to the CEPT and EC reports and decisions and in particular to the WAPECS reference system of CEPT report 19?
5. Why are proposals requested within the framework of a public consultation in Cyprus for the technical criteria that should apply in order to safeguard the uninterrupted service of systems at neighbouring bands, at the moment when at European level it is stated that "*A universal BEM mask based on assumptions that are more or less reliable cannot substitute a compatibility study that is based on real system parameters and system scenarios*"?

All the above questions remain unanswered in the public consultation document and lead to reasonable doubts as to whether it is attempted through a public consultation process to bypass the European norms. As stated in our replies to the relevant questions, MTN is not against authorising the use of flexible bands. However, this should be done properly, by following the European recommendations and Decisions and not through unilateral actions. Such unilateral actions may lead the licensees to unnecessary adventures and risks and endanger the quality of service, existing and future.

We remain at your disposal for any additional information or clarification.

Yours faithfully,

Bassel Jamaledine
Chief Executive Officer

Dear RSC chairman

I have pleasure to provide the attached documents as the interim response to the third task of the ECC under the EC Mandate on WAPECS¹.

Attachment 1 provides a summary of the work completed so far which corresponds to item 1 of the order and schedule of the mandate: the review of the existing technical conditions attached to the rights of use of the frequency bands identified in the WAPECS mandate.

It should be noted that this summary shows that there are considerable differences between the bands under study. At this stage, it seems that of the previous studies carried out within the ECC, studies related to the 3.5GHz band could be considered to be furthest advanced in relation to providing flexibility in line with the WAPECS mandate.

Attachment 2 provides the interim report on task no. 3 of the Mandate to CEPT. The document highlights that IMT-2000/UMTS networks will be progressively deployed in the frequency bands and geographical areas currently used by GSM900 and GSM1800 networks. It is natural that the IMT-2000/UMTS channelling arrangements for these bands will follow the existing GSM channelling arrangement. 3GPP has already taken into account this constraint in developing the equipment specification for the GSM bands, therefore, CEPT does not see the need to take further action regarding channelling arrangements, in order to facilitate a common approach within the Community.

The next steps to be taken will be focussed on items 2 and 3 of the order and schedule, the identification of common and minimal technical conditions, and support for introducing technologies other than GSM in the bands currently used for 2G services. If time permits, item 4, the band 1800 – 1805 MHz, will be addressed; however it must be stressed that the timescale associated with the higher priority items is extremely challenging.

The ECC will continue its studies and will be happy to take into account any comments in response to this interim response.

Best regards

Chris van Diepenbeek
Chairman ECC



1. Executive Summary

This report provides the response to the EC mandate to CEPT "To develop least restrictive technical conditions for frequency bands addressed in the context of WAPECS" [1].

The Mandate addressed the following frequency bands:

- 470-862 MHz;
- 880-915 MHz / 925-960 MHz (900 MHz bands);
- 1710-1785 MHz / 1805-1880 MHz (1800 MHz bands);
- 1900-1980 MHz / 2010-2025 MHz / 2110-2170 MHz (2 GHz bands);
- 2500-2690 MHz;
- 3.4-3.8 GHz

With respect to the frequency bands listed above, the Mandate requests four areas of investigation which have been completed as follows:

1. review existing technical conditions attached to the rights of use of these frequency bands taking into account the results of the questionnaire to administrations expected by 1 September 2006 and which will be provided to CEPT upon availability;

This task was completed and the results were submitted to the EC in the interim response to the mandate, which was delivered according to the schedule.

2. to the extent possible, to identify future common and minimal (i.e. least restrictive) technical conditions across frequency bands listed above, in the spirit of Article 1 of the Authorisation Directive, to become ultimately applicable throughout the Community and to justify any deviations from the long term policy goals contained in the RSPG opinion on WAPECS;

This final CEPT Report focuses on this part of the mandate. Due to the complexity of the given task; the investigation has been conducted in two parallel work streams:

1) A study to determine some general methodologies for deriving least restrictive technical conditions, with examples of how the Block Edge Mask (BEM) methodology can be used on its own or as a basis to derive examples of least restrictive technical conditions using other more innovative methodologies; and

2) A band by band analysis which applies one of the methodologies (BEM) to give agreed technical parameters or examples for each WAPECS band.

