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# Ensuring SKA Science: Spectrum Management Challenges

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The rapid growth of satellite constellations in low Earth orbit is creating new challenges for protecting radio astronomy from radio frequency interference (RFI). As the largest radio observatory, the Square Kilometre Array (SKA) demands rigorous even in spectrum management to secure its scientific potential. The European Committee on Radio Astronomy Frequencies (CRAF) strength the collaboration with SKA to preserve the spectrum available to radio astronomy for scientific purposes, continues to engage in international regulatory processes to ensure that the radio spectrum remains a viable resource for cutting-edge scientific discovery. Agenda Item 1.16 of the next World Radiocommunication Conference planned for 2027 (WRC-27) plays a key role in establishing a regulatory framework that enables the coexistence of non-geostationary satellite services and the Radio Astronomy Service (RAS). Ongoing studies aim to safeguard future astronomical observations by introducing pre-launch regulatory procedures and designating radio-quiet zones around the SKA-Mid and ALMA sites.

At low frequencies, unintended radiated emissions (UEMR), the source of which is still debated, probably due to electronics onboard satellites, represent an additional source of concern. These emissions often fall outside the scope of current compatibility assessments, yet they pose a serious risk to the exceptionally sensitive SKA-Low receivers.

In order to address these challenges, a collaborative approach involving regulators, industry and the scientific community is required to ensure that ambitious projects such as the SKA can achieve their scientific goals.

## Topics

Technology & IT

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