

Agenda item 1.17 – to consider the results of sharing studies between mobile and other services in the 790 to 862 MHz band

Summary:

There is no practical evidence up to now that the so called “cumulative effect” of multiple base stations in a single frequency mobile service network does in general significantly raise the interference potential to a terrestrial broadcasting network in a neighbouring country. If it is true that an increased interference potential would only occur in exceptional cases, additional preventive regulatory measures are not required. These cases should be solved in a corrective manner on a bilateral basis.

As this is already covered by current regulation additional regulatory measures are not required.

Therefore Option 1 of the CPM text should be adopted as an ECP.

Proposal:

The GSMA is of the opinion that Decisions taken at WRC-12 should not:

- a) limit the possibility to deploy mobile networks in the 790 – 862 MHz band,
- b) hinder or avoid international harmonisation of allocations in the band,
- c) complicate the regulatory procedures among administrations.

Since both options, II and III deal with additional preventive stipulations to be applied during the coordination procedure with neighbouring countries; it would increase the administrative complexity and the effort involved with coordination of mobile broadband networks in the band 790-862 MHz.

In conclusion, Option I leaves maximum flexibility to administrations to agree on all measures to solve specific compatibility issues in an adequate manner and should be supported as the unique option in the ECP.

Background:

The CPM text offers three options to solve the issue A of the agenda item 1.17:

- **Option I:** *No additional arrangements (no change of current regulation);*
 - **Option II:** *Optional arrangements to take account of a potential impact of the cumulative effect of interference from the Mobile Service (MS) to the Broadcasting Service (BS). The cumulative effect of interference to the broadcasting service from the identified mobile service could be addressed in a draft Resolution 749 (Rev. WRC-12);*
 - **Option III:** *Mandatory arrangements to take account of a potential impact of the cumulative effect of interference from the MS to the BS. The cumulative effect of interference to the broadcasting service from the identified mobile service is addressed in draft Resolution 749 (Rev. WRC-12)*
- Options II and III ask for optional (Option II) or mandatory (Option III) additional regulation to cover a possible “cumulative” effect.
- Option II supports the development of an ITU-R Recommendation at the next study period (after 2012) describing i) a calculation procedure to assist Contracting Members to the GE06 Agreement in identifying the assignments in the mobile service generating a cumulative interference exceeding the coordination trigger field strength and ii) a methodology that administrations could apply in their bi- and multilateral coordination to

take into account the cumulative effect of interference from the mobile service to the broadcasting service.

Discussion

The GSMA is of the view that CEPT has been strongly involved in providing technical studies on the potential impact of the cumulative effect of interference from Mobile Service base stations to broadcasting service. Current trigger field strength values, which determine whether coordination of a base station is required or not, are already based on worst case assumptions. They provide some margin to avoid interference, even if a cumulative effect will occur.

The cumulative effect of multiple base stations of a single frequency mobile network may theoretically increase the field strength at the border line by linear accumulation, but many factors do reduce this effect in practice. As already discussed in ITU-R Joint Task Group 5-6 the structure in real mobile networks is not regular and the network characteristics are not uniform over the whole network. There are a number of elements that can impact on network design (strategy of the operators, terrain profile and the service provided). Moreover, in order to minimize the intra system noise, mobile operators use techniques which results in reduction of the e.i.r.p. in the base stations. This has been shown in several studies (Document JTG5.6/158 /159 /160 /161). There is no practical evidence up to now that this cumulative effect does in general lead to a significantly reduced signal to noise ratio for broadcasting networks in neighbouring countries.

As a consequence, it is not justified to involve many more base stations in the coordination process and to increase the administrative effort by preventive regulation only on this basis. Development of a Recommendation to prepare a procedure for the cumulative interferences does not seem appropriate with regard to the practical effects.

In parallel, the European Commission intends to achieve mandatory harmonisation of the mobile service allocation in the band 790-862 MHz by 2013. It is expected that after this date, cross border coordination with broadcasting networks is anyway not anymore necessary in most of the European countries.

However, if in exceptional cases, an increased interference potential by the cumulative effect may occur, these cases should be solved on a bilateral basis between involved administrations. Additional international measures are not required.

Conclusions

The GSMA is of the view that the decisions taken at WRC-12 should not unnecessarily limit the possibility to deploy mobile networks in the 790 – 862 MHz band, and over complicate the regulatory procedures among administrations.

Therefore, the GSMA encourages administrations to facilitate the introduction of Mobile Service in the 790-862 MHz band by supporting the Option I, as the unique Option for *Issue A* related to the Agenda Item 1.17 in the ECP.

WRC-12 AI 1.17 Issue A – Coordination of Mobile Service Networks and Broadcasting Service networks between neighbouring Countries

Position of the Mobile Industry and the GSMA

- The cumulative effect of multiple base stations of a single frequency mobile network may theoretically increase the field strength at the border line by linear accumulation, but many factors do reduce this effect in practice.
- Current trigger field strength values, which determine whether coordination of a base station is required or not, are based on worst case assumptions. They already provide margin to avoid interference, even if a cumulative effect will occur.
- The structure in real mobile networks is not regular and the network characteristics are not uniform over the whole network given that a number of elements can impact a network design (strategy of the operators, terrain profile and the service provided). This will mitigate possible cumulative effects further.
- An increased interference potential would only occur in exceptional cases. Additional preventive regulatory measures are not required. These cases should be solved in a corrective manner on a bilateral basis.
- There is no practical evidence up to now that the so called “cumulative effect” of multiple base stations in a single frequency mobile service network does in general significantly raise the interference potential to a broadcasting network in a neighbouring country.
- Options II and III deal with additional preventive stipulations to be applied during the coordination procedure with neighbouring countries which would increase the administrative complexity and the effort involved with coordination of mobile broadband networks in the band 790-862 MHz.
- Option I leaves maximum flexibility to administrations to agree on all measures to solve specific compatibility issues in an adequate manner and should be supported as the unique option in the ECP.
- it is not justified to involve many more base stations in the coordination process and to increase the administrative effort by preventive regulation only on this basis.
- Development of a Recommendation to prepare a procedure for the cumulative interferences does not seem appropriate with regard to the practical effects.
- In essence, the GSMA is of the view that the Decisions taken at WRC-12 should not limit the possibility to deploy mobile networks in the 790 – 862 MHz band and complicate the regulatory procedures among administrations.
- Therefore, the GSMA encourages administrations to facilitate the introduction of Mobile Service in the 790-862 MHz band by supporting the Option I, as the unique Option for Issue A related to the Agenda Item 1.17 in the ECP.