

PART A

Agenda Item 1.3

Upgrading of radiolocation service in the bands 9 000-9 200 MHz and 9 300-9 500 MHz and further allocations to the Earth exploration-satellite service (active) and the space research service (active) in addition to the band 9 500-9 800 MHz

WRC-2007 agenda item 1.3: In accordance with Resolution 747 (WRC-03), consider upgrading the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz without placing undue constraint on the services to which the bands are allocated.

Introduction

WRC-07 agenda item 1.3 invites the Conference to consider, inter alia, the upgrading of the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz without placing undue constraint on the services to which the bands are allocated. Additionally ITU-R is invited to study, as a matter of urgency, the relevant technical characteristics, protection criteria and other factors.

Issue A:

The frequency band 9 000-9 200 MHz is currently allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis. The frequency band 9 300-9 500 MHz is currently allocated to the radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

There is a need to provide contiguous spectrum in the 9 GHz bands for the radiolocation service allocated on a primary basis worldwide, in order to provide adequate spectrum for new radar systems to function. There has been satisfactory co-existence for many decades, of various radar systems in the bands 9 000-9 200 MHz and 9 300-9 500 MHz, which include systems operating under the radionavigation and the radiolocation service.

Description of the proposals:

Taking the above into account, together with the assessment requested by Resolution 747 (WRC-03), Europe proposes that:

- a) The radiolocation service in the bands 9 000-9 200 MHz and 9 300-9 500 MHz shall be upgraded to primary status.
- b) Footnote 5.476 shall be suppressed

Proposals

ARTICLE 5

MOD EUR/1.3A/1

8 500-10 000 MHz

Allocation to services		
Region 1	Region 2	Region 3
9 000-9 200	AERONAUTICAL RADIONAVIGATION 5.337 <u>RADIOLOCATION</u> 5.471	
...		
9 300-9 500	RADIONAVIGATION <u>RADIOLOCATION</u> 5.427 5.474 5.475	

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Reasons: The frequency bands 9 000-9 200 MHz and 9 300-9 500 MHz are allocated to the aeronautical radionavigation service and the radionavigation service on a primary basis and to the radiolocation service on a secondary basis. The radar systems operating in these frequency bands under different services have similar characteristics such as low-duty cycle emissions and scanning beams as well as interference reduction techniques, considering further that current RNS and RLS systems have been successfully operating in the 9 GHz range for many years. ITU-R studies addressing other frequency bands indicated that sharing in the bands 9 000-9 200 MHz and 9 300-9 500 MHz between the radionavigation and radiolocation services is feasible.

SUP EUR/1.3A/2

5.476

Reasons: Footnote 5.476 (In the band 9 300-9 320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.) is obsolete and shall be deleted. The systems which were originally planned to be introduced in this band are no longer in operation.

SUP **EUR/1.3A/3**

RESOLUTION 747 (WRC-03)

Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9 000-9 200 MHz and 9 300-9 500 MHz, and possible extension of the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz.

***Reasons:** Consequential to the above proposals. The suppression of the Resolution should be taken into consideration in conjunction with the extension of the EESS (active) allocation at 9 GHz under the same agenda item.*

PART B

Agenda Item 1.3

Upgrading of radiolocation service in the bands 9 000-9 200 MHz and 9 300-9 500 MHz and further allocations to the Earth exploration-satellite service (active) and the space research service (active) in addition to the band 9 500-9 800 MHz

WRC-2007 agenda item 1.3: In accordance with Resolution 747 (WRC-03), consider upgrading the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz without placing undue constraint on the services to which the bands are allocated.

Introduction

WRC-07 agenda item 1.3 invites the Conference to consider, inter alia, extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) without placing undue constraint on the services to which the bands are allocated. Additionally ITU-R is invited to study, as a matter of urgency, the relevant technical characteristics, protection criteria and other factors.

Issue B:

The frequency band 9 500-9 800 MHz is currently allocated to the Earth exploration-satellite service (active) and to the space research service (active) worldwide on a primary basis. Since this band is well suited for imaging applications and because technological progress today provides the possibility to improve the features for a global monitoring for environment and security, there is a need to increase the spectrum available for the Earth exploration-satellite service (active) in this part of the spectrum, for systems requiring larger bandwidth than the current 300 MHz as in the 9500-9800 MHz.

Description of the proposals:

Taking the above into account, together with the assessment requested by Resolution 747 (WRC-03), Europe proposes that:

- c) The band 9 300-9 500 MHz shall be allocated to the Earth Exploration Satellite Service (active) and to the SRS (active) on a primary basis indicating that this extension is limited to EESS (active) and SRS (active) systems that need a band wider than the bandwidth available between 9 500-9 800 MHz.
- d) The band 9 800-9 900 MHz shall additionally be allocated to the Earth exploration-satellite service (active) and to the space research service (active) on a primary basis, indicating that this extension is limited to Earth exploration-satellite service (active) and space research service

(active) systems that need a bandwidth wider than the bandwidth available within 9 300-9 800 MHz.

