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Regulatory procedure for satellite systems not subject to coordination and Earth stations

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Procedure for not subject to coordination are applicable to the following:

- For non-geostationary-satellite networks
 - For all the non-geostationary-satellite networks where the frequency bands/service are not subject to the coordination procedure under Section II of Article 9
- For geostationary-satellite networks
 - *Only for* the use of inter-satellite links of a geostationary space station communicating with a non-geostationary space station which are not subject to the coordination procedure under Section II of Article 9

What does it mean by *not subject to coordination*?

Coordination procedures are specified in Section II of Article 9

- Examples: No.9.7 for geostationary satellite networks, No.9.11A for coordination required in a footnote etc.

When we refer to “not subject to coordination”, it means the frequency assignments for the satellite networks or satellite systems are not subject to any of the coordination procedures spelt out in Section II of Article 9

However, they are subject to the following procedures of Article 9:

- The advance publication procedure of Section I of Article 9
- The procedures for commenting and resolution of difficulties of Sub-Section IA of Article 9

How to know if a frequency band for Non-GSO is subject to coordination under section II of Article 9?

- To know whether a frequency band is subject to coordination, check the footnotes in the **Table of Frequency Allocations in Article 5**
 - For NGSO satellite networks, pay particular attention to No.9.21, No.9.11A – No.9.14
 - For coordination under No.9.11A please note §2.3 of Rules of Procedure related to No.9.11A: the procedure is applicable to all other space and terrestrial services with respect to those satellite services having allocations with equal rights (check TABLE 9.11A-1 of the Rules of Procedure).

TABLE 9.11A-1

Applicability of the provisions of Nos. 9.11A-9.14 to stations of space services

1	2	3	4	5	
Frequency band (MHz)	Footnote No. in Article 5	Space services mentioned in a footnote referring to Nos. 9.11A, 9.12, 9.12A, 9.13 or 9.14, as appropriate	Other space services or systems to which Nos. 9.12 to 9.14 provision(s) apply equally, as appropriate	Applicable Nos. 9.12 to 9.14 provision(s), as appropriate	Terrestrial services No. 9.14 apply equ
137-137.025	5.208	MOBILE-SATELLITE (non-GSO)	SPACE OPERATION METEOROLOGICAL-SATELLITE SPACE RESEARCH	9.12, 9.12A, 9.13, 9.14	FIXED (5.204, 5.2) LAND MOBILE (5.2) MARITIME MOB AERONAUTICAL BROADCASTING
137.175-137.825	5.208	MOBILE-SATELLITE (non-GSO)	SPACE OPERATION (with the exception of short-duration mission (non-GSO) in accordance with Resolution 660 (WRC-19) (See No.5.209A)) METEOROLOGICAL-SATELLITE SPACE RESEARCH	9.12, 9.12A, 9.13, 9.14	FIXED (5.204, 5.2) LAND MOBILE (5.2) MARITIME MOB AERONAUTICAL BROADCASTING
137.025-137.175 137.825-138	5.208	Mobile-satellite (non-GSO)	---	9.12, 9.14	Fixed (in countries Nos. 5.204 and 5.2) Land mobile (in co in Nos. 5.204 and 5.2) Maritime mobile (in listed in Nos. 5.2) Aeronautical mobil those listed in N

Advance Publication Information (API)

- API is a **mandatory** procedure (No.9.1) before notification for all satellite network not subject to coordination procedure
- Regulatory date limit to bring into use: **7 years** from the date of receipt of the API
- Information required are specified in **Annex 2 of Appendix 4**, BR carries out examination for completeness and correctness
- No formal examination under No.11.31 is carried out
 - However BR checks in detail whether the frequency bands are subject or not subject to coordination
 - BR also advises on whether they are in accordance with the Table of Frequency Allocation, and if they are not, will require the indication under No.4.4
- Publication in API/A special section of the BRIFIC

Commenting and resolution of difficulties

Commenting procedures to API (No.9.3)

- Following the publication of API/A special section, other administrations can send comments within 4 months
- BR consolidate comments and publish in API/B special section

Cooperation and Resolution of Difficulties

- Both administrations shall endeavor to cooperate in joint efforts
- Either party can request for BR assistance

Commenting procedures to Notification

- In the notification, if there are changes in characteristics from the information published in API/A, other administrations can submit comments following the Part I-S publication. BR will publish the comments on its website (No.11.28.1)

