



30TH WORLD RADIOCOMMUNICATION SEMINAR

24 - 28 October 2022

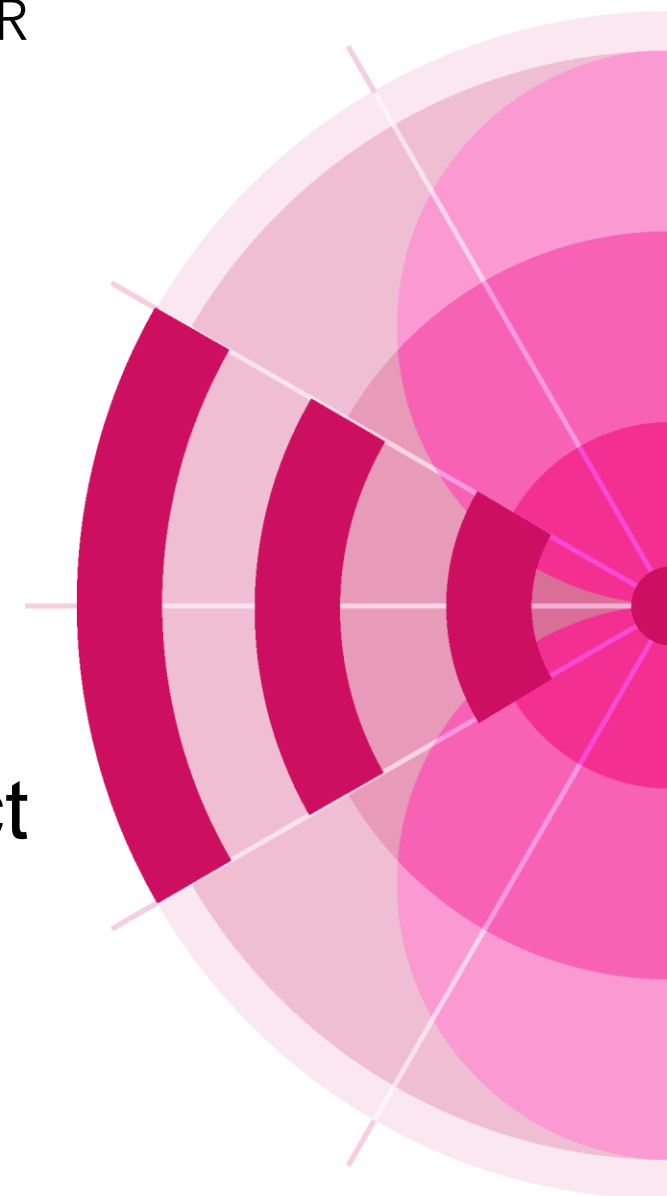
Geneva, Switzerland

Coordination and Notification Procedure and Harmful Interference

Regulatory Process for satellite systems subject
to coordination (Section II of Art 9) and for
Harmful Interference to space services

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Elements of Coordination Approach

- Publish (inform) a planned use of satellite network (earth station)
- Fulfil requirements mentioned in the RR
- Negotiate with concerned administrations and get agreements
- Record the coordinated assignments in the MIFR (Master International Frequency Register) to be taken into account by other administrations

Elements of Coordination Approach

| Elements | Relevant Provisions |
|--|---------------------------------|
| Procedures | Articles 9 & 11 |
| Submission format | Appendix 4 |
| Technical & operational limits | Article 5, Articles 21&22 etc. |
| Criteria and methods to identify coordination requirements | Appendix 5 (Appendices 7 and 8) |

Three main variants for Coordination Approach

- Procedure for Satellite networks Subject to Section II of Art 9 Coordination Procedure
= “CN” procedure
- Procedure for Satellite networks Not subject to Section II of Art 9 Coordination Procedure (some NGSO) = “AN” procedure
- Procedure for Earth Stations

Coordination Approach (CN)

Satellite networks Subject to Coordination Procedure

Coordination

C

Advanced
Publication
Information

Notification

N

Inform all administrations of
planned satellite network (GSO &
Non-GSO) and detail description
Obligatory negotiation
(Goal: interference-free
operation)

Start the clock
(7 years to bring into use)

Recording in
Master Register
(international
recognition)
Exam on the
result of
coordination
(Bringing into
use)



