

Dear Colleagues,

Please find attached the responses to the European Commission's Questionnaire on the long-term vision for the upper 6 GHz band, published on July 8, 2024.

It is important to note that these responses were developed through a collaborative effort between the Italian Space Agency (ASI) and Thales Alenia Space Italy (TAS-I), the prime contractor for the CIMR Mission.

Explain impact of possible future usage of the upper 6GHz for MFCN and/or WAS/RLAN on existing services:

1) What are your current and future spectrum needs (before and beyond 2030) in the upper 6GHz band?

Focusing on the Copernicus Imaging Microwave Radiometer (CIMR) mission, a critical frequency band for Sea Surface Temperature (SST) retrieval is the 6725-7125 MHz range.

2) What impact on your service do you expect from the introduction of MFCN and/or WAS/RLAN in the upper 6GHz band?

Any transmission within the 6725-7125 MHz band utilized by the CIMR project has the potential to degrade its performance significantly. The extent of this degradation is contingent upon several factors:

- **Signal Strength:** The power level of the interfering signal directly correlates to its impact, leading to substantial performance degradation.
- **Bandwidth Occupied:** The width of the frequency band occupied by the interfering signal determines the extent of spectral congestion. Wider bandwidth transmissions can severely compromise CIMR's ability to accurately extract the required information.
- **Interference Duration and Frequency:** The frequency and duration of interference incidents influence the overall impact on CIMR performance. Consistent or prolonged interference can render the system inoperable for extended periods.
- **Signal Spatial Distribution:** The location of the interfering transmitter relative to the CIMR receiver can substantially compromise its performance within a specific geographical region.

3) What measures could improve compatibility from your perspective?

Our proposal is to strictly prohibit the introduction of MFCN and/or WAS/RLAN services within the CIMR Mission's dedicated 6725-7125 MHz frequency band. This is a paramount concern, as any interference from these services could severely compromise the CIMR Mission's capability to gather "as requirement" SST data.

We confirm our availability for any clarifications or further details.
Regards,

Agenzia Spaziale Italiana / Italian Space Agency