

Flexibility and the Transition Period at RRC-06

1 Introduction

This document reviews the outcome of the European Common Proposals (ECPs) proposing flexibility in the future use of broadcasting spectrum released as a result of switching from analogue to digital “the digital dividend”; and the ECP proposing an early end to the “transition period”, i.e. the period during which existing and planned analogue assignments will continue to be used and protected by the new digital plan.

2 Background

CEPT proposed an ECP to improve flexibility in the future use of broadcasting spectrum released as a result of switching from analogue to digital “the digital dividend”. The intention of the ECP was that this protection should be the same as that afforded by the Plan for notified assignments to T-DAB or DVB-T, providing the intended use operated within the spectrum mask of the Plan entry. Additionally most CEPT countries wished that such alternative use be possible without unnecessary delays and regulatory burden.

Some European countries may wish to license part of this spectrum on a technology neutral basis. It would be necessary to provide assurance before licensing that the operation of any intended use would be given a degree of protection. This would also facilitate spectrum trading where it is expected to be introduced.

This paper assesses how the expected flexibility has been achieved in the Agreement adopted by RRC-06. It is implemented to a large extent by the negotiated text of Article 5.1.3 in the Agreement, but also on other provisions in the Agreement, and in particular the right to notify assignments under Article 11 of the Radio Regulations, and the right to bring into use an assignment without all the required agreements.

Early in the Conference it became necessary to counter suggestions that the ECP was not in conformity with the Radio Regulations. The Constitution and Convention specify that the decisions of a regional radiocommunication conference shall in all circumstances be in conformity with the Radio Regulations. It was therefore impossible to argue against inclusion of wording to this effect. Similarly, the obligation to notify any actual use in situations where interference may occur to the services of other administrations, and where protection is required, as indicated in Article 11, could not be argued against.

In addition to negotiations in an inter-regional group, bilateral negotiations were held between CEPT and RCC, and between CEPT and the African countries. This showed a high degree of common purpose in creating greater flexibility for the future use of the Planned bands and the Radio Regulations generally, which facilitated the adoption of the compromise.

The ECP on the transition period proposed that it should end no later than 2012. The definition of the transition period used was that adopted at the RRC-04 i.e. the period during which existing and planned analogue assignments will continue to be used and

protected by the new digital plan. After this period, analogue assignments may continue to be used provided that:

- protection is afforded to the new digital plan and its modifications; and
- no protection is claimed from the new digital plan and its modifications.

The date in the ECP was brought forward from 2015 to 2012 at the last CEPT preparatory meeting as a negotiating position to achieve a date as close as possible to 2012, namely 2015.

The four other regional groups proposed:

RCC: 2015
 Africa: option 1 2015 UHF, 2020 VHF
 Option 2 2020
 Arab Group positions varied from 2025 (Syria) to 2012 (Gulf States)

At the start of the conference there was agreement in Plenary that there should be a single date for the whole planning area. This moved Africa to Option 2.

The Plenary also agreed to discuss this issue and the spectrum mask issue in an informal group of regional representatives chaired by the conference chairman. CEPT was represented by the WG-RRC chairman and vice chairmen.

The key to success was clearly an agreement with Africa and three bilateral meetings were held with African representatives. CEPT offered three options:

1. Europe and Africa agree 2015
2. Europe 2012, Africa 2020
3. Europe 2015, Africa 2015 UHF; 2020 VHF

Option 1 would avoid possible difficulties associated at the interface Europe and Africa if each had different dates. It avoids the continuation of the digital divide. The date is appropriate as it related to the Millennium Development Goals and the date for the next WSIS. It would allow for the possible adoption of a Resolution at PP-06 on action to assist Africa with early switch-off.

Option 2 allows both regions to meet their objectives and the balance of opinion on the advantages and disadvantages of early and late dates. It would require the countries at the interface of both regions to reach agreement on the implementation dates in the border regions.

Option 3 combines the advantages of Options 1 and 2 but with the need for agreement again at the borders. However, since this is now only related to VHF this problem would be much less severe.

3 Alternative Broadcasting applications

Article 5.1.3 of the Agreement gives the flexibility of using a T-DAB or DVB-T Plan entry for alternative broadcasting applications. The technical characteristics of the

alternative use would need to be notified to the ITU and provided the spectrum mask is within that already entered into the Plan, the assignment would be entered into the MIFR with full rights as is afforded to T-DAB or DVB-T. This would allow for example, a T-DAB assignment to be used for television (T-DMB), a DVB-T assignment to be used for T-DAB, DVB-H, HDTV or various possible future broadcasting uses.

4 Alternative Fixed applications in the band 790-862 MHz

In addition, Section 5.1.3 of Article 5 of the Agreement allows the Plan entries to be used for Fixed applications in the band 790-862 MHz. Again, the technical characteristics of the alternative use would need to be notified to the ITU and provided the spectrum mask is within that already entered into the Plan, the assignment would be entered into the MIFR with full rights as is afforded to T-DAB or DVB-T. This would allow for example, WiMax applications, and any other future fixed applications that might be envisaged.

5 Alternative Mobile in some countries in the band 790-862 MHz

In addition, Section 5.1.3 of Article 5 of the Agreement allows the Plan entries to be used by the countries in footnote **RR 5.316** of the Radio Regulations, for mobile, except aeronautical mobile, in the bands 790-830 MHz and/or 830-862 MHz. Again, the technical characteristics of the alternative use would need to be notified to the ITU and provided the spectrum mask is within that already entered into the Plan, the assignment would be entered into the MIFR with full rights as is afforded to T-DAB or DVB-T. This could allow for example IMT-2000 applications, although the calculation of the spectrum mask would be complicated due to the mobility of the up-link if intended to use the same band for the up-link.

