

ITUEvents

ITU World Radiocommunication Seminar 2018

3-7 December 2018
Geneva, Switzerland

www.itu.int/go/ITU-R/WRS-18

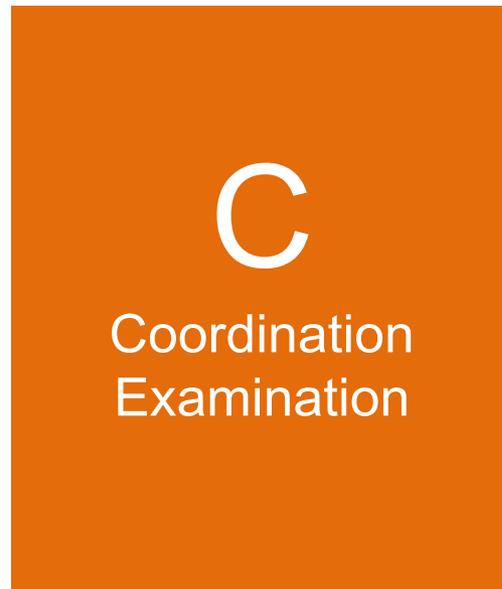


Introduction to
Coordination and
Regulatory
Examination

Cessy Karina
BR/SSD/SSC

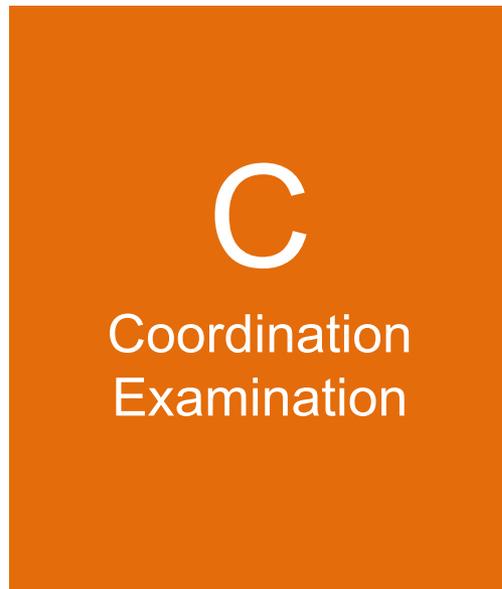
ITU HQ Geneva,
5 December, 2018

Completeness/validation Process



CR/C Publication in BR IFIC DVD

Conformity with
Radio Regulations
(No. 9.35 of RR)



Coordination
Requirements
(No. 9.36 of RR)



CR/C Publication in BR IFIC DVD

Expectation

OBSERVATIONS DU BUREAU DES RADIOCOMMUNICATIONS

Relatives à la Conclusion conformément au N° 11.31

FAVORABLE pour toutes les assignations de fréquence.

无线电通信局的意见

根据第11.31款的审查结果

所有频率指配均**合格**。

RADIOCOMMUNICATION BUREAU COMMENTS

Relating to the Findings with respect to No. 11.31

FAVOURABLE for all frequency assignments.

ЗАМЕЧАНИЯ БЮРО РАДИОСВЯЗИ

Относительно Заключения по п. 11.31

БЛАГОПРИЯТНОЕ для всех частотных присвоений.

OBSERVACIONES DE LA OFICINA DE RADIOCOMUNICACIONES

Relativas a la Conclusión según N.º 11.31

FAVORABLE para todas las asignaciones de frecuencia.

تعليقات مكتب الاتصالات الراديوية

المتعلقة بالنتيجة وفقاً للرقم 31.11

موافقة لجميع تخصيصات التردد.

RADIOCOMMUNICATION BUREAU COMMENTS

Relating to the Findings with respect to No. 11.31

Frequency assignments 11 075, 11 575, 12 350, 12 625 and 13 525 MHz and those in the 37 500 – 42 500 MHz band

FAVOURABLE

Note: The finding is based on the Rule of Procedure and its annex concerning No. 21.16 in steerable beams B1FR, B1R, B3R, BSR, DQR, HB1R, HB3R, HBSR and HDQR. There is at least one position of the steerable beams where the applicable PFD limits are met without any reduction of the notified power density.

Frequency assignments in the 11 700 – 12 200 MHz band

FAVOURABLE

Coordination under No. 9.14 applies (No. 5.488 refers). No administrations were identified as potentially affected in application of the Rule of Procedure No. 5.488 for assignments in steerable beams B2R and HB2R. Maximum excess over coordination trigger limits is ≤ 7.1 dB.

Reality

RADIOCOMMUNICATION BUREAU COMMENTS

Relating to the Findings with respect to No. 11.31

Frequency assignment 11 950 MHz

UNFAVOURABLE

No allocation for Fixed-Satellite Service [Space-to-Earth] in Regions 1 and 3.

Frequency assignment 12 625 MHz

UNFAVOURABLE

No allocation for Fixed-Satellite Service [Space-to-Earth] in Region 2.

Frequency assignments 21 700 MHz and those in the 21 400 – 22 000 MHz band

UNFAVOURABLE

No allocation for Fixed-Satellite Service [Space-to-Earth].

Frequency assignment 5 787.5 MHz

UNFAVOURABLE

No allocation for Fixed-Satellite Service [Earth-to-space] in Regions 2 and 3.

Fixed beam TKA, frequency assignments 17 700, 17 750, 17 800 MHz and in the 17 800 – 18 100, 18 100 – 18 800, 18 800 – 19 700 MHz bands with maximum power density ≥ -55 dBW/Hz and maximum peak power ≥ 4.5 dBW

UNFAVOURABLE

The power flux density limits specified in No. 21.16 are exceeded.

Frequency assignments 1 424.75, 1 564, 1 574, 1 584, 1 594, 1 604, 2 535, 2 595, 17 250, 17 300 MHz and in the 2 535 – 2 655, 25 300 – 27 000 MHz bands

UNFAVOURABLE

Out-of-band. Class of station not in accordance with the Table of Frequency Allocations.

Frequency assignments 12 200 MHz and in the 11 700 – 12 200, 12 200 – 12 500, 12 500 – 12 700 MHz bands

UNFAVOURABLE

Out-of-band. Service area not in accordance with the Table of Frequency Allocations

Frequency assignments 13 770, 13 790 MHz and in the 13 790 – 14 030 MHz band to transmitting earth station TYPICAL 0.75

UNFAVOURABLE

Not in accordance with No. 5.502
• Antenna diameter < 1.2 m

Frequency assignments 13 770 and 13 790 MHz to transmitting earth station TYPICAL 2.4 with maximum power density ≥ -43.5 dBW/Hz and maximum peak power ≥ 7 dBW

UNFAVOURABLE

Not in accordance with No. 5.503

- e.i.r.p. density > 39.3 dB(W/40 kHz) in the 13.77 – 13.78 GHz band.

Frequency assignments 13 770 and 13 790 MHz to transmitting earth station TYPICAL 1.2 with maximum power density ≥ -37.5 dBW/Hz and maximum peak power ≥ 13 dBW

UNFAVOURABLE

Not in accordance with No. 5.503

- e.i.r.p. density > 33.5 dB(W/40 kHz) in the 13.77 – 13.78 GHz band.

Frequency assignments 13 770, 13 790 MHz and in the 13 790 – 14 030 MHz band to transmitting earth station TYPICAL 2.4 with maximum power density ≥ -43.5 dBW/Hz and maximum peak power ≥ 11.4 dBW

UNFAVOURABLE

Not in accordance with No. 21.13A
• Off-axis EIRP limits are exceeded



unfavourable
= not protected & protect
others



BR IFIC 2884 International Frequency Information Circular (Space Services) 27.11.2018

BR IFIC Publications
 Databases
 Preface
 Cost Recovery
 BR Software
 BR Circular Letters

Special Sections
 A/30B/A6B
 A/VA
 A/VB
 A/VB
 C/D
 C/D
 C/E
 RES4

Parts I-S, II-S, III-S
 ALL
 PART I-S
 PART II-S
 PART III-S

Administrations
 ALL
 BOL
 CAN
 CHN
 E
 F
 G

NEWS
 Show Removal

Print instructions
 Print current list
 Print publications in current list
 Print Table of Contents

BR IFIC PUBLICATIONS – TABLE OF CONTENTS

SPECIAL SECTION / PART	PLAN PART	RESPONSIBLE ADMINISTRATION		NAME OF THE SPACE STATION	ORB. POS.	NAME OF THE ASSOCIATED EARTH STATION	IDENTIFICATION NUMBER
		ADM.	INTERG. ORG.				
CR/C/3144 MOD-1		PNG		PACIFHSAT KA-75E	75		118520016 / 1
CR/C/3722 MOD-2		F		MCSAT-2 LEO-1	NGSO		114520331 / 1
CR/C/3723 MOD-3		F		MCSAT-2 LEO-2	NGSO		117520523 / 1
CR/C/3726 MOD-2		F		MCSAT-2 MEO-2	NGSO		117520524 / 1
CR/C/3738 MOD-2		LIE		SECOM-1	NGSO		117520250 / 1
CR/C/3739 MOD-2		NOR		STEAM-1	NGSO		117520252 / 1
CR/C/3740 MOD-1		NOR		STEAM-2	NGSO		117520242 / 1
CR/C/4668 MOD-1		CAN		KELYPSSIS	NGSO		118520098
CR/C/4695 MOD-1		CHN		OXSAT	NGSO		118520211 / 1
CR/C/4821		BOL		TKSAT-2	-34.8		118520195
CR/C/4822		G		METHERA-A	NGSO		118520204
CR/C/4823		G		SKYNET-34W-KQ	-34		118520205

Search Exit

عربي English 中文 Español Français Русский

100% favourable possible ?

Conformity with
Radio Regulations
(No. 9.35 of RR)



Coordination
Requirements
(No. 9.36 of RR)



output: CR/C Publication in
BR IFIC DVD

Conformity with Radio Regulations

(No. 9.35 of RR)





Conformity with Table of
Frequency Allocation &
other provisions (PFD/EIRP
Limits etc.)

