

ITUEvents

ITU World Radiocommunication Seminar 2018

3-7 December 2018
Geneva, Switzerland

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



Preface to the BR IFIC (Space Services)

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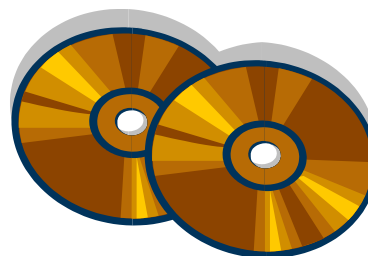
ITU HQ Geneva
4 December, 2018



The Preface (Space services)

How to understand ?

- The ***content*** of the BR IFIC (Space services) DVD-ROM?
- The ***SNS data***
- Special section or PART ***Findings***
- ***Symbols*** of Intergovernmental satellite organizations
- ***Symbols*** - Class of station/services
- Antenna patterns ***code***
- Operating Agency ***number***
- Remarks ***code***



EASY !! - READ the PREFACE !!



The Preface (Space services)

Distributed in the BR IFIC DVD-ROM in **six** languages (English, French, Spanish, Arabic, Chinese and Russian) or download it from the SSD website:

<https://www.itu.int/ITU-R/go/space-preface/en>



Radiocommunication Sector (ITU-R)

RADIOCOMMUNICATION BUREAU

PREFACE

TO THE BR INTERNATIONAL FREQUENCY INFORMATION CIRCULAR
BR IFIC (Space Services)

➤ *Always look for Edition and New Changes*

Edition: November 2018
1/348

NEW CHANGES

This section contains the list of any changes made to this version, except those concerning the regularly updated Table 12A/12B.

Edition	Changes
November 2018	NOC
October 2018	Modification of Section III Chapter 1 (non_geo ref_body)
September 2018	New Radio astronomy station antenna characteristics – see Table 6.
August 2018	NOC
July 2018	Modification of Section II Chapter 1 (CR/C and CR/F) and Section III Chapter 1 (rtf_rsn).
June 2018	NOC
May 2018	New Radio astronomy station antenna characteristics – see Table 6.
	New Radio astronomy station antenna characteristics – see Table 6.



The Preface (Space services)

- ***Contains 4 Sections***
 - **Section I – General**
 - **Section II - Description of the BR IFIC and the Space Radiocommunication Stations (SRS) database info**
 - **Section III - Description of the Space Networks System (SNS)**
 - **Section IV - Reference Tables**



The Preface (Space services)

SECTION II - Description of the BR IFIC and the Space Radiocommunication Stations (SRS) on DVD-ROM

- Chapter 1 - BR IFIC (Space Services)
 - Definition of the BR IFIC
 - **PART I-S, PART II-S and PART III-S**
 - Appendix and Annex to the BR IFIC
 - The **Special Sections** - **currently in use**
 - The Special Sections – discontinued
- Chapter 2 - Cover pages of the PART I-S, II-S, III-S and the Special Sections currently in use
- Chapter 3 – SRS database information



The Preface (Space services)

SECTION III - Space Networks System (SNS)

- Chapter 1 - Details relating to the contents of the SNS data items published in Part I-S, II-S, III-S and the Special Sections of the BR IFIC
- Chapter 2 - Description of the format for electronic submission of graphical data related to satellite networks

SECTION IV - Reference Tables

- Table 1A - Codes Designating Notifying Administrations
- Table 1B - Codes Designating Countries or Geographical Areas
- Table 2 - Intergovernmental satellite organizations
- Table 3 - Class of Station (data item *C4a*)
- Table 4 - Nature of Service (data item *C4b*)
- Table 5 - Symbols used to indicate the polarization (data item *C6a*)
- Table 6 - Radio astronomy station antenna characteristics (data item *B6*)



The Preface (Space services)

SECTION IV - Reference Tables

- Table 7 - Antenna radiation reference pattern (data item *B3e/B4a/B4b* or *B5c2* or *C10c4a*)
- Tables 8 – 10 - **Numbers not used**
- Table 11A - Symbols used for coordination and agreement (data item *A5/A6*) (coordination phase)
- Table 11B - Symbols used for coordination and agreement (data item *A5/A6*) (notification phase)
- Table 12A/12B - Responsible administrations (data item *A3b*), operating agencies (data item *A3a*) and postal and telegraphic addresses of the administrations responsible for the stations
- Table 13A1 - Finding reference - Conformity with the Radio Regulations - symbols used in column *13A1*
- Table 13A2 - Finding reference - Conformity with the procedures relating to coordination with other administrations or conformity with a Plan (world or regional) - symbols used in column *13A2*
- Table 13A3 - Finding reference - Technical examination - symbols used in column *13A3*
- Table 13A4 - Finding reference - Conformity with RES-**49** - symbols used in column *13A4*