Notification for recording in the Master Register

- Any frequency assignment to a transmitting station and to its associated receiving stations **shall be notified to the Bureau if the use of that assignment is capable of causing harmful interference to any service of another administration**; or if that assignment is **to be used for international radiocommunication**; or if it is desired to **obtain international recognition** for that assignment etc. (No.11.2)
- Notification must be received by the Bureau by the end of the **7-year regulatory limit** (No.11.44.1)
- Information required are specified **in Annex 2 of Appendix 4**, BR carries out examination for completeness and correctness
- **Technical and regulatory examination** under No.11.31 (compliance with Table of frequency allocation, verification of PFD limits etc.) will be conducted and **findings** will be given
 - Favourable – recorded in the Master International Frequency Register (MIFR)
 - Unfavourable – returned to the administration

Non-conforming assignments

- For assignments that are **not in conformity** with the Table of Frequency Allocations or the other provisions of the Radio Regulations, they **shall not cause harmful interference to, and shall not claim protection** from harmful interference (No.4.4)
- Such an assignment are still **required to be notified**, and they shall be recorded **for information purposes**
- If these non-conforming assignments cause harmful interference to those that are in conformity, the station using these non-conforming assignments **shall immediately eliminate this harmful interference** (No.8.5).
- When notifying the use of frequency assignments to be operated under No. 4.4, the notifying Administration shall provide a **confirmation** that
 - it has determined that these frequency assignments will not cause harmful interference into the stations of other administrations operating in conformity with the Radio Regulations and
 - measures it would need to take in order to comply with the requirement to immediately eliminate harmful interference

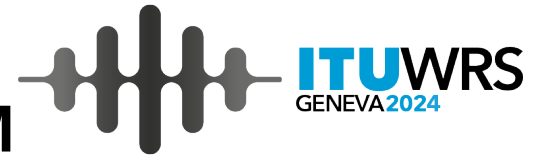
Notice returned to administration under No.11.36

- Frequency assignments that received unfavourable findings under No.11.31 (for example due to non-conformity with Table of frequency allocation or PFD exceedance) will be returned to the administration under No.11.36
- BR will send a communication to the administration explaining the reason for the unfavourable finding with an indication of the appropriate action
- Note that a notice returned under No.11.36 cannot be resubmitted under No.11.46 to benefit from retaining the original date of receipt
- The notice can be submitted again as long as it is still within the 7-year period, but it will be treated as a modification with a new date of receipt and new cost recovery fee, regardless of whether there are modified parameters, or with exactly the same parameters with only an additional request for No.4.4

Some specific regulatory procedures

- **Non-GSO networks identified as short duration mission - Resolution 32 (WRC-23)**
- NGSO-SDM must meet the following criteria
 - Using bands *not subject to coordination*
 - total number of satellites ≤ 10
 - Period of validity ≤ 3 years.....
- Special exemption for space operations service from coordination procedures if submitted as NGSO-SDM under Res32 :
 - 137.175-137.825 MHz downlink, exempt from No.9.21
 - 148-149.9 MHz uplink, exempt from No.9.21 only if PFD limit is met
- **Inter-satellite Links - Resolution 679 (WRC-23)**
 - Usage of the inter-satellite link for geostationary and non-geostationary-satellite networks under Resolution **679 (WRC-23)** are *not subject to coordination*
 - Frequency bands: 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz,
 - Service: Inter-satellite service
 - APIs to be submitted for both satellites of the inter-satellite link, followed by notifications

Some differences in the regulatory procedure for NGSO-SDM



- Period of validity cannot be extended beyond three years, after which BR will cancel the recorded assignments;
- The **date of bringing into use** of a NGSO-SDM shall be defined as the **launch date of the first satellite**
- Notification **to be submitted after the launch of the first satellite, but not more than 2 months after date of bringing into use**
- **Findings and characteristics** to be published within no more than 4 months from the date of receipt
- Provisions concerning modifications to recorded assignment (Nos. **11.43A**, **11.43B**) and suspension of frequency assignments (**11.49**) cannot be applied for NGSO-SDM
- Additional **commitment** required for Notification (item A.24.a of Appendix 4)
 - in the case that unacceptable interference caused by NGSO-SDM is not resolved, the administration shall undertake steps to eliminate the interference or reduce it to an acceptable level