Nos. 9.35, 11.31 of RR, RoP11.31

Conformity with RR (No. 9.35 of RR)

Summarize network

- Frequency bands
- Direction of transmission
- Class of station/Services
- Beams/Service area

E/R	Freq	BW	MinFreq	MaxFreq	ClsStn	GU1/A	GU2/A	IC1/A	IKU/A
E	3422	40000	3402	3442	EC			A	
E	3462	40000	3442	3482	EC			A	
E	3502	40000	3482	3522	EC			A	
E	3542	40000	3522	3562	EC			A	
E	3582	40000	3562	3602	EC			A	
E	3622	40000	3602	3642	EC			A	
E	3662	40000	3642	3682	EC			A	
E	3702	40000	3682	3722	EC			A	
E	3742	40000	3722	3762	EC			A	
E	3782	40000	3762	3802	EC			A	
E	3822	40000	3802	3842	EC			A	
E	3862	40000	3842	3882	EC			A	
E	3902	40000	3882	3922	EC			A	
E	3942	40000	3922	3962	EC			A	
E	3982	40000	3962	4002	EC			A	
E	4022	40000	4002	4042	EC			A	
E	4062	40000	4042	4082	EC			A	
E	4102	40000	4082	4122	EC			A	

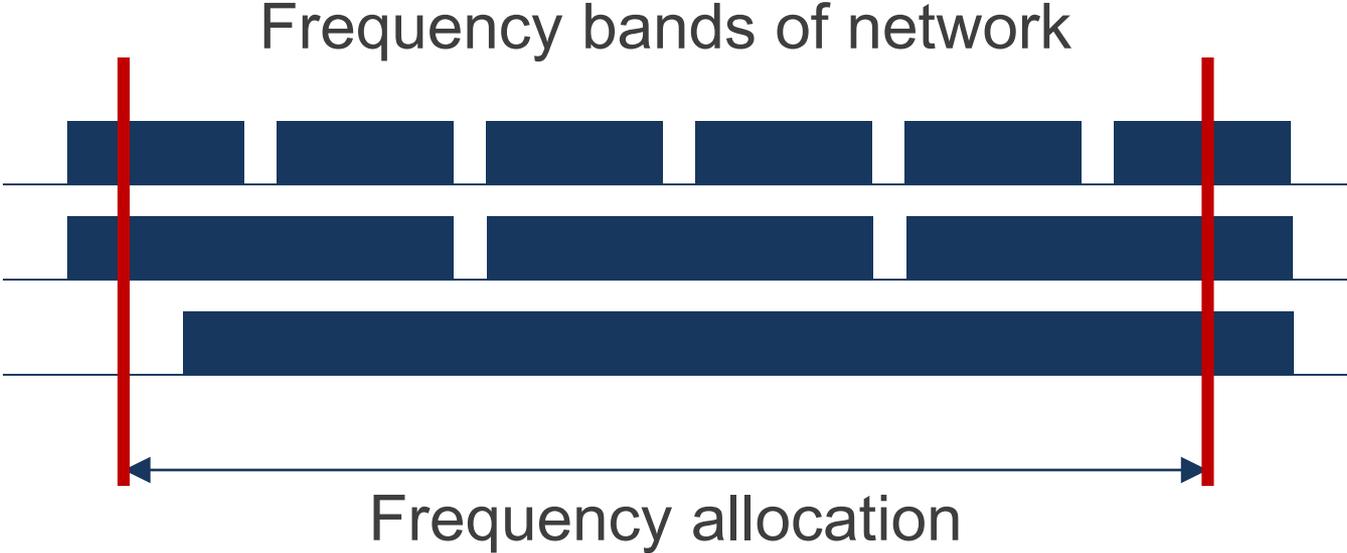
Example: MS Access query on SRS
(com_el, grp, freq, srv_cls tables)

Compare with Table of Frequency Allocation (Article 5 of Radio Regulations)

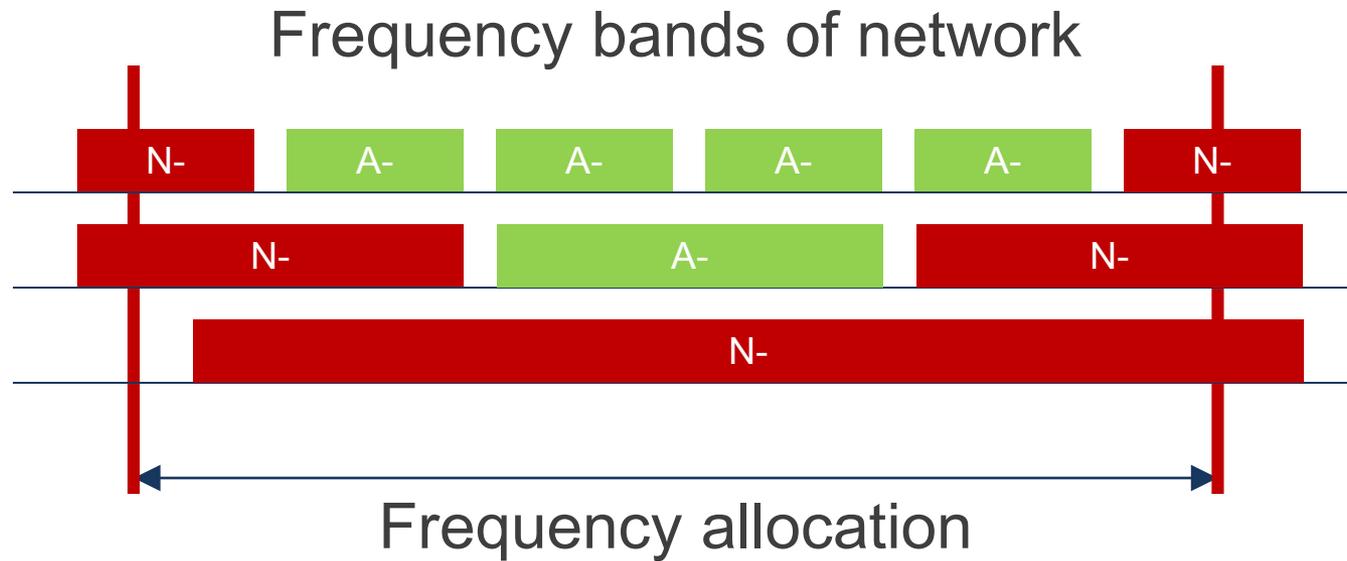
Region 1	Region 2	Region 3
3 400-3 600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile 5.430A Radiolocation	3 400-3 500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.431A Radiolocation 5.433 5.282	3 400-3 500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.432B Radiolocation 5.433 5.282 5.432 5.432A
5.431	3 500-3 700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.433	3 500-3 600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433
3 600-4 200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3 700-4 200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	3 600-3 700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.435

Relevant footnotes

Conformity with RR (No. 9.35 of RR)



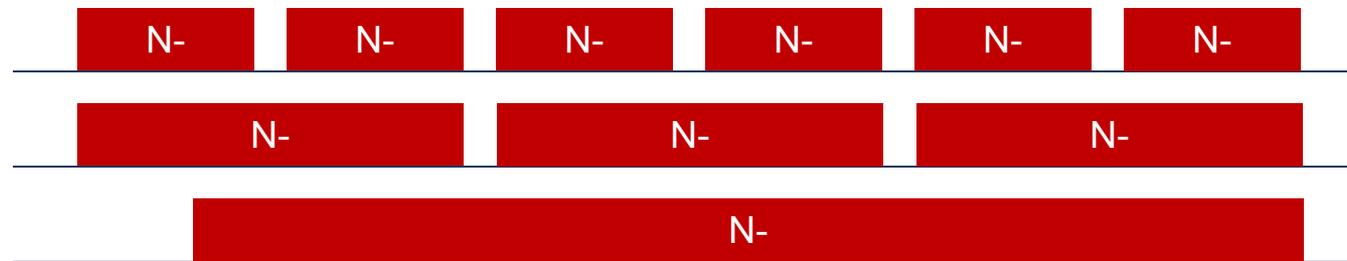
Conformity with RR (No. 9.35 of RR)



**Unfavourable (N-)
if not within allocation**

Conformity with RR (No. 9.35 of RR)

Frequency bands of network



**Unfavourable (N-)
if wrong Service or Direction of Transmission**

Compare with Table of Frequency Allocation (Article 5 of Radio Regulations)

4 800-5 250 MHz

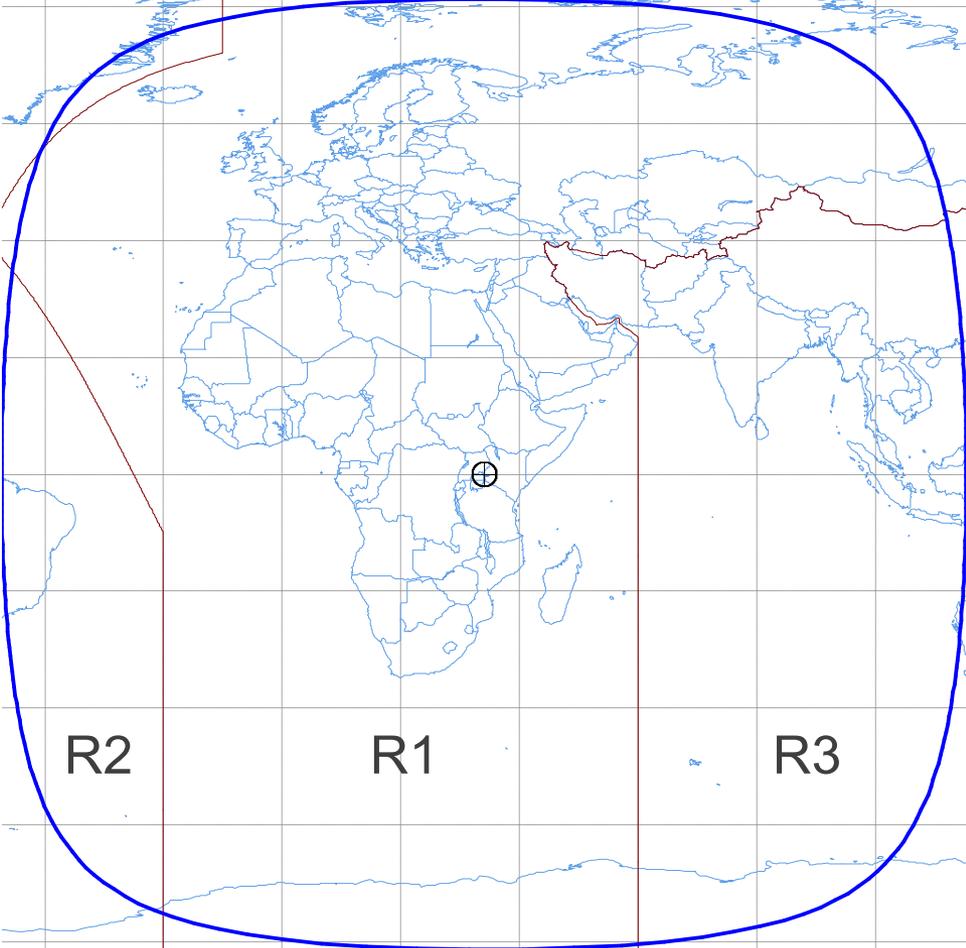
Allocation to services		
Region 1	Region 2	Region 3
5 150-5 250	FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B AERONAUTICAL RADIONAVIGATION 5.446 5.446C 5.447 5.447B 5.447C	

5.447A The allocation to the fixed-satellite service (Earth-to-space) in the band 5 150-5 250 MHz is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A.