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SECTION IV - Reference Tables

- Table 13B1 Reference to a provision of the Radio Regulations or an Appendix thereto, or a Resolution of a World Radio Conference or a Regional Agreement - symbols used in column *13B1*
- Table 13B2 - Remarks concerning Findings - symbols used in column *13B2*
- Table 13B3 - Date relating to a review to be made - symbols used in column *13B3*

- Table 13C - Remarks - symbols used in column *13C*



SECTION IV – Tables 1A/1B

TABLE 1A
Codes designating Notifying Administrations

Note : The presence of any given code designating a country with respect to a frequency assignment to a station is without prejudice to any question of territorial status which may be involved.

Code	Name of the administration (ITU Member State)
AFG	Afghanistan
AFS	South Africa (Republic of)
AGL	Angola (Republic of)
ALB	Albania (Republic of)
ALG	Algeria (People's Democratic Republic of)
AND	Andorra (Principality of)
ARG	Argentine Republic
ARM	Armenia (Republic of)
ARS	Saudi Arabia (Kingdom of)
ATG	Antigua and Barbuda
AUS	Australia
AUT	Austria
AZE	Azerbaijan (Republic of)
B	Brazil (Federative Republic of)
BAH	Bahamas (Commonwealth of the)
BDI	Burundi (Republic of)
BEL	Belgium
BEN	Benin (Republic of)
BFA	Burkina Faso
BGD	Bangladesh (People's Republic of)
BHR	Bahrain (Kingdom of)
BIH	Bosnia and Herzegovina
BLR	Belarus (Republic of)

TABLE 1B
Codes designating Countries or Geographical Areas

Note: The codes have a geographical significance only. The presence of any given code designating a country or a geographical area with respect to a frequency assignment to a station is without prejudice to any question of territorial status which may be involved.

If the territory of an Administration consists of several geographical areas, which may be distributed in different Regions, the entire territory of that Administration is represented by several geographical codes.

Explanation of a code of the type XXX/YYYY (where XXX or YYY is a code designating an administration, country or a geographical area):

XXX indicates the code designating the notifying administration and YYY indicates the code designating the country or the geographical area, in which the station is located.

See: RES-1 (Rev. WRC-97), *resolves*

that, unless specifically stipulated otherwise by special arrangements communicated to the Union by administrations, any notification of a frequency assignment to a station shall be made by the administration of the country on whose territory the station is located.

Code	Region	Notifying Administration	Name of the geographical area
ABW	XR2	HOL	Aruba
AFG	XR3	AFG	Afghanistan
AFS	XR1	AFS	South Africa
AGL	XR1	AGL	Angola
AIA	XR2	G	Anguilla
ALB	XR1	ALB	Albania
ALG	XR1	ALG	Algeria
ALS	XR2	USA	Alaska (State of)

Example 1:: The entire territory of the Administration of AUS will be represented by multiple codes: AUS, CHR, HMD, ICO, NFK ¶



SECTION IV – Table 3 Class of Station (data item C4a)

Class of Station

Space Station Class of Station

Correspondence between Earth Station Class of Station and Space Station Class of Station

Symbol	Space Station Class of Station
E1	Space research (active sensor) space station
E2	Space research (passive sensor) space station
E3	Space station in the Earth exploration-satellite service (active sensor)
E4	Space station in the Earth exploration-satellite (passive sensor)
E5	Space station in the aeronautical mobile-satellite (R) service
E6	Space station in the aeronautical mobile-satellite (OR) service
EA	Space station in the amateur-satellite service
EB	Space station in the broadcasting-satellite service (sound broadcasting)
EC	Space station in the fixed-satellite service
ED	Space telecommand space station
EE	Space station in the standard frequency-satellite service
EF	Space station in the radiodetermination-satellite service
EG	Space station in the maritime mobile-satellite service
EH	Space research space station
EI	Space station in the mobile-satellite service
EJ	Space station in the aeronautical mobile-satellite service
EK	Space tracking space station
EM	Space station in the meteorological-satellite service
EN	Space station in the radionavigation-satellite service
EO	Space station in the aeronautical radionavigation-satellite service
EQ	Space station in the maritime radionavigation-satellite service
ER	Space telemetering space station
ES	Station in the inter-satellite service
ET	Space station in the space operation service
EU	Space station in the land mobile-satellite service
EV	Space station in the broadcasting-satellite service (television)
EW	Space station in the earth exploration-satellite service
EY	Space station in the time signal-satellite service

Earth Station Class of Station	Corresponding Space Station Class of Station
T5	E5
T6	E6
TA	EA
TB	EJ
TC	EC
TD	ED
TE	(EI)
TF	EF
TG	EG
TH	EH

