CEPT Brief on agenda item 7.1

(Additional items identified (by CPM-06) requiring urgent studies by the ITU-R Study Groups)

Issue

Technical aspects of use of terrestrial optical free-space telecommunications (see Resolution 118 (Marrakesh, 2002)).

Preliminary CEPT position

To focus on the technical studies related to the possible need for frequency planning and interference management, for example to see what equivalents of radio techniques could still be applicable at these frequencies and what new techniques should be expected

Although the Resolution refers to "optical", infra-red and sub-mm communications will be of more immediate importance.

Background

Radiocommunication is defined by No. 1005 of the ITU Convention as, "Telecommunications by means of radio waves". Radio waves are subsequently defined as "electromagnetic waves of frequencies arbitrarily lower than 3 000 GHz, propagated in space without artificial guide"[1]. As most of the definitions and terms included in the Radio Regulations are based on the definition of "radiocommunication", they are not applicable to systems operating above 3 000 GHz.

However, the Plenipotentiary Conference adopted Resolution 118 (Marrakesh, 2002) to resolve that WRCs "can include in agendas for future conferences, items relevant to spectrum regulation of frequencies above 3 000 GHz and take any appropriate measures, including revision of the relevant parts of the Radio Regulations".

Free-space communication links operating above 3 000 GHz have been in existence for many years. Now, the ITU-R has begun studies of the possibility and relevance of including in the Radio Regulations frequency bands above 3 000 GHz.

The 2003 Radiocommunication Assembly approved Question ITU-R 228/1, entitled *Possibility and relevance of including in the Radio Regulations frequency bands above 3 000 GHz*.

List of relevant documents

The following documents are identified as relevant to this issue in the provisional CPM report:

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[1] In the French text, the frequency limit is "by convention". In the Spanish text it is termed "conventionally", and in the English text it is termed "arbitrarily".

- Preliminary draft new Recommendation ITU-R P.[FSO_PREDICT] “Prediction methods required for the design of free-space optical links” (Annex 4 to WP 3M Chairman’s Report (Document 3M/178)).
- Preliminary draft new Recommendation ITU-R P.[FSO_ATMOS] “Propagation data required for the design of free-space optical links” (Annex 4 to WP 3J Chairman’s Report (Document 3J/159)).
- Working document toward a preliminary draft new ITU-R Report “The possibility and relevance of including in the Radio Regulations frequency bands above 3 000 GHz” (Annex 6 to WP 1A Chairman’s Report (Document 1A/134)).
- Preliminary draft new Report “Fixed service applications using frequency bands above 3 000 GHz”. (Annex 7 to Working Party 9B Chairman’s Report (Document 9B/203)).

In addition, Working Party 4A has developed Recommendation ITU-R S.1590 Technical and operational characteristics of satellites operating in the range 20-375 THz. Although this recommendation does not address terrestrial telecommunication, it provides very useful technical material on the current and some expected future techniques.

Actions to be taken

None

Preliminary positions from organizations outside CEPT

TBD