**Unfavourable (N-)
if GSO system, or no mobile satellite service**

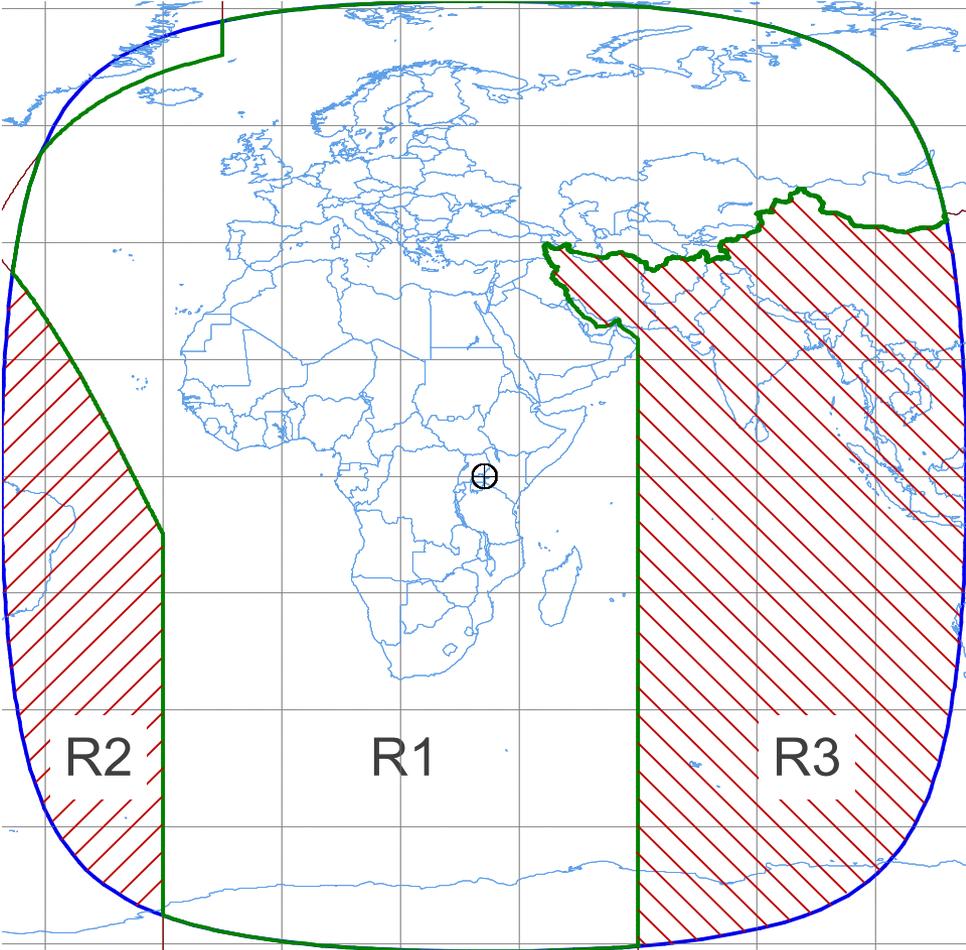
Conformity with RR (No. 9.35 of RR)

Service area of network



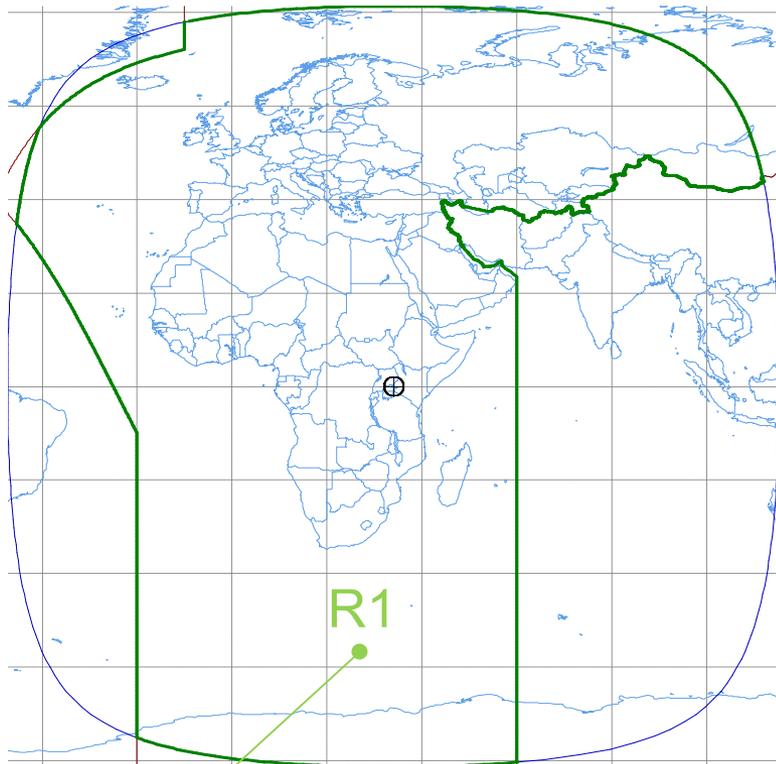
Conformity with RR (No. 9.35 of RR)

If allocation to Region 1 only

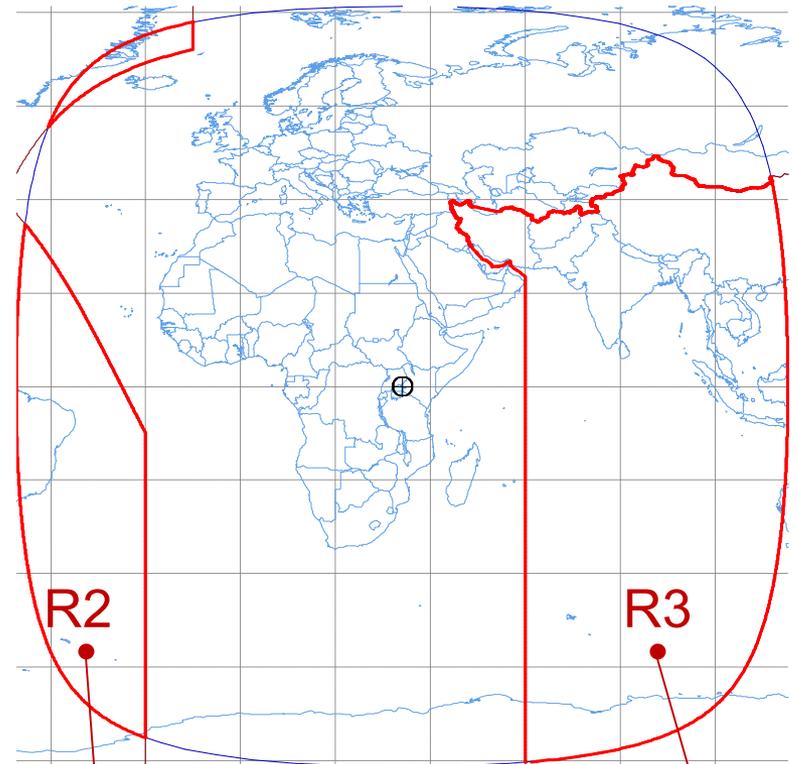


Conformity with RR (No. 9.35 of RR)

Service area is split



Favourable
(A-)