“CN” procedure / CR/C and API/C

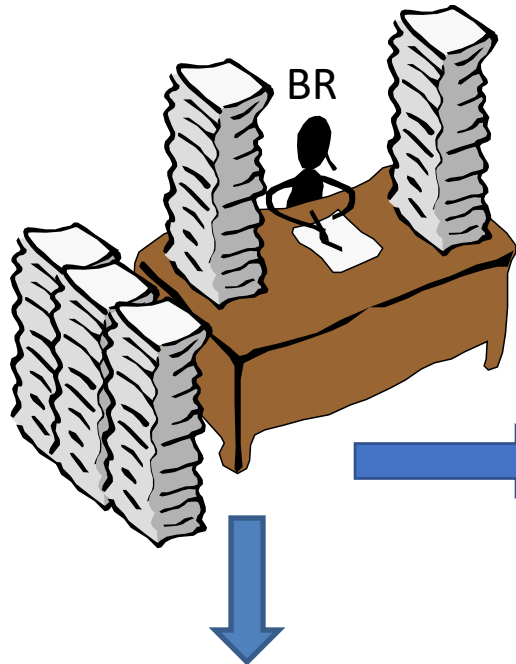
- **Section II, Article 9 “Procedure for effecting coordination”**
- **Inform all administrations of planned satellite network (CR/C publication)**
- **Examination and identification of coordination requirement by the Bureau (CR/C publication)**
- **If favorable finding, the assignments of the network are taken into account by the subsequent BR exams.**
- **Start of regulatory time limit to be recorded in the MIFR and brought into use (API/C publication)**

“CN” procedure / After CR/C

- Finalization of coordination requirement by the Bureau (CR/D and CR/E publication)
- Examination w.r.t. conformity with RR and coordination requirement at Notification stage

Which procedure should be used

- **“CN” procedure –Subject to Section II of Article 9**
 - **GSO network in non-planned services**
 - **NGSO network/system under Nos. 9.11, 9.11A or 9.21 coordination**
 - **See Article 5, AP5 and “ROP relating 9.11A” for bands and services for which Nos. 9.11, 9.11A or 9.21 coordination are applicable**
- **“AN” procedure**
 - **The other NGSO network/system**



Request for coordination
AP4 submission

API/C publication

“CN” procedure
CR/C

CR/C publication
Technical & regulatory Exam
+
Coordination requirements

Set regulatory period

Findings (No.9.35)
Affected adm (No.9.36)

Set priority subject to
Res.2 and No.9.53

No.9.35 Examination

Examination w.r.t. in conformity with Allocation Table and Other provisions Listed in RoP under No.11.31

Favourable and Unfavourable groups of frequency assignments are split

Findings: Favourable A- Unfavourable N-

Groups with findings N- are not examined further

No.9.36 Examination

Coordination Requirement for groups with “A –”

