

ITUWRS
ONLINE2020

29TH WORLD RADIOCOMMUNICATION SEMINAR
30 November – 11 December 2020

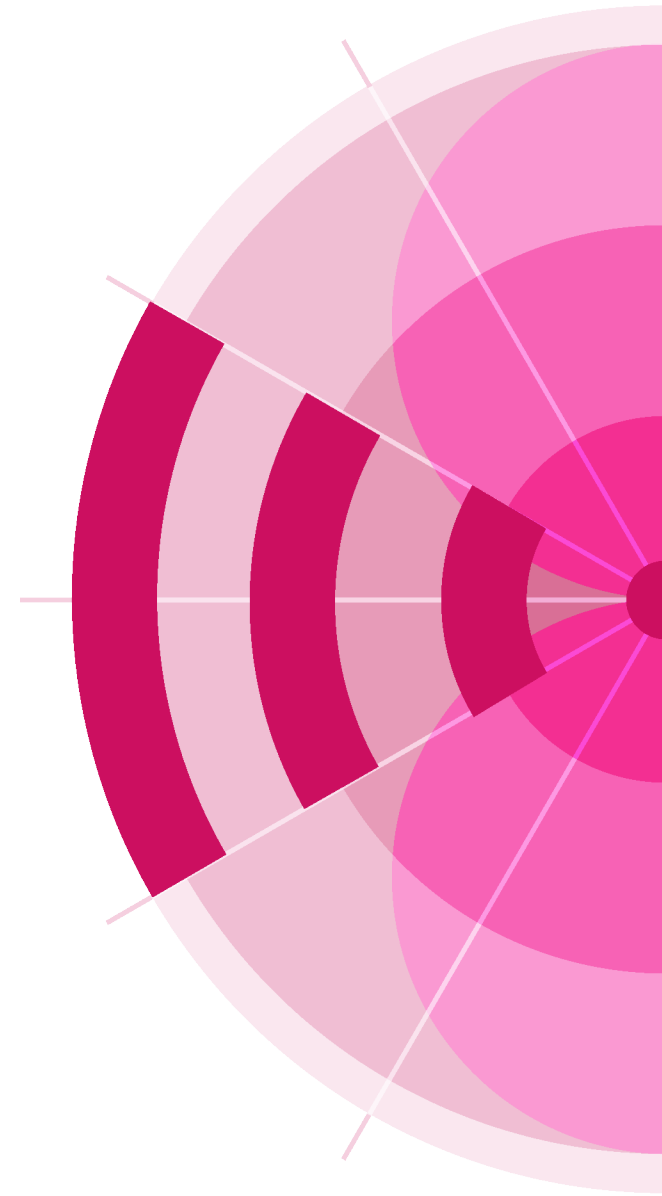
BRINGING INTO USE OF GSO AND NGSO SATELLITE NETWORKS

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Space Services Department, BR, ITU