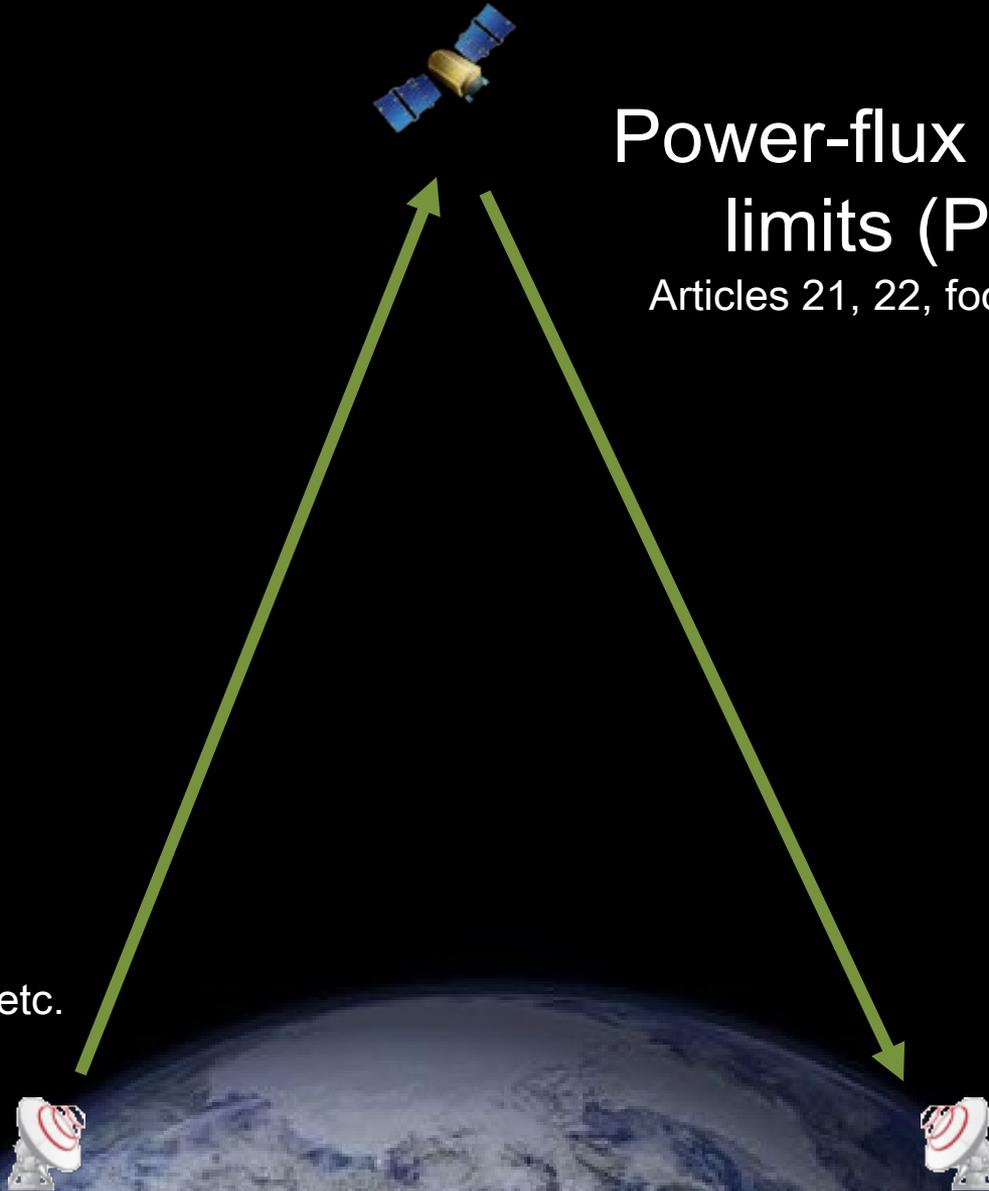


Unfavourable
(N-)

Conformity with RR (No. 9.35 of RR)

**Power-flux density
limits (PFD)**
Articles 21, 22, footnotes, etc.

EIRP limits
Articles 21, footnotes, etc.



Conformity with RR (No. 9.35 of RR)

Thursday
Space Workshop – WRS18

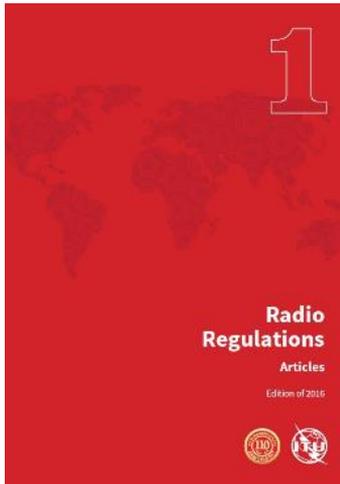
Power-flux density
limits (PFD)



EIRP limits

GIBC Program v8 (Graphical
Interface for Batch Calculations)

Top 3 Unfavourable Findings

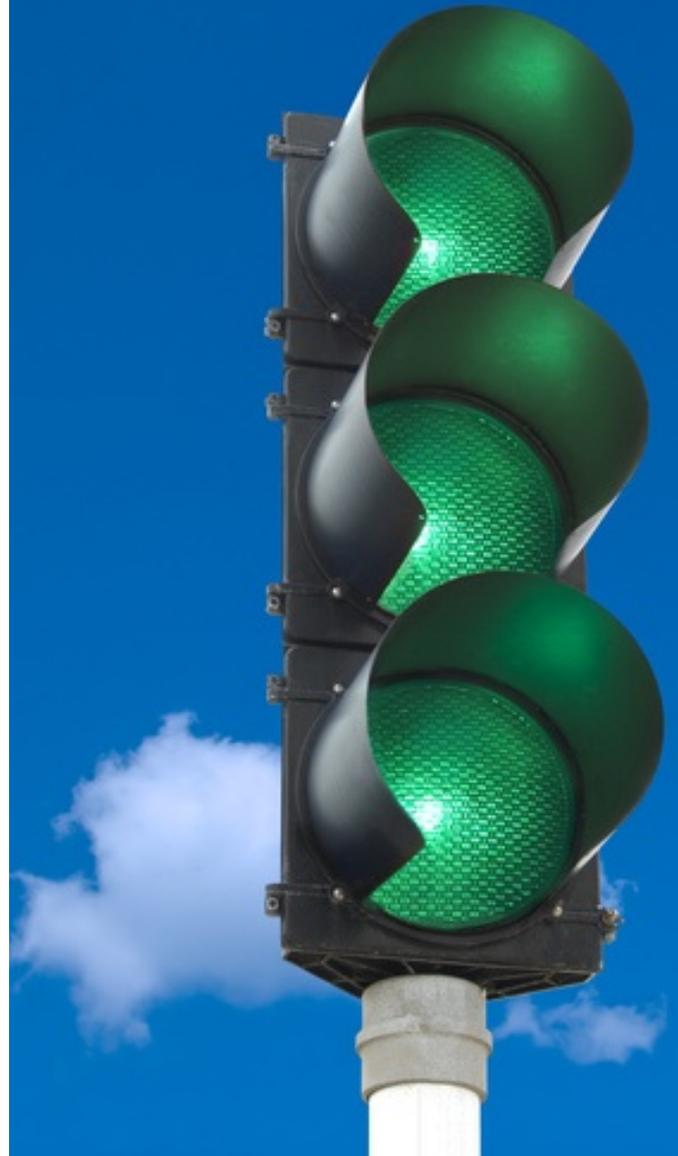


1. **EIRP/PFD hard limits exceeded**
Check GIBC/PFD results
2. **Not in accordance with ToFA**
Check frequency bands, direction of transmission, class of station, service area
3. **PFD limits exceeded for steerable beams and no method provided**
Submit reference to Annex 1 of RoP on No. 21.16

B3b1b - Method required in ROP 21.16

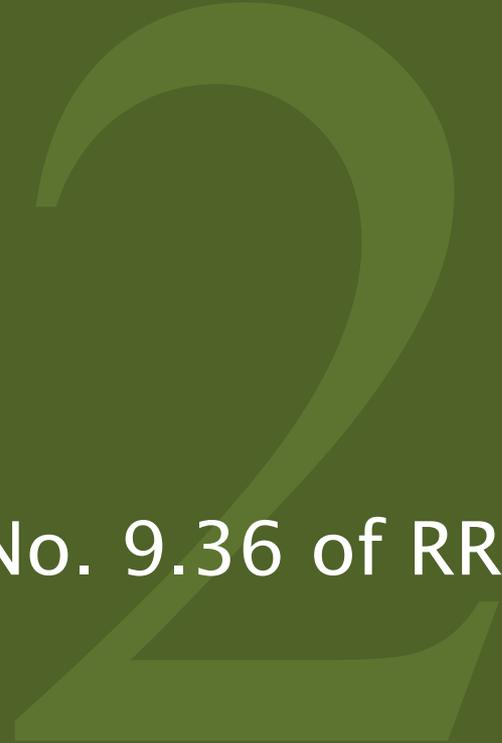
- Applicable PFD will be met by applying the method in Annex 1 of ROP
- Others, enter the attachment no.

Only favourable
frequency
assignments
will proceed ...



Coordination requirements

(No. 9.36 of RR)



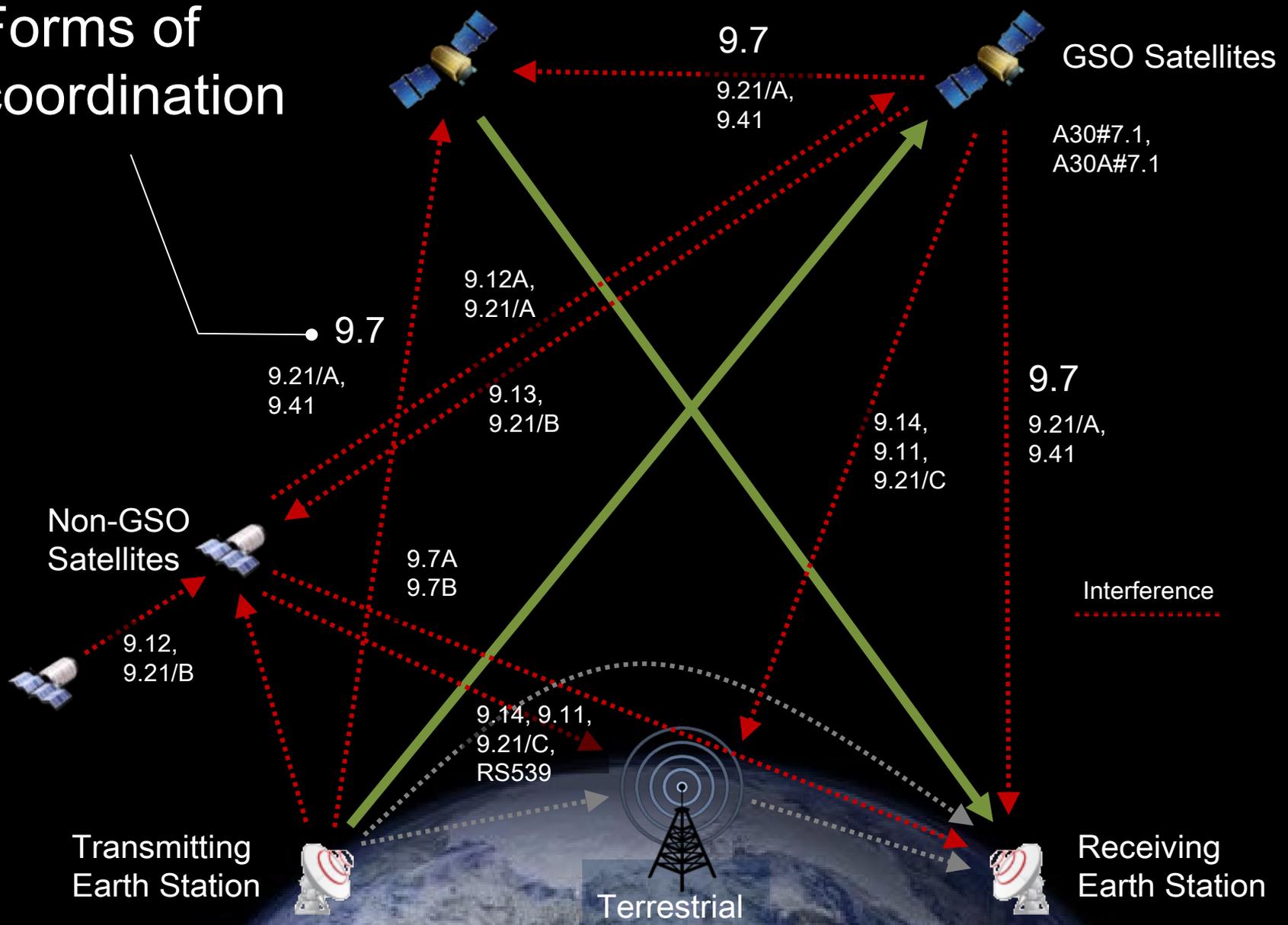


Identify any administration
with which coordination
may need to be effected

No. 9.36 of RR

Coordination requirements (No. 9.36 of RR)