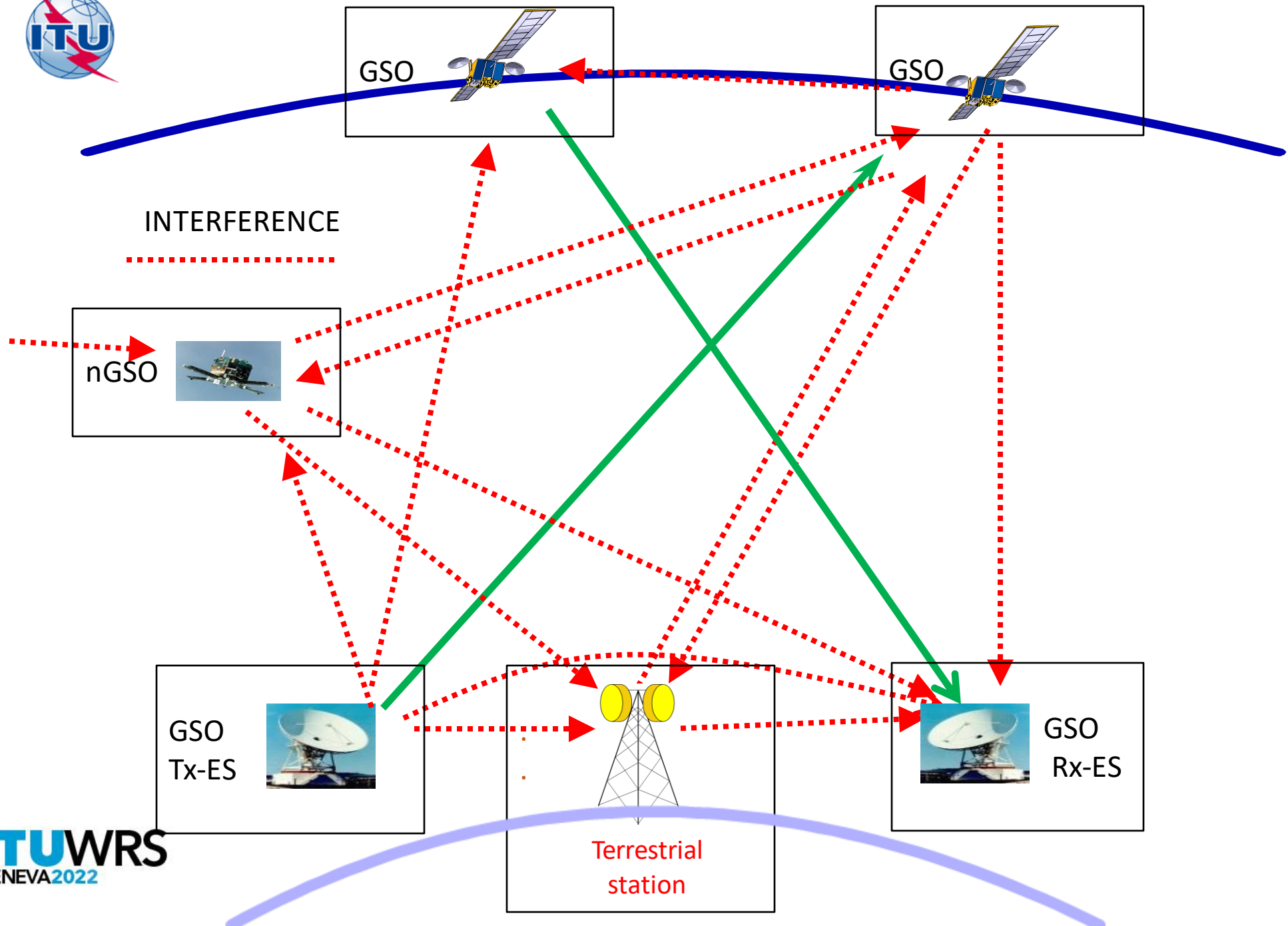
- Establish forms of coordination in Section II of Art 9

9.7, 9.7A, 9.7B, 9.11, 9.11A, 9.12, 9.12A, 9.13, 9.14,

9.21/A, 9.21/B, 9.21/C, Ap30/Art.7, Ap30A/Art.7

- Identify administrations with which coordination may need to be effected for various forms of coordination

- Identify list of satellite networks/systems/earth stations



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Forms of Coordination

No.9.6: Before BiU or Notify in cases below shall effect coordination (No.9.27/AP 5 -Table 5-1)

| Cases | Provision |
|--|--------------------|
| GSO to GSO | 9.7, Art7 AP30/30A |
| Certain ES of GSO to NGSO | 9.7A |
| NGSO to Certain ES of GSO | 9.7B |
| BSS (GSO/NGSO) to Terrestrial Services | 9.11 |
| NGSO to NGSO | 9.11A/9.12 |
| NGSO to GSO | 9.11A/9.12A |
| GSO to NGSO | 9.11A/9.13 |
| NGSO/GSO to Terrestrial Services | 9.11A/9.14 |
| the requirement to seek the <u>agreement</u> of other administrations is included in a footnote to the Table of Allocation | 9.21 |

Criteria and methods for identification

Ap 5 Table 5-1: Forms of coordination, Frequency bands, thresholds/conditions:

TABLE 5-1 (Rev.WRC-19)