6 Alternative Mobile and Fixed applications in the band 470-862 MHz

Should Article 5 of the Radio Regulations (RRs) be amended at a future WRC e.g. to introduce primary allocations to the Land Mobile and Fixed services in the band 470-862 MHz, Section 5.1.3 of Article 5 of the agreement would provide complete flexibility, as described in Section 3. Since such a change in RR Article 5 would align Region 1 with Region 3, it should be possible for Europe to succeed in making this amendment at WRC-10. It is recommended CEPT makes such a proposal.

7 Alternative land mobile use in some countries in the bands 470-790 MHz and 790-862 MHz where it has a secondary allocation

An alternative application in a service which has secondary status in RR Article 5 in the Planned Bands may be notified under Article 11 of the RR. An assignment in a secondary service is constrained not to cause harmful interference to, nor claim protection from, primary services operating in conformity with the RR and the Agreement. These conditions apply to existing **and new** primary assignments in other countries.

However, provided the spectrum mask of the alternative use is within that of the corresponding Plan entry, it will not cause interference in excess of that which has been agreed with the other administrations at RRC-06. Furthermore it is possible to reach agreement on different levels of interference through the Article 11 coordination procedures.

In addition it will benefit from the protection associated to that of the corresponding Plan entry, i.e. the maximum incoming interference (field strength) will not exceed that which has been agreed for the corresponding Plan entry.

However if it suffers unacceptable interference from broadcasting or other primary service, it will not be possible to appeal to the BR since this assignment relates to a secondary service, and therefore cannot claim protection from a broadcasting or other primary service interferer.

8 Alternative applications in the Fixed and Mobile service in the Planned Bands where there is no allocation to these services

This would only apply to countries where the service is not allocated in RR Article 5 either as a primary or secondary service.

An alternative application in a service not allocated in Article 5 of the RR may be notified under Article 11 of the RR, subject not to cause harmful interference to, nor claim protection from services operating in conformity with the RR and the Agreement.

However, provided the spectrum mask of the alternative use is within that of the Plan assignment it will not cause interference to the services of other administrations in excess of what has been agreed by these administrations at RRC-06.

In addition, it will benefit from the protection associated to that of the corresponding Plan entry, i.e. the maximum incoming interference (field strength) will not exceed what has been agreed with other administrations for the corresponding Plan entry.

However if it suffers unacceptable interference from any assignment in a primary or secondary service it will not be possible to appeal to the BR since this assignment cannot claim protection from services operating in conformity with Article 5.

In this case, there would be nothing to be gained from notifying the assignment to the ITU, however, notification is mandatory under the RRs if the assignment is likely to cause interference.

9 Possible CEPT action to overcome the drawbacks explained in Sections 7 and 8 above.

As explained in Sections 7, if the alternative use suffers unacceptable interference from broadcasting or other primary service, it will not be possible to appeal to the BR since this assignment relates to a secondary service, and therefore cannot claim protection from a broadcasting or other primary service interferer. Further in Section

8, if the alternative use suffers unacceptable interference from any assignment in a primary or secondary service it will not be possible to appeal to the BR since this assignment cannot claim protection from services operating in conformity with Article 5.

However, since such alternative use has been agreed in CEPT (39 CEPT countries signed the ECP) this problem is unlikely to occur in practice within the CEPT countries (except possibly those bordering non-CEPT countries).

To overcome this difficulty CEPT will make a declaration in the RRC-06 Agreement to the effect that CEPT countries will protect the Plan entries of other CEPT countries in the case they are used for alternative terrestrial applications providing they operate under the envelope of the digital broadcasting entry in the Plan, i.e. the peak power density in any 4 kHz shall not exceed the spectral power density in the same 4 kHz of the notified digital broadcasting assignment (see Annex 1).

10 Transition Period

The Transition period shall end on 17 June 2015. However there will be a footnote listing countries where the Transition period for the band 174-230 MHz will end on 17 June 2020. It is expected that Iran, some Arab countries, and some southern African countries will join this footnote.

Since the objective of the ECP on transition period was to achieve 2015 for the planning area, and the countries in the footnote are outside Europe, the objective of the ECP can be considered to have been met.

11 Conclusion

11.1 The objectives of the ECPs have been met to the extent possible within the constraints of the negotiations and the mandate of the Conference.

11.2 The Agreement is future proof to take advantage of possible changes in the Article 5 of the Radio Regulations, or the definition of services.

11.3 Europe has made the issue of increased flexibility in the use of the spectrum one of the major issues on RRC-06. In bilateral discussions with representatives of other regions, there has been a high degree of agreement of the need to introduce greater flexibility in the Radio Regulations in forthcoming WRCs, including the introduction of primary allocations to the Land Mobile and Fixed services in the band 470-862 MHz.

11.4 Within CEPT, providing CEPT countries join the declaration as outlined in Section 9 above, the objectives of the ECP will be met fully without further action.

13.6.06

Annex 1

Declaration

“For [list of countries]:

At the time of signing the Final Acts of the Regional Radiocommunication Conference for planning of the digital terrestrial broadcasting service in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz (Geneva, 2006), the delegations of the above mentioned countries formally declare that their administrations may use their digital Plan entries for broadcasting or other terrestrial applications with characteristics that may be different from those appearing in the Plan within the envelope of their digital Plan entries under the provisions of the GE-06 Agreement and the Radio Regulations, and that their administrations agree that any such use will be afforded protection to the levels defined by the interfering field strengths as arising from their digital Plan entries, taking into account any relevant bilateral agreements.

ANNEX 2: FLOWCHART OF THE REGULATORY PROCEDURES APPLICABLE FOR THE USE OF ENTRIES IN THE PLAN FOR OTHER APPLICATIONS/SYSTEMS

