

**PCC.III/RES.25(III-95)**

**CITEL COMMON VIEWS ON NON-GSO MSS FEEDER LINK ALLOCATIONS  
FOR WARC-95<sup>1</sup>**

The Third Meeting of the Permanent Consultative Committee III: Radiocommunications,

**Considering:**

That under Resolution PCC.III/Res.2(I-94) a working group was established to coordinate CITEL preparations for upcoming WRCs and regional radiocommunication conferences;

That the Working Group established under this Resolution has met several times to discuss many issues related to preparations for the upcoming WRC-95;

That as a result of the meetings of the Working Group a Final Report was prepared (Doc. PCC.III-167) in which a number of CITEL common views were considered and agreed to by CITEL member administrations;

That, as regards the allocation proposals for non-GSO MSS feeder links, these common views represent the set of elements common to the various proposals presented to the Working Group;

That it would be advantageous to minimize the differences between specific non-GSO MSS feeder link allocation proposals of CITEL Member countries in order to maximize the likelihood that the allocations made by WRC-95 will accommodate the requirements of all CITEL Member countries;

That the Terms of Reference of the Working Group specifically state: □...that the recommended proposals agreed by PCC-III would be sent to all CITEL Member countries with a recommendation that each country submit the proposal to the ITU as a country proposal□.

**Resolves:**

1. That all CITEL Member countries support the CITEL Common Views which are found in the Annex to this Resolution,
2. That these common views represent the basis from which CITEL Member countries can develop their proposals to WRC-95.

**ANNEX**

**CITEL COMMON VIEWS ON NON-GSO MSS FEEDER LINK ALLOCATIONS  
FOR WRC-95**

CITEL administrations agree with the conclusion of CPM-95 that an estimated 200-400 MHz in each direction of transmission is required for the first generation of non-GSO MSS feeder links in

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each of the 4-8 GHz and 8-16 GHz portions of the spectrum, and that an estimated 200-500 MHz in each direction of transmission is required for non-GSO MSS feeder links in the 16-30 GHz portion of the spectrum.

CITEL administrations agree that the FSS bands identified for non-GSO MSS feeder links should be exempted from the application of RR 2613. The coordination and notification procedures of Resolution 46 should be modified to include the bands allocated for non-GSO MSS feeder links, including coordination between earth stations in bands where non-GSO MSS feeder links are accommodated on the basis of reverse band working. It is recognized that any such new or existing FSS allocations are either limited to feeder links for non-GSO MSS systems, or are also available for non-GSO MSS feeder links.

CITEL administrations agree that the spectrum requirements of non-GSO MSS feeder links could be accommodated by allocations in portions of some or all of the following frequency ranges:

#### **5000-5250 MHz (Earth-to-space)**

Allocation proposals for non-GSO MSS feeder links range up to 160 MHz in this band. CPM-95 recommended that non-GSO MSS feeder links and the aeronautical radionavigation service, specifically the Microwave Landing System (MLS), use non-overlapping spectrum in order to recognize the critical safety aspects of MLS and to avoid difficult case-by-case coordination. Proposals should recognize spectrum requirements for MLS. An allocation in this frequency range should be limited to non-GSO MSS feeder uplinks.

#### **6650-7075 MHz (space-to-Earth)**

CPM-95 concluded that sharing of non-GSO MSS feeder links on the basis of reverse band working with the current FSS allocation in this band is technically feasible. As recommended in Chapter 2 - Part C - □3.2.2.5.1 of the CPM-95 Report, the power flux density produced by a non-GSO MSS constellation at the GSO orbit to protect GSO networks using the reverse direction of transmission and avoid the need for coordination should be limited to a value of -168 dB(W/m<sup>2</sup>/4 kHz). Chapter 2 - Part C - □3.6.4.8 of the CPM-95 Report recommended power flux density limits of -158/-148 dB(W/m<sup>2</sup>/4kHz) or -134/-124 dB(W/m<sup>2</sup>/MHz) and -154/-144 dB(W/m<sup>2</sup>/4kHz) or -134/-124 dB(W/m<sup>2</sup>/MHz) to protect the terrestrial service in heavily used and lightly used portions of this band, respectively. It should be noted that the WRC, as a practical matter, will have to select one of these two limits. An allocation in this frequency range should be limited to non-GSO MSS feeder link use.

