



## Radiocommunication Bureau (BR)

Administrative Circular  
**CACE/1046**

21 December 2022

**To Administrations of Member States of the ITU, Radiocommunication Sector Members,  
ITU-R Associates participating in the work of the Radiocommunication Study Group 7  
and ITU Academia**

Subject:       **Radiocommunication Study Group 7 (Science Services)**  
                  –       **Approval of 1 new ITU-R Question**

By Administrative Circular [CACE/1043](#) dated 19 October 2022, 1 draft new ITU-R Question was submitted for approval by correspondence in accordance with Resolution ITU-R 1-8 (§ A2.5.2.3).

The conditions governing this procedure were met on 19 December 2022.

The text of the approved Question is attached for your reference in the Annex to this letter and will be published by the ITU.

Mario Maniewicz  
Director

**Annex: 1**

## Annex

### QUESTION ITU-R 260/7

#### Radio astronomy in the shielded zone of the Moon

(2022)

The ITU Radiocommunication Assembly,

*considering*

- a)* that many radio astronomical observations and scientific experiments cannot be carried out on the surface of the Earth because of atmospheric absorption and reflection, scintillation, and spectrum use by active services;
- b)* that the shielded zone of the Moon (SZM) comprises the area of the Moon's surface and an adjacent volume of space which are shielded from emissions originating within a distance of 100 000 km from the centre of the Earth (RR No. **22.22.1**) and provides natural isolation from sources of radio emissions from Earth and even satellites in geostationary, as well non-geostationary orbit;
- c)* that the development of spacecraft, as well as a host of new technologies, enables radio astronomy experiments to be carried out on the near side and in orbit about the Moon, facilitating later radio astronomy experiments in the expected quiet environment in the SZM;
- d)* that communication links between stations in the SZM with other radio stations on the lunar surface or in lunar orbit, including telemetry/command/control from radio astronomy observatories in the SZM, will be needed to support radio astronomy observations there;
- e)* that the optimum utilization of the SZM for astronomical observations requires understanding of the electromagnetic environment on the Moon and how it may evolve,

*noting*

- a)* that the SZM provides a unique environment for radio astronomy observations and other passive uses of the spectrum owing to the prohibition of harmful emissions that would interfere with such observations;
- b)* that protection of frequencies for radioastronomical measurements in the SZM is the subject of Recommendation ITU-R RA.479,

*recognizing*

- a) that RR Nos. **22.22 – 22.25** prohibit emissions which could cause harmful interference to radio astronomy observations in the SZM across the entire radio spectrum, except in frequency bands allocated to certain radio services as given there;
- b) that RR Nos. **22.22 – 22.25** recognize the necessity of maintaining the SZM as an area of great potential for observations by the radio astronomy service and for other passive space research and, consequently, as free as possible from transmissions;
- c) that radio astronomy observations and other passive uses of the spectrum in the SZM may require the use of non-radio equipment and other radiocommunication services, including those enumerated in RR Nos. **22.23-22.24**, which have the potential to cause harmful interference in some bands,

*decides* that the following Question should be studied

- 1 What are the anticipated scientific characteristics of radio astronomy in the SZM that define the technical and operational characteristics of radio astronomical observations in the SZM, and which frequency bands are expected to maximize the scientific output?
- 2 How does the lunar environment affect radio astronomy observations in the shielded zone of the Moon?
- 3 What support systems are anticipated to be needed for conducting radio astronomy observations in the SZM and how may their impact be avoided, especially for frequency bands referred to in *decides* 1?

*further decides*

- 1 that the results of the above studies should be included in one or more Recommendations, Reports and/or Handbooks;
- 2 that the above studies should be completed by 2027.

Category: S2

---