Forms of coordination



Coordination requirements (No. 9.36 of RR)

Forms of coordination

- GSO vs GSO
- Large ES vs NGSO
- GSO/NGSO vs NGSO
- GSO/NGSO vs Terrestrial
- BSS (non-Plan) vs Terrestrial
- GSO vs Plan
- Agreement with administrations

9.7

9.21/A,
9.41

GSO Satellites

A30#7.1,
A30A#7.1

9.7

9.7A, 9.7B

9.11A (9.13, 9.12, 9.12A)

9.11A (9.14)

9.11, RS539

A30#7.1, A30A#7.1

9.21

9.12,
9.21/B

9.14, 9.11,
9.21/C,
RS539

Transmitting
Earth Station

Terrestrial

Receiving
Earth Station



Coordination requirements (No. 9.36 of RR)

GSO		GSO		GSO	NGSO	GSO	NGSO	LES	NGSO
9.11	9.7	A30A#7.1	A30#7.1	9.13	9.12	9.11		9.7A	9.7B
9.14	9.21/A			9.21/B	9.12A	9.14			
9.21/C	RS33#3				9.21/A	9.21/C			
RS33#2.1					9.21/B	RS33#2.1			

Type de coordination mentionné dans le Tableau I	
X	9.7
	9.7A
	9.7B
X	AP30#7.1
	AP30A#7.1
	RS539
	RS33#3
Type de coordination mentionné dans le Tableau II	
	9.11
	9.11A
	9.12
	9.12A
	9.13
X	9.14
	9.21/A
	9.21/B
	9.21/C
	RS33#2.1

Identify forms of coordination

Article 9 & Appendix 5 for criteria
 Article 5 footnotes (9.21, 9.11A)
 Rules of Procedure (9.11A)
 Articles 7 of Appendices 30, 30A
 Resolutions 33, 539



Sub-Section IIA – Requirement and request for coordination

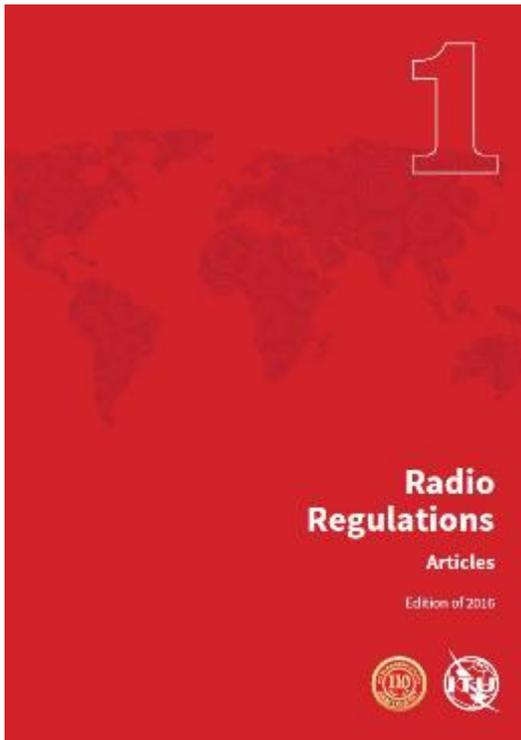
- 9.6** Before an administration^{14, 15, 16} notifies to the Bureau or brings into use a frequency assignment in any of the cases listed below, it shall effect coordination, as required, with other administrations identified under No. 9.27: (WRC-03)
- 9.7** *a)* for a station in a satellite network using the geostationary-satellite orbit, 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 coordination between earth stations operating in the opposite direction of transmission.
- 9.7A** *b)*^{17, 18} for a specific earth station in a geostationary-satellite network in the fixed-satellite service in certain frequency bands, in respect of a non-geostationary-satellite system in the fixed-satellite service: (WRC-2000)
- 9.7B** *c)*^{17, 18} for a non-geostationary-satellite system in the fixed-satellite service in certain frequency bands, in respect of a specific earth station in a geostationary-satellite network in the fixed-satellite service. (WRC-2000)



shared on an
satellite service

a footnote to
of Nos. 9.12

- 9.12** *f)* for a station in a satellite network using a non-geostationary-satellite orbit, for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision or to No. 9.11A, in respect of any other satellite network using a non-geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission; (WRC-2000)
- 9.12A** *g)* for a station in a satellite network using a non-geostationary-satellite orbit, for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision or to No. 9.11A, in respect of any other satellite network using the geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission; (WRC-2000)
- 9.13** *h)* for a station in a satellite network using the geostationary-satellite orbit, for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision or to No. 9.11A, in respect of any other satellite network using a non-geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission; (WRC-2000)
- 9.14** *i)* for a transmitting space station of a satellite network for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision or to No. 9.11A in respect of receiving stations of terrestrial services where the threshold value is exceeded; (WRC-07)



1

Radio Regulations

Articles

Edition of 2016



5.218 *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. 9.21. The bandwidth of any individual transmission shall not exceed ± 25 kHz.

5.219 The use of the band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148-149.9 MHz.

5.220 The use of the frequency bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-15)



5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. 9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. 5.256A. (WRC-03)

5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. 9.11A.



TABLE 5-1 (Rev. WRC-15)
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 (Region 1) and 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 band 14.5-14.8 GHz any network in the space research service (SRS) or FSS 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 SRS or FSS not subject to a Plan		With respect to the space services listed in the threshold/condition column in the frequency bands in 1), 2), 2 <i>bis</i>), 3), 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 § 2.2.1.2 and 3.2 of Appendix 8 shall be used
		transmission	mobile earth station antenna exceeds -10 dB(W/4 kHz)		
No. 9.14 Non-GSO/ terrestrial, GSO/ terrestrial	A space station in a satellite network in the frequency bands for which a footnote refers to No. 9.11A or to No. 9.14, in respect of stations of terrestrial services where threshold(s) is (are) exceeded	1) Frequency bands for which a footnote refers to No. 9.11A; or 2) 11.7-12.2 GHz (Region 2 GSO FSS) 3) 5 030-5 091 MHz	1) See § 1 of Annex 1 to this Appendix; In the bands specified in No. 5.414A, the detailed conditions for the application of No. 9.14 are provided in No. 5.414A for MSS networks or 2) In the band 11.7-12.2 GHz (Region 2 GSO FSS): -124 dB(W/(m ² · MHz)) for $0^\circ \leq \theta \leq 5^\circ$ -124 + 0.5 ($\theta - 5$) dB(W/(m ² · MHz)) for $5^\circ < \theta \leq 25^\circ$ -114 dB(W/(m ² · MHz)) for $\theta > 25^\circ$ where θ is the angle of arrival of the incident wave above the horizontal plane (degrees) 3) Bandwidth overlap	1) See § 1 of Annex 1 to this Appendix	

2

Radio Regulations

Appendices

Edition of 2016





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 (GHz)	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 in respect of which No. 9.14 apply equally	Notes
19.3-19.6	5.523B	FIXED-SATELLITE (limited to non-GSO MOBILE-SATELLITE SERVICE feeder links)	↑	---	9.12, 9.12A, 9.13	---
	5.523D	FIXED-SATELLITE (GSO with coordination information received as of 18.11.1995 and non-GSO MOBILE-SATELLITE SERVICE feeder links) (see also No. 5.523C)	↓	---	---	---
19.6-19.7	5.523D	FIXED-SATELLITE (GSO with coordination information received as of 22.11.1997 and non-GSO MOBILE-SATELLITE SERVICE feeder links) (see also No. 5.523E)	↓	FIXED-SATELLITE (GSO with coordination information received as of 22.11.1997 and non-GSO) (see also No. 5.523E)	↑ 9.12, 9.12A, 9.13	---
19.7-20.1	5.484A	FIXED-SATELLITE (non-GSO)	↓	MOBILE-SATELLITE (Non-GSO) (Region 2)	↓ 9.12	---
20.1-20.2	5.484A	FIXED-SATELLITE (non-GSO)	↓	MOBILE-SATELLITE (Non-GSO)	↓ 9.12	---
27.5-28.6	5.484A	FIXED-SATELLITE (non-GSO)	↑	FIXED-SATELLITE (Non-GSO) in the band 27.5-27.501 GHz (5.53E)	↓ 9.12	---
28.6-29.1	5.523A	FIXED-SATELLITE	↑	---	9.12, 9.12A, 9.13	---
29.1-29.5	5.536A	FIXED-SATELLITE (GSO) (see also Nos. 5.523C and 5.523E) and non-GSO MOBILE-SATELLITE	↑	---	9.12, 9.12A, 9.13	---