SECTION IV - Table 3: Class of Station

Earth Station Class of Station

Symbol	Earth Station Class of Station
RA	Radio astronomy station
T5	Aircraft earth station in the aeronautical mobile-satellite (R) service
T6	Aircraft earth station in the aeronautical mobile-satellite (OR) service
TA	Earth station in the amateur-satellite service
TB	Aeronautical earth station
TC	Earth station in the fixed-satellite service
TD	Space telecommand earth station
TE	Satellite EPIRB in the mobile-satellite service
TF	Fixed earth station in the radiodetermination-satellite service
TG	Ship earth station
TH	Earth station in the space research service
TI	Coast earth station
TJ	Aircraft earth station
TK	Space tracking earth station
TL	Mobile earth station in the radiodetermination-satellite service
TM	Earth station in the meteorological-satellite service
TN	Fixed earth station in the radionavigation-satellite service
TO	Mobile earth station in the aeronautical radionavigation-satellite service
TQ	Mobile earth station in the maritime radionavigation-satellite service
TR	Space telemetering earth station
TT	Earth station in the space operation service
TU	Land mobile earth station
TW	Earth station in the earth exploration-satellite service
TX	Fixed earth station in the maritime radionavigation-satellite service
TY	Base earth station
TZ	Fixed earth station in the aeronautical radionavigation-satellite service
UA	Mobile earth station
UB	Earth station in the broadcasting-satellite service (sound broadcasting)
UD	Space telecommand mobile earth station
UE	Earth station in the standard frequency-satellite service
UF	Earth station in motion communicating with a geostationary satellite orbit station in the fixed-satellite service in the frequency bands referred to under No. 5.527A [5.5X]
UG	Earth station on board unmanned aircraft communicating with a space station of a geostationary-satellite network in the fixed-satellite service for UAS CNPC links in accordance with resolves 1 of RES-155
UH	Mobile earth station in the space research service
UK	Space tracking mobile earth station
UM	Mobile earth station in the meteorological-satellite service
UN	Mobile earth station in the radionavigation-satellite service
UR	Space telemetering mobile earth station
UT	Mobile earth station in the space operation service

TI	EG
TJ	EJ
TJ	EC ¹
TK	EK
TL	EF
TM	EM
TN	EN
TO	EO
TQ	EQ
TR	ER
TT	ET
TU	EU
TW	EW
TX	EQ
TY	EU
TZ	EO
UA	EI
UB	EB
UD	ED
UE	EE
UF	EC
UG	EC
UH	EH
UK	EK
UM	EM
UN	EN
UR	ER
UT	ET
UV	EV
UW	EW
UY	EY
VA	EI



SECTION IV – Tables 7A/7B Antenna radiation reference pattern

Antenna Radiation Reference pattern can be consulted from the Antenna Pattern Library at:

<https://www.itu.int/en/ITU-R/software/Pages/ant-pattern.aspx>

**TABLE 7A
Antenna radiation reference pattern - Space Stations**

Antenna pattern code	Description
AP7 or AP8	This is used for both uplink and downlink associated Earth Station antennas. It is based on Annex 3 of Appendix 7 and Annex III of Appendix 8 of the RR.
REC-465	This is used for both uplinks and downlinks for analyses under Appendix 30B. It is based on Rec. ITU-R S.465. However, that Recommendation does not describe a complete pattern, so the algorithm has been expanded to describe a complete pattern using the same pattern as above, and described in Appendix 7 or Appendix 8 to the RR, in the undefined areas.
REC-580	This is used for both uplinks and downlinks for analyses under Appendix 30B. It is based on Recommendation ITU-R S.580.
REC-694	Recommendation ITU-R M.694 "Reference radiation pattern for ship earth station antennas"
REC-1213	Rec. ITU-R BO.1213, Reference receiving associated earth station antenna pattern for replanning purposes of the WARC-77 BSS plans for Regions 1 and 3.
29-25LOG(FI)	Represents a reference radiation pattern similar to that in Rec. ITU-R S.465 with side lobe radiation reduced by 3 dB.
27-25LOG(FI)	As above with side lobe radiation reduced by 5 dB.
NN-25LOG(FI)	Represents a generic radiation pattern of the same type and allows for values of N other than those listed above.
ND	Quasi-omnidirectional radiation pattern with maximum isotropic gain stated in the appropriate field.
R13TSS	Gain (dBi) of the WARC-77 transmitting space station antenna. This pattern is based on Figure 9 and Section 3.13.3 in Annex 5 of Appendix 30. The co-polar formula is Curve A in Figure 9, and the cross-polar formula is curve B in Figure 9. In both the co-polar and cross-polar situations, curve C in Figure 9 is the minimum gain.
R13RSS	Gain (dBi) of the receiving space station antenna. This pattern is based on Figure B in Section 3.7.3 of Annex 3 of Appendix 30A. The co-polar formula is Curve A in Figure B, and the cross-polar formula is Curve B in Figure B.