Technical conditions for coordination
(see Article 9)

| Reference of Article 9 | Case | Frequency bands (and Region) of the service for which coordination is sought | Threshold/condition | Calculation method | Remarks |
|------------------------|--|--|--|--------------------|--|
| No. 9.7 GSO/GSO | A station in a satellite network using the geostationary-satellite orbit (GSO), in any space radiocommunication service, in a frequency band and in a Region where this service is not subject to a Plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a Plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission | 1) 3 400-4 200 MHz 5 725-5 850 MHz (Region 1) and 5 850-6 725 MHz 7 025-7 075 MHz 2) 10.95-11.2 GHz 11.45-11.7 GHz 11.7-12.2 GHz (Region 2) 12.2-12.5 GHz (Region 3) 12.5-12.75 GHz (Regions 1 and 3) 12.7-12.75 GHz (Region 2) and 13.75-14.8 GHz | i) Bandwidth overlap, and ii) any network in the fixed-satellite service (FSS) and any associated space operation functions (see No. 1.23) with a space station within an orbital arc of $\pm 7^\circ$ of the nominal orbital position of a proposed network in the FSS i) Bandwidth overlap, and ii) any network in the FSS or broadcasting-satellite service (BSS), not subject to a Plan, and any associated space operation functions (see No. 1.23) with a space station within an orbital arc of $\pm 6^\circ$ of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan iii) in the frequency band 14.5-14.8 GHz any network in the space research | | With respect to the space services listed in the threshold/condition column in the frequency bands in 1), 2), 2 <i>bis</i>), 3), 3 <i>bis</i>), 4), 5), 6), 7) and 8), an administration may request, pursuant to No. 9.41, to be included in requests for coordination, indicating the networks for which the value of $\Delta T/T$ calculated by the method in § 2.2.1.2 and 3.2 of Appendix 8 exceeds 6%. When the Bureau, on request by an affected administration, studies this information pursuant to No. 9.42, the calculation method given in |

Footnote refers Nos.9.11A – 9.14 or 9.21

No.9.11A (Coordination examined under No.11.32)

e.g. 5.208 The use of the band 137-138 MHz by the **mobile-satellite service** is subject to coordination under No. **9.11A**.

See also RoP Table 9.11A-1; other space services to which 9.11A applies

No.9.21 (Agreement examined under No.11.31)

e.g. 5.286 The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to **agreement** obtained under No. **9.21**

Other services to which No.9.11A Applies

RoP Table 9.11A-1: Other space services to which No.9.11A coordination applies are listed

TABLE 9.11A-1

Applicability of the provisions of Nos. 9.11A-9.15 to stations of space services

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------------------|---------------------------------|---|--|---|---|-------|
| 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 provisions(s) apply equally, as appropriate | Applicable Nos. 9.12 to 9.14 provision(s), as appropriate | Terrestrial services in respect of which No. 9.14 apply equally | Notes |
| 137-137.025 137.175-137.825 | 5.208 | MOBILE-SATELLITE (non-GSO) | ↓ SPACE OPERATION METEOROLOGICAL-SATELLITE SPACE RESEARCH | ↓ 9.12, 9.12A, 9.13, 9.14 | FIXED (5.204, 5.205) LAND MOBILE (5.204, 5.205) MARITIME MOBILE (5.204, 5.205) AERONAUTICAL MOBILE (OR) (5.204, 5.206) BROADCASTING (5.207) | 1 |
| 137.025-137.175 137.825-138 | 5.208 | Mobile-satellite (non-GSO) | ↓ --- | ↓ 9.12, 9.14 | Fixed (in countries other than those listed in Nos. 5.204 and 5.205) Land mobile (in countries other than those listed in Nos. 5.204 and 5.205) Maritime mobile (in countries other than those listed in Nos. 5.204 and 5.205) Aeronautical mobile (OR) (in countries other than those listed in Nos. 5.204 and 5.206) | |

Publication : CR/C Special Section

The BR publishes the information (network data) in a Special Section of BR IFIC on DVD-ROM as well as RADIOCOMMUNICATION BUREAU COMMENTS

- Relating to the Findings with respect to No.11.31 (No.9.35 examination)
- Relating to the coordination examination with respect to No.9.36
 - List of administrations and satellite networks/earth stations (9.36.2) for Nos.9.7, 9.7A and 9.7B are coordination requirements (coordination needs to be effected)
 - List of potentially affected administrations and satellite networks/systems for Nos.9.11-9.14 and 9.21 are for information only (9.36.1)



UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
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INTERNATIONAL TELECOMMUNICATION UNION
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| | | | | | |
|--|----------|---|----------------|--|--------------------------|
| RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATELITE | | ISPASAT-1-152.5W | | SECTION SPÉCIALE N° SPECIAL SECTION No. SECCIÓN ESPECIAL N.º | CR/C/530 |
| STATION TERRIENNE EARTH STATION ESTACIÓN TERRENA | | --- | | BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA | 2931 / 13.10.2020 |
| ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE | E | LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL | 152.5 W | NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN | 120520071 |
| RENSEIGNEMENTS REÇUS PAR LE BUREAU LE / INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL | | | | | 30.04.2020 |

Cette demande de coordination, reçue par le Bureau des radiocommunications en vertu du numéro 9.30 du Règlement des radiocommunications, a été examinée au titre des numéros 9.35 et 9.36 et est publiée conformément au numéro 9.38. Elle est subordonnée au type de coordination indiqué dans la colonne de gauche par un X dans la case pertinente.