Establishing possible technical conditions for introducing WAPECS in subject bands requires producing different sets of assumptions and co-existence studies, tailored to specific situation in each of the WAPECS band. CEPT has chosen to follow a step-by-step strategy and accordingly decided to address the subject bands with the following priority:

- The 3.4-3.8 GHz band and the 2.5-2.69 GHz band have been given the highest priority;
- The 900 MHz; 1800 MHz and 2 GHz bands have been treated with lower priority;
- Regarding the band 470-862 MHz, it seemed logical to postpone studies related to this mandate for this band pending finalisation of "Digital dividend" studies (subject of a separate EC Mandate).



Based on the analysis presented in this Report, the BEM approach has been chosen for the description of technical conditions in response to task 2 of the Mandate, noting that it is the most developed concept for the time being. Other models are presented in the report and may become relevant in the future for other bands.

CEPT believes that all the frequency bands addressed in this response to the Mandate should be suitable from a technical perspective for the introduction of flexibility.

Taking into account the prioritisation described above and the status of studies, CEPT proposals concerning the various bands are the following:

1. A BEM approach is proposed in the 3.4-3.8 GHz, and the relevant technical conditions are described in section 5.3 and Annex 1 of this report with supplementary information in Annexes 2 and 3 ;
2. Concerning the 2.5-2.69 GHz band, the technical conditions are contained in section 5.4 and Annex 4;
3. Detailed investigation of WAPECS in the remaining bands addressed by this Mandate will need further consideration. Any real-life experience that could be gathered from the introduction of WAPECS in the two bands mentioned above may be beneficial for this further work.

CEPT is willing to continue studying the issue of introduction of WAPECS in the future, e.g. with reference to possible follow-up mandate from the EC.

The technical parameters shall be applied as an essential component of conditions necessary to ensure co-existence in the absence of bilateral or multilateral agreements¹ between operators of networks in adjacent blocks and areas (i.e. frequency and geography), without precluding less stringent technical parameters if agreed among the operators of such networks

In the process of introducing WAPECS, circumstances will evolve and the conclusions and recommendations in this report need to be kept under review.

3. noting that results are urgently needed for the 2nd generation mobile bands, study and confirm the technical feasibility and support for operating technologies other than GSM in the bands currently used for 2nd generation mobile services and develop a channelling arrangement including all technical elements needed in order to facilitate a common approach within the Community

This task was completed and the results were submitted to the EC in the interim response to the mandate, which was delivered according to the schedule.

4. if time and resources allow, look at the band 1800-1805 MHz (upper TFTS band) in the context of this Mandate.

It has not been possible to investigate this band in the time available.

Other activities on the flexible use of the spectrum outside of the scope of the EC mandate to CEPT are ongoing. The frequency bands identified for study were 862-

¹ It is recognised that there will be cases where co-operation will still be needed.



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870 MHz, 1785-1805 MHz and 57-59 GHz, with the aim of testing the principle of flexible use of spectrum.



6. Conclusions

All frequency bands listed in the order and schedule of the mandate have been addressed in the preparation of this response, with the exception of the band 1800 – 1805 MHz (which was identified for study, subject to availability of time and resources). A prioritisation of the bands in terms of the work load has been undertaken, following consultation with the EC and ETSI, recognising that

- The 3.4-3.8 GHz band and the 2.5-2.69 GHz band have been given the highest priority, recognising that they are becoming available for use in the near future in many Member States;
- The 900 MHz, 1800 MHz and 2 GHz bands have been treated with lower priority, recognising that they have recently been addressed by the RSC in the context of the draft Commission Decision;
- There is another EC mandate on digital dividend addressing the band 470-862 MHz [10]. This report applies the general methodology developed in the WAPECS context to this band. However, in order to conclude on suitable minimal (least restrictive) technical conditions for WAPECS systems in this band, further studies should be carried out within CEPT, taking into consideration the outcome of the EC Mandate on digital dividend.