- e) Footnote 5.476A shall be extended to cover also the bands 9 300-9 500 MHz and 9 800-9 900 MHz and the footnote text shall be modified accordingly.
- f) Footnote 5.YYY shall be added in order to protect the fixed service operating under RR No. 5.477 within the band 9 800-9 900 MHz.

Proposals

ARTICLE 5

MOD EUR/1.3B/1

9 300-10 000 MHz

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▼	▼
9 300-9 500	RADIONAVIGATION 5.476 Radiolocation <u>EARTH EXPLORATION-SATELLITE (active) 5.XXX</u> <u>SPACE RESEARCH (active) 5.XXX</u> 5.427 5.474 5.475 <u>MOD 5.476A</u>
9 500-9 800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) <u>MOD 5.476A</u>

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<u>9 800-9 900</u>	RADIOLOCATION <u>EARTH EXPLORATION-SATELLITE (active) 5.XXX 5.YYY</u> <u>SPACE RESEARCH (active) 5.XXX</u> Fixed 5.477 5.478 <u>MOD 5.476A</u>
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MOD EUR/1.3B/3

9 900-10 000

RADIOLOCATION

Fixed

5.477 5.478 5.479

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Reasons: ITU-R Studies to assess sharing possibilities between EESS (active) and different types of radar used in the radionavigation and the radiolocation services show that sharing is possible without constraining the services to which the extension bands are allocated already, at least in the case of wide-band EESS (active) systems. Mitigation techniques like those under study in ITU-R will further improve the sharing situation. As SRS (active) systems are operated in the vicinity of planets and celestial bodies or represent specific EESS (active) systems under development, it is assessed that the extension of 300 MHz to the SRS (active) will not create any potential harmful interference to other services in this band.

ADD EUR/1.3B/4

5. XXX: The use of the band 9 300-9 500 MHz by Earth exploration-satellite service (active) and space research service (active) is complementary to the band 9 500-9 800 MHz and is limited to systems that cannot be accommodated within the 9 500-9 800 MHz band and that require bandwidths larger than 300 MHz. The use of the band 9 800-9 900 MHz by Earth exploration-satellite service (active) and space research service (active) is limited to systems that cannot be accommodated within the 9 300-9 800 MHz band and that require bandwidths larger than 500 MHz.

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Reasons: Technical studies have considered SAR systems under the EESS (active) and demonstrate that narrow band systems present higher interference potential compared to wide band systems extending over the whole 9300-9800 MHz band. Acknowledging that the same conclusions obviously apply to other EESS systems and recognising further that narrow band EESS (active) systems can operate in the existing frequency band (9 500-9 800 MHz), this proposal allows to provide adequate bandwidth for wide-band EESS (active) while ensuring maximum protection to radiodetermination services allocated in the band. EESS (active) systems, requiring even larger bandwidth than those which can be accommodated in the band 9 300 – 9 800 MHz, would therefore further reduce the risk of interference to radiolocation and radionavigation systems. The band 9 800 – 10 000 MHz has alternatively been studied under Resolution 747 (WRC-03) with similar results regarding radiolocation as for the band 9 300 – 9 500 MHz. The fixed service, to which this band is allocated, will also not be affected according to studies. However, the concerns of some administrations with more extensive use of the FS allocation should be accommodated as proposed in footnote 5.YYY. As SRS (active) systems are operated in the vicinity of planets and celestial bodies or represent specific EESS (active) systems under development, it is assessed that this extension of 300 MHz to the SRS (active) will not create any potential harmful interference to other services in this band.

MOD EUR/1.3B/5

5.476A In the band 9 300-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radionavigation and radiolocation services. (WRC-07)

Reasons: *The upgrade of the radiolocation service provides the same regulatory protection to it over the whole tuning range and helps to fulfil the requirements of radiolocation operations. The extension of the EESS (active) allocation for SAR systems is required for the enhancement of the resolution of images taken with these instruments or the enlargement of the field of view of the Earth's surface, for global environmental monitoring.*

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MOD EUR/1.3B/6

ADD

5.YYY In the band 9 800-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not claim protection from, nor cause harmful interference to, stations of the fixed service operating under RR No. 5.477.

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Reasons: *The band 9 800-10 000 MHz is allocated to the fixed service on a secondary basis for all three ITU Regions. The band 9 800-10 000 MHz is allocated to the fixed service on a primary basis for some countries by footnote 5.477. Footnote 5.YYY, based on the proposed note 5.FS included in the CPM text, defines a protection requirement for the fixed service within the band 9 800-9 900 MHz, which is an extension band for systems of the Earth exploration-satellite service (active) and space research service (active) requiring a bandwidth wider than 500 MHz.*

SUP EUR/1.3B/7

RESOLUTION 747 (WRC-03)

Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9 000-9 200 MHz and 9 300-9 500 MHz, and possible extension of the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz.

Reasons: *Consequential to the above proposals. The suppression of the Resolution should be taken into consideration in conjunction with the upgrade to primary status of the radiolocation service allocation at 9 GHz under the same agenda item.*