International Telecommunication Union

Rules of Procedure

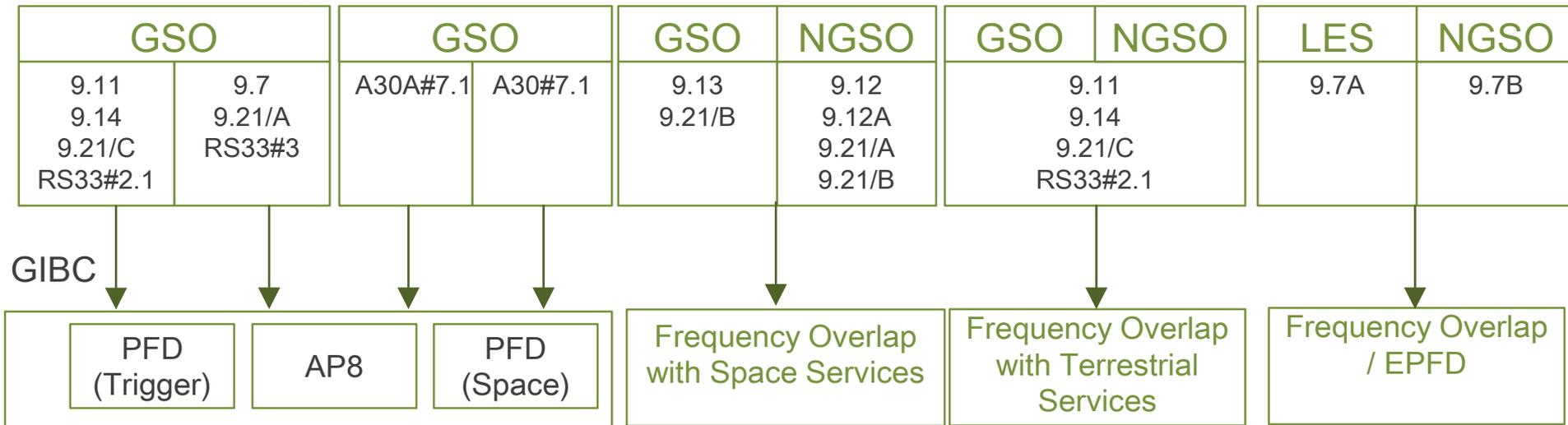
Approved by the Radio Regulations Board

for the application, by the Radiocommunication Bureau, of the provisions of the Radio Regulations, Regional Agreements, Resolutions and Recommendations of World and Regional Radiocommunication Conferences

Edition of 2017



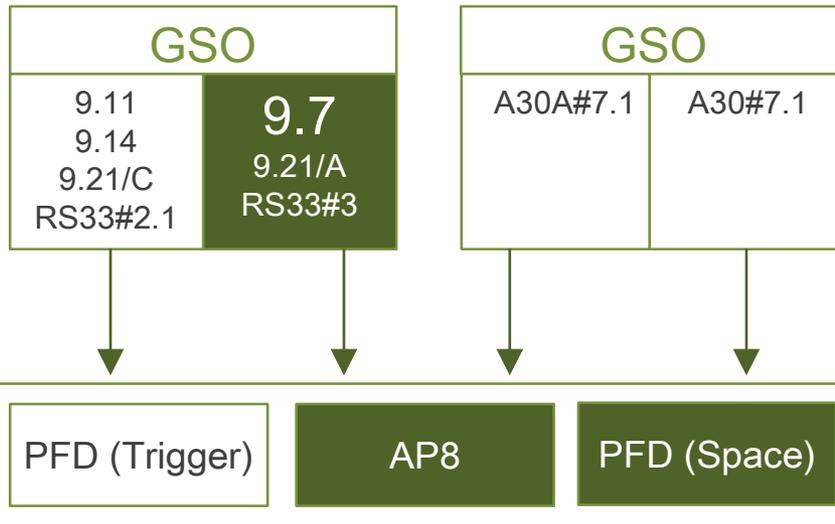
Coordination requirements (No. 9.36 of RR)



Just a quick reminder!

Thursday - Friday
Space Workshop – WRS18

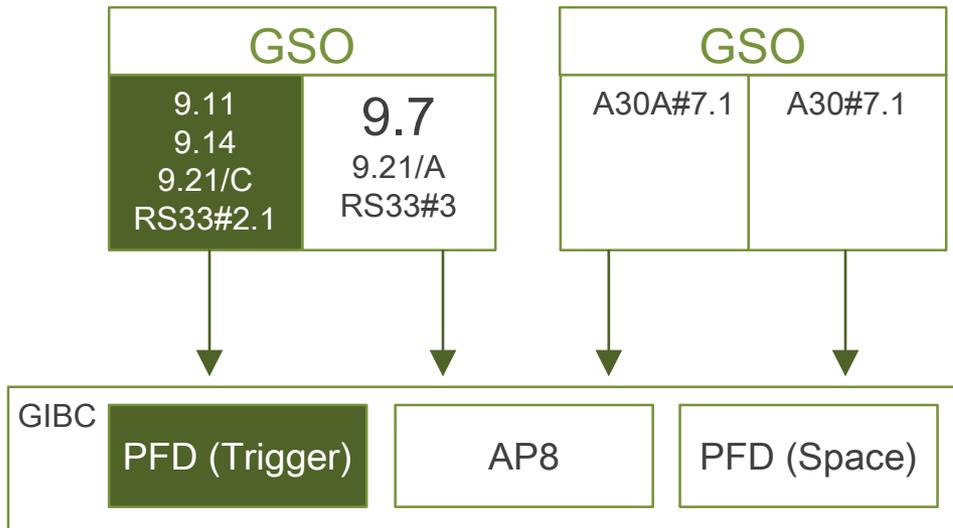
Coordination requirements (No. 9.36 of RR)



90%

of satellite networks
in SRS are GSO
(No. 9.7: GSO vs GSO)

Coordination requirements (No. 9.36 of RR)



Coordination requirements (No. 9.36 of RR)

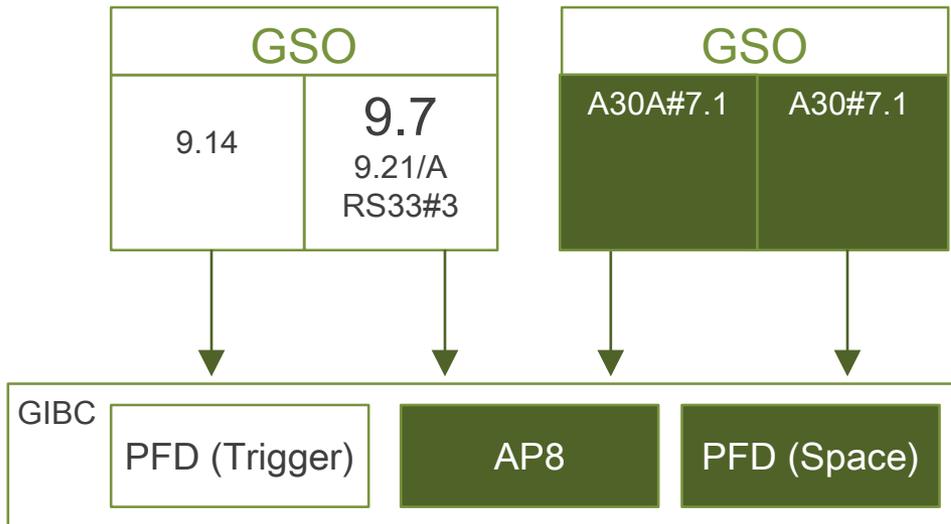


		Tableau I / Table I / Cuadro I / 表一 / Таблица I / الجدول I		
Disposition / Provision / Disposición / 条款 / Положение / الحكم		Résumé des conditions régissant la coordination	Summary of coordination requirements	Resumen de los requisitos de coordinación
		协调要求概述	Сводные потребности в координации	موجز متطلبات التنسيق
X	9.7	ALG, ARG, ARM, ARS/ARB, ARS, AUS, AZE, B, BLR, BOL, BUL, CAN, CBG, CHN, CLM/ASA, CLM, CTI/RAS, CYP, CZE, D, E, EGY, ETH, F/EUT, G, GRG, HOL, I, IND, INS, IRN, IRQ, ISR, J, JOR, KAZ, KOR, LAO, LUX, MCO, MEX, MLA, MLD, MNG, NCG, NIG, NOR, NZL, OMA, PAK, PNG, QAT, RUS/IK, RUS, S/NOT, S, SNG, SUL, THA, TON, TUR, UAE, UKR, USA, VTN		
	9.7A			
	9.7B			
X	AP30#7.1	AFS, BDI, BOT, BUL, CVA, CYP, EGY, F/EUT, GRG, I, JOR, KEN, KWT, LBN, LSO, LUX, MCO, MOZ, MWI, NOR, RRV, S, SWZ, SYR, TZA, UAE, YEM, ZMB, ZWE		
X	AP30A#7.1	AUS, BUL, CAN, CHN, CYP, EGY, F/EUT, FSM, G, HOL, I, IND, INS, ISR, J, LSO, LUX, MCO, MWI, PNG, QAT, RUS/IK, RUS, S, UAE, USA, YEM		
	RS539			
	RS33#3			

“SpaceCom - Comments under No. 9.41” CR/E Space Workshop – WRS18

Summary of affected administrations for entire network (mandatory)

