



STATEMENT BY THE SQUARE KILOMETRE ARRAY OBSERVATORY

The 59th session of the Scientific and Technical Subcommittee of the United Nations
Committee on the Peaceful Uses of Outer Space

AGENDA ITEM 13: Long Term Sustainability of Outer Space Activities

Read by: Theunis Kotze (SKAO Head of Legal)

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Check against delivery.

Chairperson,

Thank you for allowing me the floor.

Over the last years we have followed with interest the **UNCOPUOS work touching on radioastronomy**. We believe that as a Permanent Observer we would be able to meaningfully contribute to discussions on *the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space*, and in particular its Guideline A.4 and Guideline C.4; Plus the *Space2030 Agenda and Implementation Plan* and in particular Overarching Objective 3 para 3.5.

During the last twelve months, the SKA Observatory was born as an international intergovernmental organisation, and in June of last year, our Council agreed to commence construction of our observatory, which will by the end of this decade, be realised as the largest and most capable radio telescope infrastructure in the world, and one of the largest research infrastructures of any kind in the world. Our driving aim is to understand, through radio astronomy, answers to some of the most fundamental questions in physics and astronomy. Through our instruments, and the broadest possible engagement with scientists around the world, we aim to create an ecosystem whereby professionals and the public alike will ultimately have access to our science. We will work alongside our research infrastructure colleagues in other domains to enable a multi-wavelength view of the Universe that will contribute fundamentally to humankind's knowledge about our origins and our place in the cosmos. We look forward to contributing to the COPUOS agenda in these areas.

Chairperson,

In the area of the **efficient use of radio spectrum**, SKAO, with its broad international membership of States and scientific partners, has been increasing its role as a convenor of discussions between observatories and interested parties in the field of radio astronomy. Combined with our position as a Sector Member of the ITU, our strategy is to coordinate initiatives with the aim of working openly with all to ensure that appropriate strategies are in place to balance the needs of astronomy with the priorities of other radio spectrum users.

Chairperson,

SKAO, in its role as co-host of a new **International Astronomical Union Centre for the Protection of the Dark and Quiet Sky**, stands ready to contribute to COPUOS activities around the use of the local space environment and its long term sustainability, deploying our technical expertise to support dialogue.

Chairperson,

SKAO works in close partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia and the South African Radio Astronomy Observatory (SARAO) in South Africa to build and operate the Observatory and its telescopes. CSIRO already operates the ASKAP telescope at the SKA site in Western Australia. SARAO operates the MeerKAT telescope at the SKA site in South Africa. The two sites have been chosen due to their **radio quietness**. These sites enjoy the national regulatory status of radio quiet zones (RQZ) that protect them from ground-based interference, making them ideal for radio astronomy observations, as the SKA precursor telescopes MeerKAT in South Africa, and ASKAP and MWA in Australia, have already demonstrated. To ensure maximum benefit from the natural environment, a great deal of effort has been applied to the design of both SKA telescopes to ensure that very little radio frequency interference (RFI) is self-generated and that it is controlled by the infrastructure as much as possible.

The recent boom in **satellite mega-constellations** involving very large numbers of satellites is posing additional challenges for professional astronomy because of their impact on observations at radio (as sources of RFI), optical (due to reflecting sunlight) and infrared (due to trapping heat) wavelengths. In the case of the SKA, the RFI emitted by these constellations risks the loss of some observations.

Mitigations are possible and thanks to constructive engagement with satellite operators so far, SKAO has identified a path that limits the impact on the SKA telescopes while imposing limited constraints on satellite operators. Strong commitments from industry and Member State governments will be needed in the months and years to come to take these

proposals forward and ensure the investments are safeguarded and the skies remain a sustainable resource for all stakeholders, including SKAO.

Chairperson,

Lastly, I wish to remind all delegates of the SKAO technical presentation tomorrow, which will be on the **SKA Observatory, Exploring Space in Radio Frequencies**.

Chairperson, I thank you.