



**Resolution SFCG 23-3**

**USE OF THE ALLOCATION FOR EESS (ACTIVE)  
IN THE BAND 432-438 MHz**

The SFCG

CONSIDERING

- a) that the need for monitoring forests was emphasized at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992;
- b) that there is a large scientific interest for using active sensors to map spatial distribution and dynamics of forest biomass, as well as to map and measure the depth of Antarctic ice and properties of arid and semi-arid regions;
- c) that these radars must operate at frequencies below 500 MHz in order to penetrate dense vegetation and the Earth's surface;
- d) that, in order to address this need, WRC-03 decided to allocate the band 432 – 438 MHz to the Earth exploration-satellite service (EESS) (active) on a secondary basis;
- e) that among the allocated services in the 432 – 438 MHz portion of the spectrum are radiolocation, amateur, fixed and mobile;
- f) that the band 433.75 – 434.25 MHz is used by space operations service (Earth-to-space) for launch command and destruct communications in the French Overseas Departments in Region 2, and in India, France and Brazil as given in RR 5.281, and that other administrations also use narrow frequency bands within this frequency range for the same purpose;
- g) that there is a potential for unacceptable interference from some spaceborne synthetic aperture radars to terrestrial space object tracking radars operating in the band 420 - 450 MHz;
- h) that Recommendation ITU-R RS.1260-1 provides the technical and operational constraints on the use of spaceborne active sensors within the 420 – 470 MHz frequency

range to facilitate sharing with other services allocated in this frequency range;

- i) that, in order to protect the allocated services in the band 432 – 438 MHz, RR No. **5.279A** incorporates Recommendation ITU-R RS.1260-1 by reference;
- j) that the radio astronomy allocation in the 406.1 – 410 MHz needs to be protected from potential unwanted emissions from active sensors operating in the Earth exploration-satellite service (active) secondary allocation in the band 432-438 MHz;

## RECOGNIZING

- 1) that limiting the geographical areas of interest to EESS missions using this allocation (e.g. Amazonian rain forest, arid and semi-arid regions, the Antarctic) will help to minimize interference to other services allocated in this band;
- 2) that all objectives of the identified missions will be campaign oriented, i.e. they will be concentrating on a specific region for limited pre-determined periods (e.g. 1 month) and will not be transmitting in regions which are not of interest during those specific periods;
- 3) that avoidance of transmissions when in line of sight of terrestrial space object tracking radars may be necessary to avoid mutual interference between the spaceborne active sensors and the terrestrial space object tracking radars;
- 4) that the EES (active) service is obligated to protect launch vehicle range safety command operations where harmful interference, even for very short period of time, into launch vehicle telecommand receivers could endanger the safety of life and property;
- 5) that the free and open availability of advanced operational schedule information on each and every campaign would facilitate the protection of the existing allocated services in the 432 – 438 MHz band;
- 6) that at WRC-03, the SFCG has agreed to make such information freely available on its website and to keep such information up-to-date;

## RESOLVES

- 1) that the SFCG will provide the free and open means for member agencies to make advanced operational schedule and sensor geographic area of coverage information available and up-to-date, via the official SFCG Web Site;
- 2) that member agencies submit such operational schedule and sensor geographic area of coverage information on intended spaceborne active sensing missions and their associated campaigns that will use the secondary allocation in the 432 – 438 MHz band to the SFCG Web Coordinator;
- 3) that member agencies with active missions and campaigns keep such operational

schedule information up-to-date;

- 4) that member agencies use the coordination procedure given in the Annex to ensure the protection of launch command and destruct communications;
- 5) that the SFCG address the concerns of the radio astronomy community with respect to potential unwanted emissions from active sensors operating in the 432 – 438 MHz band into the 406.1 – 410 MHz radio astronomy band.

## ANNEX

### **Coordination Procedure for EESS (active) in the 432-438 MHz band with Space Operation Service Activities**

This coordination activity shall be carried out as follows:

1. The Space agency responsible for the operation of EESS (active) sensor (EESS Agency) shall provide the information via SFCG Website (<http://www.sfcgonline.org>) sufficiently in advance of the launch of the satellite. This information will include:
  - contact point
  - satellite orbital data
  - sensor actual characteristics
  - scheduled launch date
  - planned schedule of operation
  - number of campaigns planned in an year
  - geographical areas to covered in each campaign
  - duration of operation of sensor over each region
2. When an EESS (active) campaign is planned, the space agency responsible for the operation of the EESS (active) sensor shall provide the following via the SFCG website:
  - duration and schedule of the campaign
  - geographical area to be covered
3. The Space agency carrying out the Space operation service activities (Space Operation Agency) shall examine the information given in 1 and 2 above. If the planned time period and the region of operation of the active sensor overlap that of the space operation service, Space Operation Agency shall inform the EESS Agency to switch off the EESS active sensor over the specific geographical region starting at a specific date.
4. The EESS Agency shall inform the Space Operation Agency that it has received this request and provide confirmation for this action.
5. Before the launch or during any time of the operation of EESS active sensor, if there is any change in the planned operation of EESS active sensor (in terms of time and duration of operation and area of operation), EESS Agency shall provide this information.
6. Space Operation Agency shall reexamine this information and provide its findings.
7. After the launch operations have been completed, the Space Operation Agency which has requested the EESS Agency to switch off the active sensor shall inform the EESS Agency of the end of the launch operations and the ability for the EESS Agency to resume its sensor operations.

8. During any stage of this coordination, the EESS Agency and Space Operation Agency ensure the availability of their designated contact persons.