Tableau II / Table II / Cuadro II / 表二 / Таблица II / جدول II			
Disposition / Provision / Disposición / 條款 / Положения / حكم		Administrations susceptibles d'être défavorablement influencées (à titre d'information uniquement, voir numéro 9.36.1)	Potentially affected administrations (for information only, see No. 9.36.1)
		可能受影响的主管部门(仅供参考, 见第 9.36.1款)	Administraciones posiblemente afectadas (sólo para información, véase el N° 9.36.1)
		إدارات محتمل أن تتأثر سلباً غير موث (انظر الرقم 9.36.1، على سبيل الإطلاع فقط)	
X	9.11		
X	9.11A		
	9.12		
	9.12A		
X	9.13	AUS, CAN, CHN, D, G, HOL, ISR, LIE, LUX, NOR, NZL, PNG, RUS/IK, RUS, SLM, USA	
X	9.14	AFG, AFS/MRN, AFS, AGL, ALB, ALG, AND, ARG*, ARM, ARS*, ATG, AUS/HMD, AUT*, AZE, B*, BAH, BDI, BEL*, BEN, BFA, BHR*, BIH*, BLR, BOL, BOT, BRB*, BUL, CAF, CAN*, CHI*, CHN*, CLM, CLN*, CME, COD, COG, COM, CPV, CTI, CVA, CYP, CZE*, D*, DJI*, DMA, DNK/FRO, DNK/GRL, DNK*, DOM, E/CNR*, E*, EGY*, ERI*, EST, ETH, FIN*, G/AIA, G/ASC, G/BER, G/DCA, G/FLK, G/GCA, G/GIB, G/MSR, G/SHN, G/TCA, G/TRC, G/VRG, G*, GAB, GEO, GHA, GMB, GNB, GNE, GRC*, GRD, GUI, GUY, HNG*, HOL/ABW, HOL/BES, HOL/CUW, HOL/SXM, HOL, HRV*, HTI, I*, IND*, IRL*, IRN*, IRQ, ISL, ISR*, JOR*, KAZ, KEN, KGZ*, KNA, KWT*, LBN, LBR, LBY, LCA, LIE, LSO, LTU, LUX, LVA*, MAU/RGD, MAU, MCO, MDA, MDO, MKD*, MLD, MLJ, MLT, MNE*, MOZ, MRC*, MTN, MWI, NGR, NIO*, NMB, NOR/BVT, NOR*, NPL, OMA*, PAK*, POL, POR/AZR, POR/MDR, POR*, PRG*, PRU, QAT*, ROU*, RRW, RUS*, S*, SDN, SEN*, SEY, SMR, SOM, SRB*, SRL, SSD, STP, SUI/I*, SUI*, SUR, SVK*, SVN*, SWZ, SYR*, TCD, TGO, TJK, TKM, TRD, TUN, TUR*, TZA, UAE*, UGA, UKR, URG*, USA/D*, USA/PTR*, USA/VIR*, USA, UZB, VCT, VEN, XZZ/AOE, XZZ/XBY, XZZ/XGZ, XZZ/XWB, YEM*, ZMB, ZWE.	
X	9.21/A ¹		
	9.21/B ¹		
	9.21/C ¹		
	RS33#2.1		

*Les Administrations énumérées disposent d'une assignation aux services de Terre avec chevauchement inscrite dans le Fichier de référence international des Fréquences.

*The listed Administrations have an overlapping terrestrial assignment recorded in the MIFR.

*Las administraciones enumeradas tienen una asignación terrenal superpuesta inscrita en el Registro Internacional de Frecuencias.

*列表中的主管部门与频率登记表中记录的陆地频率重叠

*Перечисленные выше администрации имеют присвоение наземным станциям с перекрытием, записанным в Международном справочном регистре частот.

*تتوفر للإدارات المعقدة تردد مخصص لخدمات الأرض متراكب ومسجل في السجل الأساسي الدولي للترددات.

¹ 9.21/A, 9.21/B et 9.21/C – au titre du numéro 9.21, administrations ayant des réseaux OSG, des réseaux non-OSG et des stations de Terre, respectivement.

¹ 9.21/A, 9.21/B and 9.21/C – Under No. 9.21, administrations with GSO networks, Non-GSO networks and terrestrial stations, respectively.

¹ 9.21/A, 9.21/B y 9.21/C – De conformidad con el N° 9.21, administraciones con redes OSG, redes no OSG y estaciones terrestres, respectivamente.

¹ 9.21/A, 9.21/B и 9.21/C – согласно 9.21款,分别为有对地静止卫星轨道网络、非对地静止卫星轨道网络和地面站的主管部门

¹ 9.21/A, 9.21/B и 9.21/C – в соответствии с п. 9.21 администрации, имеющие сети GSO, сети НГСО и наземные станции, соответственно.

¹ 9.21/A, 9.21/B و 9.21/C – بموجب الرقم 9.21، إدارات لها شبكات مستقرة بالنسبة إلى الأرض وشبكات غير مستقرة بالنسبة إلى الأرض ومحطات للأرض على التوالي.

Summary of affected administrations for entire network (for info)
Comment within 4 months, else agreement

“SpaceCom - Comments under Nos. 9.11- 9.14/9.21” CR/D Space Workshop – WRS18

SECTION SPECIALE / SPECIAL SECTION / SECCIÓN ESPECIAL / 特节 / СПЕЦИАЛЬНАЯ СЕКЦИЯ / القسم الخاص										CR/C/3186	
A	A1a Sat. Network	UKMSAT-A3	A1f1 Notifying adm.	G	A1f3 Inter. sat. org.		BR1 Date of receipt	09.05.2012	BR20/BR21 BR IFIC no./part	2732/	
	BR6a/BR6b Id. no.	112520178	BR3a/BR3b Provision reference	9.6	C		BR2 Adm. serial no.				

Recouvrement des coûts / Cost recovery / Recuperación de costes / 成本回收 / Возмещение расходов / استرداد التكاليف

B1a Beam designation	B2 Emi-Rcp	BR8 Action code	BR7a Group id.	BR9 Action code	13A Conformity with RR	C3a Assigned freq. band	BR47 Frequency band (MHz)	BR15 Provision reference	BR53 Nb of freq.	C4a Class of station	BR54 Nb of emiss.	BR55 Nb of units	
SIX	R		112665648		A-----	250000	13750 - 14000	9.7	1	EC	1	1	
			112665649		A-----	250000	13750 - 14000	9.7	1	EC	1	1	
			112665650		A-----	500000	14000 - 14500	9.7	1	EC	1	1	
			112665651		A-----	500000	14000 - 14500	9.7	1	EC	1	1	
			112665652		A-----	500000	14000 - 14500	9.7	1	EC	1	1	
			112665653		A-----	500000	14000 - 14500	9.7	1	EC	1	1	
			112665654		A-----	250000	13750 - 14000	9.7	1	ED	1	1	1
			112665655		A-----	500000	14000 - 14500	9.7	1	ED	1	1	1
			112665656		A-----	250000	13750 - 14000	9.7	1	EC	1	1	
FIVE	E		112665633		N-----	250000	12500 - 12750		1	EC	1	1	
FOUR	E		112665634		A-----	250000	12500 - 12750	9.7, A30#7.1	1	EC	1	1	
			112665635		A-----	250000	12500 - 12750	9.7, A30#7.1	1	EC	1	1	
			112665636		A-----	250000	12500 - 12750	9.7, A30#7.1	1	EC	1	1	
			112665637		A-----	250000	12500 - 12750	9.7, A30#7.1	1	EK, ER	1	2	
ONE	E		112665638		A-----	250000	10950 - 11700	9.7	2	EC	1	2	
			112665639		A-----	250000	10950 - 11700	9.7	2	EC	1	2	
			112665640		A-----	250000	10950 - 11700	9.7	2	EC	1	2	
			112665641		A-----	250000	10950 - 11700	9.7	2	EK, ER	1	4	
THREE	E		112665642		A-----	500000	11700 - 12200	9.14, 9.7, A30#7.1	1	EC	1	1	
			112665643		A-----	500000	11700 - 12200	9.14, 9.7, A30#7.1	1	EC	1	1	
			112665644		A-----	500000	11700 - 12200	9.14, 9.7, A30#7.1	1	EC	1	1	
			112665645		A-----	500000	11700 - 12200	9.14, 9.7, A30#7.1	1	EC	1	1	
			112665646		A-----	500000	11700 - 12200	9.14, 9.7, A30#7.1	1	EK, ER	1	2	
TWO	E		112665647		N-----	250000	10950 - 11700		2	EC	1	2	
BR57 Category											C2		
BR56 Total number of units											33		

Conformity with RR
A-: Favourable
N-: Unfavourable

Forms of coordination

I. Nécessité d'une coordination au niveau du groupe
 一、需要在组的层次进行的协调

I. Coordination requirements at group level
 I. Потребности в координации на уровне группы

I. Requisitos de coordinación a nivel de grupo
 I. متطلبات التنسيق على مستوى المجموعة

9.7 (DT/T)

9.7 (CA)

Administrations identifiées au titre du N° 9.7 par : 根据第9.7款识别的主管部门:				Administrations identified under No. 9.7 by : Администрации, идентифицированные согласно п. 9.7:			Administraciones identificadas según N.º 9.7 por : الإدارات المحددة وفقاً للرقم 7.9 بموجب:				
B1a Beam designation	B2 Emi-Rcp	BR7a Group id.	GHz	Delta T/T Delta T/T	Delta T/T Дельта T/T	Delta T/T T/T دلتا	Arc de coordination 协调弧	Coordination Arc Дуга координации	Arco de coordinación قوس التنسيق		
SIX	R	112665648	13				B CHN ISR LUX USA	E RUS/IK	HOL RUS	I UAE	
		112665649	13				B CHN ISR LUX USA	E RUS/IK	HOL RUS	I UAE	
		112665650	14				B CHN I ISR UAE USA	CLM LUX	E RUS/IK	HOL RUS	
		112665651	14				B CHN I ISR UAE USA	CLM LUX	E RUS/IK	HOL RUS	
		112665652	14				B CHN I ISR UAE USA	CLM LUX	E RUS/IK	HOL RUS	
		112665653	14				B CHN I ISR UAE USA	CLM LUX	E RUS/IK	HOL RUS	
		112665654	13				B CHN ISR LUX USA	E RUS/IK	HOL RUS	I UAE	
		112665655	14				B CHN I ISR UAE USA	CLM LUX	E RUS/IK	HOL RUS	
		112665656	13				B CHN ISR LUX USA	E RUS/IK	HOL RUS	I UAE	
FOUR	E	112665634	12				CHN LUX	E RUS/IK	HOL RUS	I UAE	ISR USA
		112665635	12				CHN LUX	E RUS/IK	HOL RUS	I UAE	ISR USA
		112665636	12				CHN LUX	E RUS/IK	HOL RUS	I UAE	ISR USA
		112665637	12				CHN LUX	E RUS/IK	HOL RUS	I UAE	ISR USA

CR/C/3186

Page / Página / 页 / стр. / الصفحة 22

Coordination requirements at group level



II. Liste des réseaux à satellite (voir N° 9.36.2)
二、卫星网络清单(见第9.36.2款)

II. List of satellite networks (see No. 9.36.2)
II. Список спутниковых сетей (см. п. 9.36.2)

II. Lista de redes de satélite (véase el N.º 9.36.2)
II. قائمة بالشبكات الساتلية (انظر الرقم 2.36.9)

Liste des réseaux à satellite pour lesquels Delta T/T > 6% est identifié dans le cas I uniquement (réseau utile et réseau brouilleur utilisant en partage la même bande de fréquences dans le même sens de transmission) ou qui sont situés à l'intérieur de l'arc de coordination (au titre du N° 9.7)