www.itu.int/go/wrs-20

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OBJECTIVES

KEY ROLE OF ITU

- Rational, equitable, efficient and economical use

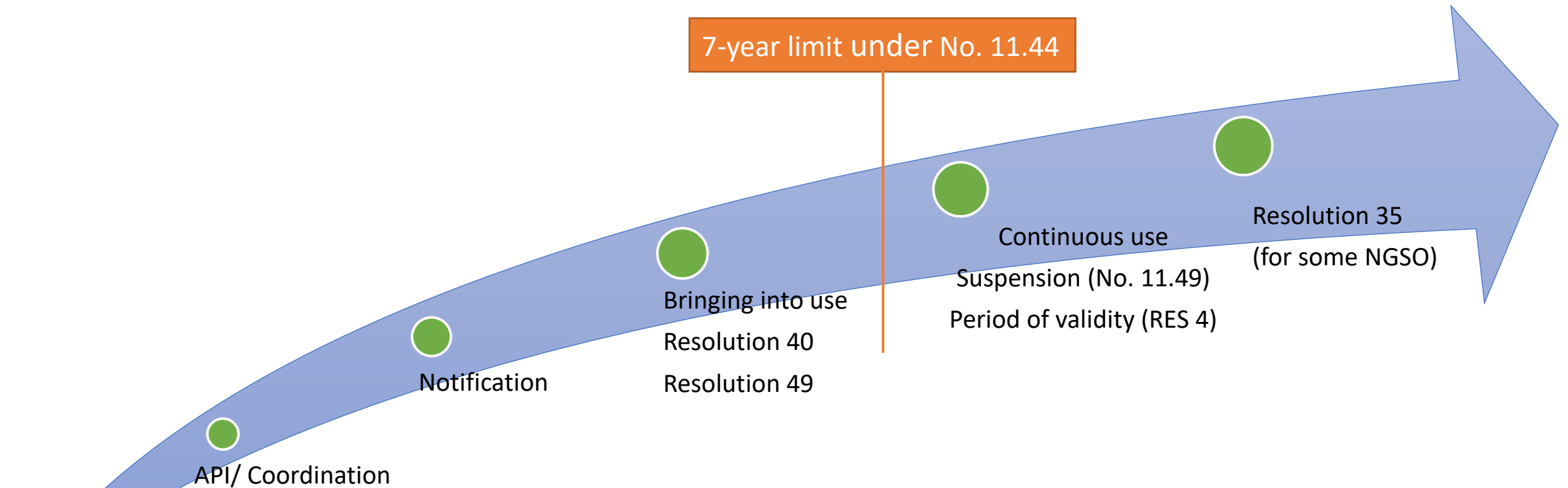
UNDERUSED SPECTRUM/ORBITAL POSITION

- Multiple filings submissions
- Fictitious recorded assignments

WRC-12 / WRC-15 / WRC-19

- Definition of the bringing into use for GSO (WRC-12)
- Penalty for late suspension information (WRC-15)
- Satellite hopping - Resolution 40 (WRC-15)
- Request of clarification under No. 13.6 (WRC-12, WRC-15)
- Definition of the bringing into use for NGSO (WRC-19)
- Constellation deployment – Resolution 35 (WRC-19)

LIFE SPAN OF A SATELLITE NETWORK FILING (Non-planned bands)



NOTIFICATION OF THE DATE OF BRINGING INTO USE

- **First DBIU to be provided in the Notification submission (appendix 4 information)**
- No more than 3 years from date of Notification (No. **11.25**, *AP30/30A/5.1.3, AP30A/5.1.7, AP30B/8.1*)
- No later than 7 years from the date of receipt of the API/CR (No. **11.44**) / *8 years (Plan)*

- DBIU is a foreseen date, if DBIU is later than the date of receipt of the notice
- Provisional entry in the Master Register (No. **11.47**)
- Actual DBIU shall be communicated not later than 30 days after the 7-year regulatory deadline

- The confirmation of a DBIU should be provided by correspondence to the Bureau
- E-communication / email should be used

