

Observatoire de Paris answer to public consultation on the RSPG Opinion on « a coordinated EU Spectrum approach for scientific use of radio spectrum »

The Observatoire de Paris, after consultation of the scientific community of radio astronomers operating the telescopes at its Nançay radio observatory, welcomes the opportunity to respond to the public consultation on a coordinated EU Spectrum approach for scientific use of radio spectrum.

The current European regulatory framework for frequency management is the result of a long and complex process that has involved most administrations. It is to be noted that it has allowed the development of a wide range of active radio applications, as well as higher sensitivity radio telescopes, thanks to the designation of harmonised frequency bands, including those allocated to the Radio Astronomy Service.

Main text:

3.3 – Under “Active techniques”, we propose to add: “Radar techniques are used in astronomy to map planets and some asteroids”.

We propose to add a line “Ground based radars” to table 1.

4.5 – In the chapter : “Benefits from radio astronomy”,

We propose to add:

“An application of Radio Astronomy that has direct economic and social benefits is the monitoring and forecasting of solar activity, which have a strong impact on ground based activities like wired transmissions, radio communications, power distribution and astronautics, and which are a pre-requisite for manned space activities.”

5.3 iv sharing in radio astronomy bands

We propose the following version of the text, from which, e.g., the sentence “This type of time sharing of active service bands on a non-interference non-protection basis is common practise” has been removed:

“Sharing scenarios have been investigated for radio astronomy operations but have only been implemented on an ad-hoc basis. In practice, during early morning hours there is less interference from terrestrial transmitters that are off the air, and from certain telecommunication satellite systems. A specific problem with time-sharing is that astronomical observations rely on sidereal time, which drifts by 2 hours per month, and that observations of variable objects like pulsars, comets and the Sun must be done at specific times, or continuously.”

6 : Analysis of responses from administrations

We propose to add to the text:

“Forty-six of the frequency bands that the RAS shares with other services and applications fall under the control of national administrations in accordance with RR footnote 5.149”.

9. Draft elements

We strongly support this chapter with the notable exception of paragraph 9.7 which we do not find acceptable in its current form. We strongly suggest the following modifications in 9.7:

1- Words in bold should be written as the rest of the draft.

2- In paragraph 7., the sentence “This assessment should, in a proportionate manner:” should be replaced by :

“This assessment should, if compliant with the R-R :”

3- The sentence “identify the *impact* *of the various* *options* on the interests of the particular groups of stakeholders;” should be replaced by:

“identify the social and economical impact of the various options on the interests of stakeholders;”

4- The sentence “take into account *commitments/obligations* in international initiatives/agreements; should be replaced by: /

“take into account commitments/obligations in international agreements in accordance with the R-R;”

5- “Assess the *risks* associated with each option”

This sentence should be suppressed.

6- We propose to add the following sentence to this section:

“In view of the expected increase in pressure on the use of the radio spectrum, any political decision should ensure the continued protection of the small fraction of the spectrum that is allocated for scientific use.”

Annex 2: Radio astronomy:

A - We propose to add the following item:

“(m) Monitoring and prediction of solar activity, and its impact on human activities: telecommunications, power distribution, astronautics.”

B – Chapter on « trends in radio astronomy »

1. « Trends in radio astronomy are towards higher sensitivity, and higher frequencies » We propose to replace “and higher frequencies” by “at all frequencies”. The cited SKA and LOFAR telescopes are proof of this.
2. « Examples are: the SKA project, which seeks to build a single telescope with a square kilometre surface at 1400 MHz » This summary is inaccurate, and we propose to replace it by « Examples are: the SKA project, which seeks to build a giant radio interferometer with a total collecting surface of a square kilometre and baselines up to 3000 km operating in the 100 MHz – 25 GHz frequency range ».
3. « ... (LOFAR) ... the range 30 – 250 MHz for radio astronomy». We propose to replace this sentence by “... (LOFAR) in The Netherlands, a radio interferometer with a total collecting surface of 100,000 m² and baselines up to 400 km operating in the 30 - 250 MHz frequency range».