**TABLE 7B
Antenna radiation reference pattern - Earth Stations**

Antenna pattern code	Description
AP7 or AP8	This is used for both uplink and downlink Earth Station antennas. It is based on Annex 3 of Appendix 7 and Annex III of Appendix 8 of the RR.
REC-465	This is used for both uplinks and downlinks for analyses under Appendix 30B. It is based on Rec. ITU-R S.465. However, that Recommendation does not describe a complete pattern, so the algorithm has been expanded to describe a complete pattern using the same pattern as above, and described in Appendix 7 or Appendix 8 of the RR, in the undefined areas.
REC-580	This is used for both uplinks and downlinks for analyses under Appendix 30B. It is based on Recommendation ITU-R S.580.
REC-694	Recommendation ITU-R M.694 "Reference radiation pattern for ship earth station antennas"
REC-1213	Rec. ITU-R BO.1213, Reference receiving earth station antenna pattern for replanning purposes of the WARC-77 BSS plans for Regions 1 and 3.
29-25LOG(FI)	Represents a reference radiation pattern similar to that in Rec. ITU-R S.465 with side lobe radiation reduced by 3 dB.
27-25LOG(FI)	As above with side lobe radiation reduced by 5 dB.
NN-25LOG(FI)	Represents a generic radiation pattern of the same type and allows for values of N other than those listed above.
MODTES	Gain (dBi) of the transmitting earth station antenna. It is an implementation of Rec. ITU-R BO.1295 and has been included at WRC-97 in Appendix 30A as Figure A in Section 3 of Annex 3.
R2TES	Gain (dBi) of the RARC'83 transmitting earth station antenna. This pattern is based on Figure 6 and Section 4.4.2 of Annex 3 of Appendix 30A. This has been expanded to provide a value when ϕ is less than 0.1 degree.
R2RES	Gain (dBi) of the RARC-83 receiving earth station antenna. It is based on a fixed value for the 3 dB beamwidth of 1.7 degrees. This pattern is based on Figure 8 and Section 3.7.2 in Annex 5 of Appendix 30. The co-polar formula is Curve A in Figure 8, and the cross-polar formula is Curve B in Figure 8.
R13TES	This is used for Earth Station antennas for uplinks in Region 1 and 3. It is based on Figure A and Section 3.5.3 in Annex 3 of Appendix 30A.



SECTION IV – Tables 12A/12B Responsible Administrations/Operating agencies

- You are invited to update this information by sending a letter indicating the correct address or contact of the existing responsible Administrations or Operating Agencies or by adding a new responsible Administration or Operating agency with its full address (postal, telephone, email)
- Table 12A/12B is also used for creating operator users in e-submission

SUI	Switzerland
A	FEDERAL OFFICE OF COMMUNICATION ZUKUNFTSTRASSE 44 CH-2501 BIEL-BIENNE SUISSE EMAIL: info@bakom.admin.ch TELEFAX: +41 58 463 18 24
B	UNITED NATIONS FOR THE ATTENTION OF THE CHIEF OF TELECOMMUNICATIONS OPERATIONS SECTION ROOM S2035 NEW YORK NY10017 UNITED STATES TELEX: 023289696
C	OFFICE DES NATIONS UNIES A GENEVE PALAIS DES NATIONS CH - 1211 GENEVE 10 TELEX: 289696 UNO CH
D	BUNDESNETZAGENTUR FUR ELEKTRIZITAT, GAS, TELEKOMMUNIKATION, POST UND EISENBAHNEN CENTRALIZING OFFICE OF THE RADIO MONITORING SERVICE P.O. BOS 80 01 D - 55003 MAINS TELEX: 04187404 MONI D
001	RADIO-SUISSE S.A.
003	OFFICE FEDERAL DE L'AIR
005	UNITED NATIONS
010	MISSION DES ETATS-UNIS
012	EPFL - ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE
014	SPACEPHARMA SA
016	ASTROCAST SA
002	OFFICE FEDERAL DE LA COMMUNICATION
004	SERVICE RADIOPOLICE
009	SUEDWESTFUNK, BADEN-BADEN
011	INSTITUTE OF ASTRONOMY
013	UNIVERSITY OF APPLIED SCIENCES OF SOUTHERN SWITZERLAND (SUPSI)
015	INMARSAT SA



Questions?

PREFACE to the BRIFIC (space services) website

<https://www.itu.int/ITU-R/go/space-preface/en>



Thank you

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the WRS-18 Exhibition
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ITU Montbrillant building**