#### **10.7-10.95 GHz and 11.2-11.45 GHz (Earth-to-space)**

CPM-95 concluded that sharing of non-GSO MSS feeder links on the basis of reverse band working with the current FSS allocation in these bands is technically feasible. An allocation in this frequency range should be limited to non-GSO MSS feeder link use.

#### **12.75-13.25 GHz (space-to-Earth)**

CPM-95 concluded that sharing of non-GSO MSS feeder links on the basis of reverse band working with the current FSS allocation in this band is technically feasible. As recommended in

Chapter 2 - Part C - □3.2.2.5.1 of the CPM-95 Report, the power flux density produced by a non-GSO MSS constellation at the GSO orbit to protect GSO networks using the reverse direction of transmission and avoid the need for coordination should be limited to a value of -168 dB(W/m<sup>2</sup>/4 kHz). Chapter 2 - Part C - □3.6.4.8 of the CPM-95 Report recommends a power flux density limit of -150/-140 dB(W/m<sup>2</sup>/4kHz) or -126/-116 dB(W/m<sup>2</sup>/MHz) to protect the terrestrial fixed service in heavily used portions of this band. An allocation in this frequency range should be limited to non-GSO MSS feeder link use.

#### **15.4-15.7 GHz (Earth-to-space) (space-to-Earth)**

CPM-95 concluded that bi-directional working of non-GSO MSS feeder links is feasible, particularly if the band is not used by GSO FSS networks. A limitation on the power flux density produced by non-GSO MSS satellites in this band should be imposed in order to protect radionavigation systems in the bands. In order to simplify coordination between feeder link earth stations and radionavigation systems, limits should also be placed on minimum earth station EIRP density and maximum radionavigation EIRP. An allocation in this frequency range should be limited to non-GSO MSS feeder link use.

#### **20/30 GHz Bands**

Chapter 2 - Part C - □3.1.8 of the CPM-95 Report concluded that, by the use of interference reduction mechanisms, co-directional frequency sharing between GSO FSS and non-GSO MSS feeder links may be possible in some cases. In such cases, two regulatory options were considered as possible ways to satisfy the non-GSO MSS feeder links in specific frequency sub-bands.

Under the first option, non-GSO MSS feeder links and GSO FSS networks could be allocated to operate on an equal basis in parts of the band under a footnote which would exempt non-GSO MSS feeder links from the application of RR 2613 and would substitute a coordination procedure, such as Resolution 46, with applicable sharing criteria and standards specified in the Radio Regulations. Under the second option, portions of the bands would be identified to be used primarily by non-GSO MSS feeder links where: RR 2613 would be waived for these feeder links, existing GSO/FSS networks would continue to have equal status with the non-GSO MSS feeder links, and future GSO/FSS networks would not cause harmful interference to, or receive protection from non-GSO MSS feeder links.

These options must be carefully considered when deciding whether the non-GSO MSS allocation at 20/30 GHz should be equal status with GSO FSS networks, or whether the non-GSO MSS feeder link allocation should have primary status in designated parts of the band.

CPM-95 also concluded that, in parts of the band allocated to both FSS and MSS (i.e. RR 873B), where small fixed and mobile earth stations are used by the GSO FSS networks, sharing between such networks and non-GSO MSS feeder links would place severe constraints on the GSO networks for protection of the non-GSO MSS feeder links. Considering this conclusion, proposals for non-GSO MSS feeder links should focus on spectrum in each direction in the frequency ranges 19.2-19.7 GHz (space-to-Earth) and 29.0-29.5 GHz (Earth-to-space).

In addition to the above use of the band, the CPM also considered reverse band use of the 20 GHz band (i.e. Earth-to-space) for non-GSO MSS feeder links to be feasible, provided that this reverse use of the band is paired with a band below 17.7 GHz. Given that bi-directional non-GSO MSS feeder link use of the band 15.4-15.7 GHz has been found to be feasible, pairing a 20 GHz reverse use allocation with a space-to-Earth allocation in 15.4-15.7 GHz would be possible.

Proposals for reverse use of the 20 GHz band should focus on spectrum in the 19.2-19.7 GHz band and should be limited to non-GSO MSS feeder link use.