This request for coordination, received by the Radiocommunication Bureau pursuant to No. 9.30 of the Radio Regulations, has been examined under Nos. 9.35 and 9.36 and is published in accordance with No. 9.38. It is subject to the form of coordination indicated in the left-hand column by an X in the relevant box

Esta solicitud de coordinación, recibida por la Oficina de Radiocomunicaciones de conformidad con el punto N° 9.30 del Reglamento de Radiocomunicaciones, se ha examinado de conformidad con los N°s 9.35 y 9.36 y se publica de conformidad con el N° 9.38. Está sujeta al formulario de coordinación indicado en la columna de la izquierda con una X en la casilla correspondiente.

| Type de coordination mentionné dans le Tableau I / Form of coordination referred to in Table I / Forma de coordinación mencionada en el cuadro I | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> | 9.7 | Conformément aux numéros 9.50 à 9.52 du Règlement des radiocommunications, les Administrations identifiées dans le Tableau I ci-après sont priées de communiquer leur décision à l'Administration responsable et au Bureau avant la date limite indiquée ci-dessous. | In accordance with Nos. 9.50-9.52 of the Radio Regulations, the Administrations identified in Table I below are requested to communicate their decision to the Responsible administration and the Bureau by the deadline indicated below. |
| | 9.7A | | |
| | 9.7B | | |
| <input checked="" type="checkbox"/> | AP30#7.1 | | |
| <input checked="" type="checkbox"/> | AP30A#7.1 | | |
| | RS539 | | |
| | RS33#3 | | |
| Type de coordination mentionné dans le Tableau II / Form of coordination referred to in Table II / Formulario de coordinación remitido al cuadro II | | | |
| | 9.11 | Les Administrations, énumérées ou non-énumérées dans le Tableau II ci-après, qui n'acceptent pas la demande de coordination au titre des numéros 9.11 à 9.14, 9.21 et RS33#2.1, sont priées de communiquer leurs observations à l'Administration responsable et au Bureau avant la date limite indiquée ci-dessous. Toute Administration qui ne réagira pas au titre du numéro 9.52 avant cette date limite sera considérée comme n'étant pas défavorablement influencée et, dans les cas couverts par les numéros 9.11 à 9.14 et RS33#2.1, les dispositions des numéros 9.48 et 9.49 s'appliqueront. | Administrations listed or not listed in Table II below, which do not agree to the request for coordination under Nos. 9.11 to 9.14, 9.21 and RS33#2.1 are requested to communicate their comments to the responsible administration and the Bureau by the deadline indicated below. Any administration not responding under No. 9.52 within this deadline shall be regarded as unaffected and, in the cases of Nos. 9.11 to 9.14 and RS33#2.1, the provisions of Nos. 9.48 and 9.49 shall apply. |
| <input checked="" type="checkbox"/> | 9.11A | | |
| | 9.12 | | |
| | 9.12A | | |
| | <input checked="" type="checkbox"/> 9.13 | | |
| | <input checked="" type="checkbox"/> 9.14 | | |
| <input checked="" type="checkbox"/> | 9.21/A | | |
| <input checked="" type="checkbox"/> | 9.21/B | | |
| <input checked="" type="checkbox"/> | 9.21/C | | |
| | RS33#2.1 | | |

De conformidad con los N°s 9.50-9.52 del Reglamento de Radiocomunicaciones, se solicita a las administraciones señaladas en el cuadro I a continuación que comuniquen su decisión a la administración responsable y a la Oficina antes del plazo indicado más abajo.

