

Digital Dividend Public Consultation: Response from the Royal Astronomical Society

The Royal Astronomical Society (RAS) works to encourage and promote the study of astronomy, solar system science, geophysics and closely related branches of science. It represents more than 3000 members ('Fellows') worldwide, including scientific researchers in universities, observatories and laboratories as well as related professions such as historians of astronomy, teachers and science writers.

The Society welcomes the opportunity to comment on the proposals to utilise that part of the radio spectrum released by the advent of digital terrestrial television. A substantial fraction of our membership use scientific data obtained from radio observatories that are directly affected by terrestrial transmissions. And whether RAS Fellows or not, radio astronomers across the European continent are recognised for their world leading work.

We do not wish to comment on the commercial aspects of the Digital Dividend. However, the Society wishes to draw the attention of the Commission to two specific areas of concern for our Fellowship:

1. Firstly, there is a risk that the proposed use of the 800 MHz band will hinder the operation of some radio observatories that observe at low frequencies. Great care should be taken to ensure that transmitters designed for use in this band are constructed so that they do not radiate into adjacent bands, nor radiate in associated harmonic frequencies which could result in interference in the bands at 1600 to 1720 MHz.
2. In the future, the discussion on utilising the 1800 MHz band for 3G and 4G mobile phone networks could also have a detrimental impact on radio astronomy. The 1800 MHz band overlaps spectral line radio emission from 1720 MHz, specifically a spectral line emitted by the hydroxyl radical (OH), which provides key information on star forming regions and the interaction between supernova remnants and molecular clouds.

In both these cases, we therefore urge the Commission to consult with radio astronomers across the European continent to ensure that the expansion of access to the radio spectrum is not delivered at the expense of scientific research.