Lunar communications

- Reference body = “L”
- Services:
 - Space research service and Space operation service,
 - any other services can only be submitted under No.4.4
 - Do not use allocations for deep space!
- Stations:
 - Orbiters, landers or rovers operating on the surface of the Moon, should be submitted as space stations or associated space stations
- Protection of Radio astronomy in the shielded zone of the Moon (Nos.22.22 – 22.25)
- WRC-27 AI 1.15 - WP7B

Additional data items required from WRC-23

Items in Appendix	A - GENERAL CHARACTERISTICS OF THE SATELLITE NETWORK OR SYSTEM, EARTH STATION OR RADIO ASTRONOMY STATION	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network or system not subject to coordination under Section II of Article 9	Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)	Notification or coordination of a non-geostationary-satellite network or system
A.25	COMPLIANCE WITH Nos. 22.22 to 22.25				
A.25.a	a commitment by the administration of compliance with Nos. 22.22, 22.23, 22.24 and 22.25 Required only for notification of a satellite network or system with ‘Moon’ as the reference body				+
A.25.b	a technical or operational description on how the notifying administration intends to ensure compliance with the requirements stipulated in Nos. 22.22 to 22.25, using, where appropriate, the relevant protection criteria from the ITU-R Recommendations and Reports Required only for notification of a satellite network or system with “Moon” as the reference body				+

Earth stations

Forms of coordination

Regulatory procedures

Coordination area



Forms of Coordination for Earth Stations

Cases	Provision
A specific or typical earth station (NGSO) for which the requirement to coordinate is included in a footnote referring to No.9.11A in respect of terrestrial stations	No.9.15
A specific or typical earth station earth station (GSO/NGSO) in respect of terrestrial stations	No.9.17
A specific earth station in respect of other earth stations operating in the opposite direction of transmission, or A typical mobile earth station in respect of specific earth stations operating in the opposite direction of transmission	No.9.17A
The requirement to seek the agreement of other administrations is included in a footnote to the Table of Allocation	No.9.21
A specific earth station in a GSO satellite network in the FSS in respect of a non-GSO satellite system in the FSS	No.9.7A

Regulatory Procedure for Earth Station - 1

For Nos. **9.15**, **9.17** and **9.17A**

- Use BR software GIBC/Ap7 to generate the coordination area and identify the administrations within the coordination area
- Requests for coordination with AP4 information shall be sent by the requesting administration to the identified administrations (No. **9.29**)
- Since this is coordination between administrations, with *no submission* to the Bureau, there is *no publication* by the Bureau, and *no identification of affected administrations by the Bureau*

Regulatory Procedure for Earth Station - 2

For Nos. **9.21**, **9.7A**

- Submit the requests for coordination with AP4 information to the Bureau (No.**9.30**)
- The Bureau will carry out examination and identify any administration with which coordination may need to be effected
- Results will be published in CR/C special sections of the BRIFIC

Regulatory Procedure for Earth Station - 3

Notification for recording under No.11.2

- Submit the Notification with AP4 information to the Bureau
- The Bureau verifies the completeness of the information, and carries out examination w.r.t. conformity with RR and coordination requirements
- The complete information will be published in Part I-S of the BRIFIC, and the findings will be published in Part II/III-S of the BRIFIC

Coordination Area

1.171 coordination area: When determining the need for coordination, the area surrounding an *earth station* sharing the same frequency band with *terrestrial stations*, or surrounding a transmitting *earth station* sharing the same bidirectionally allocated frequency band with receiving *earth stations*, beyond which the level of *permissible interference* will not be exceeded and coordination is therefore not required.

Appendix 5: identification of affected administrations

Reference of Article 9	Case	Frequency bands (and Region) of the service for which coordination is sought	Threshold/condition	Calculation method
No. 9.17 GSO, non-GSO/ terrestrial	A specific earth station or a typical mobile earth station in frequency bands above 100 MHz allocated with equal rights to space and terrestrial services, in respect of terrestrial stations, where the coordination area of the earth station includes the territory of another country, <u>with the exception of the coordination under No. 9.15</u>	Any frequency band allocated to a space service	The coordination area of the earth station covers the territory of another administration	Appendix 7

Appendix 7

- Determination of the coordination area -> implemented in BR GIBC/Ap7 software

Thank you!

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