Se invita a las administraciones, enumeradas o no en el cuadro II, que no estén de acuerdo con la solicitud de coordinación de conformidad con los N°s 9.11 a 9.14, 9.21 y RS33#2.1 que comuniquen sus observaciones a la administración responsable y a la Oficina dentro del plazo indicado más abajo. Se considerará que toda administración que no responda de conformidad con el N° 9.52 dentro del plazo señalado, no está afectada y, en el caso de los N°s 9.11 a 9.14 y RS33#2.1, se aplicarán las disposiciones de los N°s 9.48 y 9.49

DATE LIMITE POUR LA DÉCISION / EXPIRY DATE FOR DECISION / FECHA LÍMITE PARA LA DECISIÓN

13.02.2021



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Comment on CR/C

- An administration having received a request for coordination (through publication of CR/C) shall examine the matter with respect to interference which may be caused to, or caused by, its own assignments
- inform the requesting administration and the BR within four months from the date of publication of the BR IFIC of either:
 - its agreement to the proposed use, or
 - its disagreement, giving reasons for the disagreement

CR/D Publication (No.9.53A)

- An Adm informs its disagreement under No.9.52 for No.9.11, 9.11A (9.12, 9.12A, 9.13, 9.14) and/or 9.21 using SpaceCom within 4 month
- No disagreement within 4 month means agreement to the proposed assignments in CR/C (No.9.52C)
- CR/D contains list of administrations having submitted their disagreement (No.9.53A)
- Final List of coordination requirements (Adms) published in CR/D

CR/E Publication (No.9.42)

- An Adm requests for inclusion or exclusion of adm/network as coordination requirement under No.9.41 for 9.7, 9.7A and/or 9.7B using SpaceCom within 4 month
- No request within 4 month means agreement to the requirements published in CR/C (No.9.43)
- CR/E contains list of administrations/ satellite networks, requested and confirmed by the Bureau for inclusion (No.9.42)
- Final List of coordination requirements (Adms and networks) published in CR/E + CR/C
- During coordination additional networks can be included with mutual agreement (No.9.42.1)

Article 11 Notification

- Assignments (final characteristics) have to be notified under Article 11 to be recorded in the MIFR for international recognition within the regulatory period
- In order to be recorded in the MIFR

Assignments shall

- Be in conformity with Allocation Table and Other provisions listed in RoP under No.11.31 (No. 11.31 examination)
- Complete required coordination requirements (No. 11.32 examination)

Or

- Be favourable in examination on probability of harmful interference (C/I) (No.11.32A examination)

Article 11 Notification

- Assignments can also be recorded in the MIFR if requested:
 - Under Nos.4.4/8.4
 - Unfavourable finding under No.11.31
 - Information only – no international recognition
 - Under No.11.41
 - Unfavourable finding under Nos.11.32 and 11.32A
 - Requirement of No.11.41.2 (indication of coordination effort) and No.11.42 (elimination of harmful interference)

- Bringing assignments into use has to be confirmed in the notification process (11.47 and 11.44B-E) within the regulatory period

Publication in Parts of the BR IFIC

- Part I-S - Acknowledgement of receipt, particulars of complete frequency assignment notices
- Part II-S - Findings (mostly favourable) resulting in the recording of the frequency assignment in the MIFR;
- Part III-S - Unfavourable Findings resulting in the return of the notice to the notifying administration.

Harmful Interference

Prohibition

All stations must not cause harmful interference (ITU CS Art. 45)

No transmission of false or deceptive signals (ITU CS Art. 47) or unnecessary / superfluous / misleading signals (RR No. 15.1)

Prevention

Study Group activities – Sharing Studies (ITU-R Recommendations)
Frequency Allocation Table (RR Art.5)
Sharing Criteria (RR Art.5, 21, 22 etc)
Coordination Notification Procedure (RR Art.9&11)

Resolution

Reporting (RR Section VI of Art 15, RR Appendix 10)
SIRRS (Tool for reporting and requesting assistance)
Request for Assistance of the BR (RR No.13.2)
Radio Regulations Board's decisions

Resolution of Harmful Interference with a help of International Monitoring System

International Monitoring System to help in the elimination of harmful interference (RR Art 16 – RR No.20.12 List VIII)

Memorandum of Understanding between BR and administrations having satellite-monitoring facilities to address cases of harmful interference (Res.186 (REV.BUCHAREST, 2022))

The information about the source of the interference can be used by concerned administrations to resolve a case of harmful interference (RR Art 15) and by the Radio Regulations Board to make a recommendation (RR 13.2 and Convention Art 10)

Thank you!

ITU – Radiocommunication Bureau

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