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Comisión Interamericana de Telecomunicaciones
Inter-American Telecommunication Commission

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AGENDA ITEM 1.2

PRELIMINARY VIEWS FOR WRC-19

(Item on the agenda: 3.1 (SGT2~~B~~))

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(Document submitted by the Coordinator)

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SGT 2B – Science services

Coordinator: Thomas vonDeak (USA)

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Rapporteur Agenda Item: Alfredo Mistichelli (USA)

Alternate Rapporteur Agenda Item:

Agenda item 1.2: *to consider in-band power limits for earth stations operating in the mobile-satellite service, meteorological-satellite service and Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9-400.05 MHz, in accordance with Resolution* ***765 (WRC-15)***

Resolution **765 (WRC-15)** – *Establishment of in-band power limits for earth stations operating in mobile-satellite service, the meteorological-satellite service and the Earth exploration-satellite service in the frequency bands 401-403 MHz and 399.9 400.05 MHz*, calls for the necessary technical, operational and regulatory consideration of the possibility of establishing in-band power limits for earth stations in the EESS and MetSat services in the frequency bands 401-403 MHz and in the MSS frequency band 399.9-400.05 MHz.

BACKGROUND

The bands 401-403 MHz and 399.9-400.5 MHz are used for uplink transmission by the Data Collection System (DCS) under the EESS, MetSat and MSS allocations. The DCS is a network of sensors measuring temperature, pressure, humidity, sea level, and tracking animal migration, located in areas difficult to reach. These measurements indispensable for monitoring and predicting climate change; monitoring oceans, weather, and water resources. Additionally, these systems assist in protecting biodiversity, and improve maritime safety, and security. The data is transmitted to GSO and non-GSO satellite networks using the non-GSO MSS allocation in the band 399.9-400.5 MHz or the meteorological satellite allocation in the band 401-403 MHz. These systems usually operate most efficiently together by using moderate to low e.i.r.p. levels, resulting in small link margins.

These frequency bands are used by satellites for telecommand purposes under the EESS, MetSat service, or MSS allocations and a growing number of these satellites are planned. The output power levels of the earth stations at the antenna port of these telecommand links (Earth-to-space) can be much higher than the moderate to low power levels used for the DCS service links, leading to potential harmful interference to DCS satellite receivers.

Recommendation ITU-R SA.2045 provides information on the performance and interference criteria for relevant geostationary-satellite orbit (GSO) and non-geostationary satellite (non-GSO) DCS in the frequency band 401-403 MHz. Recommendation ITU-R SA.2044 provides information on the current and future usage of non-GSO DCS in the frequency band 401-403 MHz, and the portioning of the frequency band to allow all DCS equal access to the spectrum. Recommendation ITU-R M.2046 provides a description, and the corresponding protection criteria for broadband noise and narrowband interference, of one MSS system that uses the frequency band 399.9-400.05 MHz (Earth-to-space).

ISSUES

- The bands 401-403 MHz and 399.9-400.05 MHz are used by the data collection system (DCS) for transmitting information from low-power sensors to satellites.
- A growing number of satellites are planned to use these frequency bands for telecommand, which uses higher power than the DCS sensors.
- The agenda item considers implementing uplink power limits to protect DCS operations, but that could limit the use of these bands for telecommand applications.
- It is necessary to have stable regulatory certainty in order to be able to provide long-term continuity for the operation of data collection systems (DCS). DCS represents long-term efforts and significant investments. The establishment of in-band power limits for earth stations operating in the EESS,

MetSat service, and MSS would bring confidence for DCS operators using the frequency bands 401-403 MHz and 399.9-400.05 MHz.

PRELIMINARY VIEW:

Canada, USA

CITEL supports conducting and completing the necessary technical, operational, and regulatory studies on the possibility of establishing in-band power limits for earth stations in the EESS and MetSat service in the frequency band 401-403 MHz and the MSS in the frequency band 399.9-400.05 MHz.