It should be noted that the prioritisation is not based on the relevance of introducing flexibility into these bands.

CEPT believes that all the frequency bands addressed in this response to the Mandate should be suitable from a technical perspective for the introduction of flexibility.

Based on the current analysis the BEM concept/model has been chosen for the description of technical conditions in response to task 2 of the Mandate.

Block edge masks apply to the entire block of spectrum that is assigned to an operator, irrespective of the number of channels occupied by the chosen technology that the operator may deploy in their block. These masks are intended to form part of the authorisation regime for spectrum usage. They cover both emissions within the block of spectrum (i.e. in-block power) as well as emissions outside the block (i.e. Out-of-block emission).

BEMs have been included in annex 1 for the 3.4-3.8 GHz band and in annex 4 for the 2.5-2.69 GHz band. Other bands are still under study and will need further consideration.

It should be noted that the approach taken so far is to a large extent based on the existing requirements for protection of incumbent and planned services/technologies and therefore the degree of added flexibility may be limited. It may be desirable to formulate a longer-term vision for each band covered by the WAPECS concept. A possible approach identified is that this longer-term vision could be based on an initial green field-analysis of what could be achieved if the initial assumption is that there are no legacy restrictions in each of the bands being studied. This could allow for a more unified approach independent of the bands and maximising the flexibility of use.

On the other hand, taking into account the concept of reference WAPECS systems (see section 4.3), this report describes a realistic degree of flexibility which could be



implemented based on the minimal technical conditions described in this report. It may be reasonable for administrations to expect future systems and evolutions of existing systems to have spectrum masks that are compatible with these conditions, or at least that these systems are adaptable so that they can be.

Band	Scenario	Reference WAPECS system			Conclusion
		Antenna gain assumption	Deployment assumption	Channel / Duplex arrangements assumed	
3.4-3.8 GHz	Fixed, Mobile, Nomadic P-MP systems	From 0 to 9 dBi for TS From 9 to 17 dBi for BS	Cell coverage of 10km	The BEM is not dependant on the channel/duplex x arrangements	BEM for BS (In band EIRP and Out of block emission power) TS : In band EIRP and Out of block emission limit given by the relevant HS
	Fixed, Nomadic, Mobile	17dBi for BS and 0dBi for TS	- Macro Cell - Micro Cell - Pico cell	TDD/FDD partitioning. Duplex spacing based on ECC DEC(05)05. Block sizes assumed to be multiples of 5MHz.	2 BEMs for BS (in band and out-of block EIRP): one for 'unrestricted' block and one for 'restricted' block placed within 5 MHz frequency separation between FDD UL and TDD or two TDD blocks TS: In band EIRP or TRP depending of the TS as well as out-of-block emission limit whose part of it may be used for the development of HS
2500-2690 MHz					
2 GHz	Mobile		- Macro Cell - Micro Cell - Pico cell	TDD/FDD	development of HS UMTS/IMT-2000 spectrum emission mask
1800 MHz	Mobile		- Macro Cell - Micro Cell - Pico cell	FDD	List of systems provided by EC decision [8]
900 MHz	Mobile		- Macro Cell - Micro Cell - Pico cell	FDD	List of systems provided by EC decision [8]



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470-862 MHz

Unidirectional high power networks,
Unidirectional medium to low power networks,
Bidirectional low power networks

To be further studied in the light of the outcome of the EC Mandate on digital dividend

Table 7 : Overview of the conclusions

Note: for all frequency bands additional measures may be needed to address cross border interference scenarios (e.g. PFD levels at the border)