List of satellite networks for which Delta T/T > 6% identified under Case I only (wanted and interfering networks sharing the same frequency band in the same direction of transmission) or which are within the coordination arc (under No. 9.7)

Lista de redes de satélites para los que Delta T/T > 6% identificadas con arreglo al Caso I solamente (Redes deseada e interferente que comparten la misma banda de frecuencias en la misma dirección de transmisión) o que se encuentran dentro del arco de coordinación (según N.º 9.7)

仅在情形一（使用网络和干扰网络在同一传输方向上共用同一频段）中由于Delta T/T > 6%，或落入协调弧之内而得到确认的卫星网络清单（依据 9.7）

Список спутниковых сетей, для которых критерий Дельта T/T > 6% определен в рамках только случая I (полезная и мешающая сети, совместно использующие одну и ту же полосу частот для передачи в одном и том же направлении) или которые располагаются в пределах координационной дуги (согласно № 9.7)

قائمة الشبكات الساتلية التي تكون فيها النسبة دلتا T/T > 6% محددة في الحالة I فقط (الشبكات المطلوبة والمسببة للتداخل تتقاسمان نطاق التردد نفسه في اتجاه الإرسال نفسه) أو التي تدخل ضمن قوس التنسيق (بموجب الرقم

(7.9)

A1f1 Notifying adm.	A1f3 Inter. sat. org.	A1a Sat. Network	A4a1 Orbital long.	BR3b Category of notif.	BR25 A/T	BR6a Id. no.	BR26 Causing interference	BR27 Receiving interference	BR28 Detected by coord. arc
ALG		ALCOMSAT-24.8W	24.8 W	C	A	113520121	C	R	
		ALCOMSAT-27.6W	27.6 W	C	A	114520218	C	R	
ARG		ARSAT-C	81 W	C	A	110520406	C	R	
		ARSAT-D	81 W	C	A	113520066	C	R	
		ARSAT-F	91.5 W	C	A	115520101	C	R	
		ARSAT-G	72 W	C	A	115520102	C	R	
		ARSAT-H	38.5 W	C	A	115520103	C	R	
		P-P-SAT-1	81 W	N	A	105500330	C		

Liste des réseaux à satellite pour lesquels Delta T/T > 6% est identifié dans le cas II uniquement (réseau utile et réseau brouilleur utilisant en partage la même bande de fréquences dans des sens de transmission opposés (utilisation bidirectionnelle)) (au titre du N° 9.7)

List of satellite networks for which Delta T/T > 6% identified under Case II only (wanted and interfering networks sharing the same frequency band in opposite directions of transmission (bidirectional use)) (under No. 9.7)

Lista de redes de satélites para los que Delta T/T > 6% identificadas con arreglo al Caso II solamente (Redes deseada e interferente que comparten la misma banda de frecuencias en direcciones opuestas de transmisión (uso bidireccional)) (según N.º 9.7)

仅在情形二（使用网络和干扰网络在相反传输方向上共用相同频段（双向使用））中由于Delta T/T > 6%而得到确认的卫星网络清单（依据 9.7）

Список спутниковых сетей, для которых критерий Дельта T/T > 6% определен в рамках только случая II (полезная и мешающая сети, совместно использующие одну и ту же полосу частот при передаче в противоположных направлениях (реверсивное использование частот)) (согласно № 9.7)

قائمة الشبكات الساتلية التي تكون فيها النسبة دلتا T/T > 6% محددة في الحالة II فقط (الشبكات المطلوبة والمسببة للتداخل تتقاسمان نطاق التردد نفسه في اتجاهي الإرسال المتعاكسين (استخدام ثنائي الاتجاه)) (بموجب الرقم 7.9)

A1f1 Notifying adm.	A1f3 Inter. sat. org.	A1a Sat. Network	A4a1 Orbital long.	BR3b Category of notif.	BR25 A/T	BR6a Id. no.	BR26 Causing interference	BR27 Receiving interference
ARS	ARB	ARABSAT 8C-20E	20 E	C	A	113520016		R
		ARABSAT 8D-7.5E	7.5 E	C	A	113520017	C	R
		ARABSAT 8G-11E	11 E	C	A	113520020	C	R
		ARABSAT 8H-17E	17 E	C	A	113520021		R

II. Liste des réseaux à satellite (voir N° 9.36.2)

二、卫星网络清单(见第9.36.2款)

II. List of satellite networks (see No. 9.36.2)

II. Список спутниковых сетей (см. п. 9.36.2)

II. Lista de redes de satélite (véase el N.º 9.36.2)

II. قائمة بالشبكات الساتلية (انظر الرقم 2.36.9)

Liste des réseaux à satellite pour lesquels Delta T/T > 6% ou situés à l'intérieur de l'arc de coordination (au titre du N° 9.7)

List of satellite networks for which Delta T/T > 6% or which are within the coordination arc (under No. 9.7)

Lista de redes de satélite para las que Delta T/T > 6% o que están dentro del arco de coordinación (según N.º 9.7)

Delta T/T > 6% 的卫星网络清单或位于协调弧内的卫星网络清单 (依据 9.7)

Список спутниковых сетей, для которых Дельта T/T > 6% или которые находятся внутри дуги координации (согласно № 9.7)

قائمة بالشبكات الساتلية التي تكون فيها قيمة دلتا T/T < 6% أو التي تقع داخل قوس التنسيق (موجب الرقم 7.9)

A1f1 Notifying adm.	A1f3 Inter. sat. org.	A1a Sat. Network	A4a1 Orbital long.	BR3b Category of notif.	BR25 A/T	BR6a Id. no.	BR26 Causing interference	BR27 Receiving interference	BR28 Detected by coord. arc
ARM		ARMSAT1	71.4 E	C	A	113520013	C	R	
ARS	ARB	ARABSAT 2-C	20 E	C	A	95520086			A
		ARABSAT 2-C	20 E	N	A	102500474			A
		ARABSAT 5A-30.5E	30.5 E	C	A	105520072	C	R	
		ARABSAT 5A-30.5E	30.5 E	N	A	110500040	C	R	
		ARABSAT 5C-20E	20 E	C	A	105520074	C	R	A
		ARABSAT 5C-20E	20 E	N	A	111500210	C	R	A
		ARABSAT 5D-17E	17 E	C	A	109520057	C	R	A
		ARABSAT 6E-34.5E	34.5 E	C	A	105520076	C	R	
		ARABSAT 6E-34.5E	34.5 E	N	A	111500139	C	R	
		ARABSAT 7A-30.5E	30.5 E	C	A	109520112	C	R	
		ARABSAT 7B-26E	26 E	C	A	109520113	C	R	A
		ARABSAT 7C-20E	20 E	C	A	109520114	C	R	A
		ARABSAT 7D-7.5E	7.5 E	C	A	109520115	C	R	A
		ARABSAT 7E-34.5E	34.5 E	C	A	109520116	C	R	
		ARABSAT 7F-44.5E	44.5 E	C	A	109520117	C	R	
		ARABSAT 7F-44.5E	44.5 E	N	A	113500044		R	
		ARABSAT 7F-44.5E	44.5 E	N	T	314500039	C	R	
		ARABSAT 7G-11E	11 E	C	A	109520118	C	R	A
		ARABSAT 8A-30.5E	30.5 E	C	A	113520014	C	R	
		ARABSAT 8B-26E	26 E	C	A	113520015	C	R	A
		ARABSAT 8C-20E	20 E	C	A	113520016	C	R	A
		ARABSAT 8D-7.5E	7.5 E	C	A	113520017	C	R	A
		ARABSAT 8E-34.5E	34.5 E	C	A	113520018	C	R	
		ARABSAT 8F-44.5E	44.5 E	C	A	113520019	C	R	
		ARABSAT 8G-11E	11 E	C	A	113520020	C	R	A
		ARABSAT 8H-17E	17 E	C	A	113520021	C	R	A
		ARABSAT 8J-39E	39 E	C	A	113520193	C	R	
		SAUDI-FMSS-7-R1	29 E	C	A	109520338	C	R	
		STRATSAT-5-R1	41 E	C	A	109520339	C	R	
AUS		ADF 152E GOVR	152 E	C	A	108520304	C	R	
		ADF 156E GOV	156 E	C	A	102520061	C	R	

Formal List of affected networks

Relating to provisions

- Provision 9.7 applies to all frequency assignments.
- Provision 9.11 applies to frequency assignments in the 17 700 – 17 800 MHz band.
- Provision 9.13 applies to frequency assignments in the 2 170 – 2 200, 18 800 – 19 700, 1 980 – 2 010 and 28 600 – 29 500 MHz bands.
- Provision 9.14 applies to frequency assignments in the 2 170 – 2 200 and 11 700 – 12 200 MHz bands.
- Provision 9.21A applies to frequency assignments in the 13 400 – 13 650 MHz band.

- Provision AP30 7.1 applies to frequency assignments in the 11 700 – 12 700 MHz band

Coordination requirements relating to Article 7 of Appendix 30 have been established with respect to sub-paragraphs a) and b) of § 7.2.1 of this Article. Additional coordination requirements with respect to sub-paragraph c) of § 7.2.1, if any, will be established later, once all submissions under § 4.1 or 4.2 of Article 4 of Appendix 30 received as from 3 June 2000 and before the date of receipt of the subject network will have been processed by the Bureau.

- Provision AP30A 7.1 applies to frequency assignments in the 17 300 – 18 100 and 14 500 – 14 800 MHz bands

Coordination requirements relating to Article 7 of Appendix 30A have been established with respect to sub-paragraphs a) and b) of § 7.2.1 of this Article. Additional coordination requirements with respect to sub-paragraph c) of § 7.2.1, if any, will be established later, once all submissions under § 4.1 or 4.2 of Article 4 of Appendix 30A received as from 3 June 2000 and before the date of receipt of the subject network will have been processed by the Bureau.



3 key points

1. Coord exam = conformity with RR (No. 9.35) + establishment of coord requirements (No. 9.36)
2. N- findings can be eliminated & coord requirements can be managed
3. GIBC program is an essential tool

Questions





 Send	To...	<input type="checkbox"/> <u>BRMAIL, ITU;</u>
	Cc...	
	Subject	Coordination Request