CONFIRMATION OF THE BRINGING INTO USE

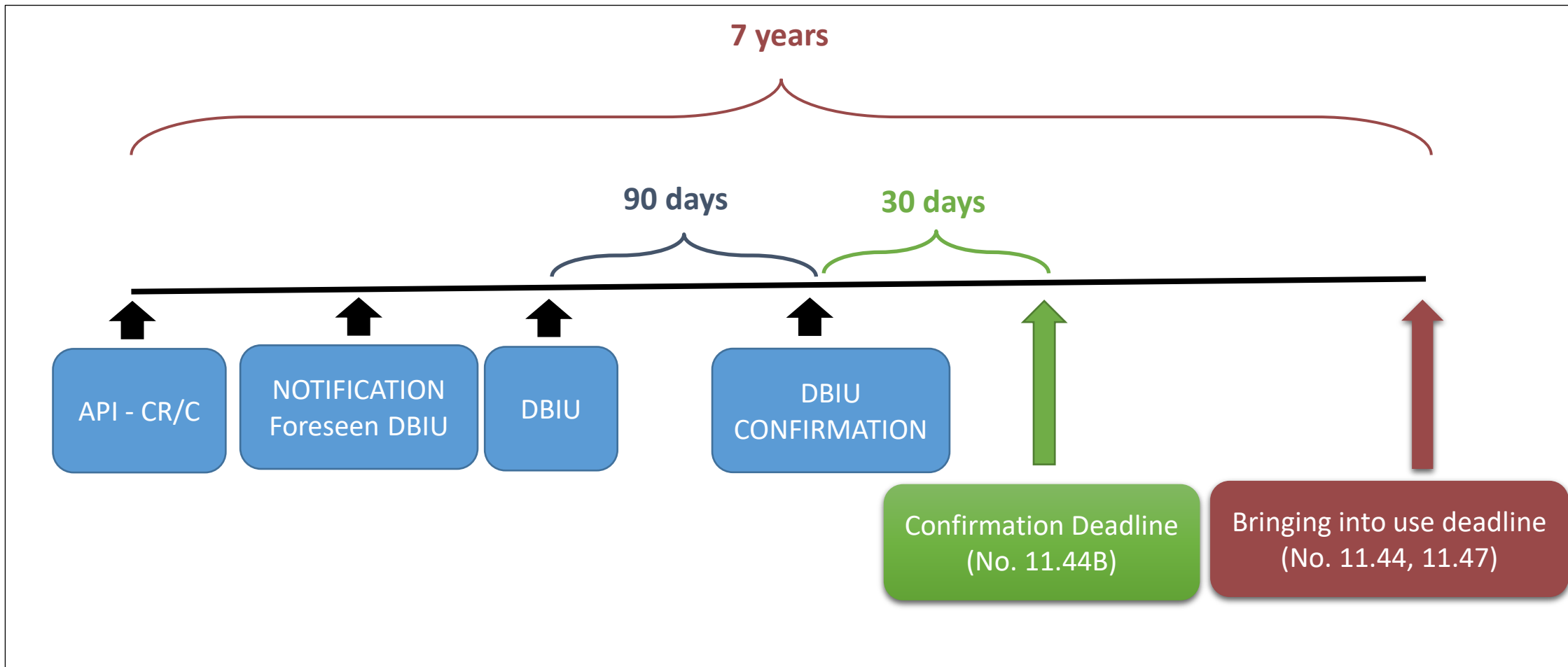
GSO

- when a space station in the geostationary-satellite orbit with the capability of transmitting or receiving that frequency assignment has been deployed and maintained at the notified orbital position for a continuous period of 90 days (**No. 11.44B**)

- Shall confirm the **capability** of transmitting and receiving
- Shall confirm the continuous period of **90 days**
- Within 30 days from the end of the continuous period of 90 days

- **Resolution 40** mandatory
- If DBIU more than 120 days prior to the date of receipt: continuous use from the DBIU until the date of receipt (**No. 11.44B.2**)

TIME FRAME (GSO - Non-planned bands)



CONFIRMATION OF THE BRINGING INTO USE

NGSO / in FSS, MSS and BSS (WRC-19)

- a space station with the capability of transmitting or receiving that frequency assignment has been deployed and maintained on one of the orbital plane(s) of the non-geostationary satellite network or system for a continuous period of 90 days, irrespective of the notified number of orbital planes and satellites per orbital plane in the network or system (**No. 11.44C**)

- Shall confirm **the capability** of transmitting and receiving, on one of the orbital plane
- Shall confirm the continuous period of **90 days**
- Shall identify the **orbital plane number** (**No. 11.44C.4**)
- Within 30 days from the end of the continuous period of 90 days

- If DBIU more than 120 days prior to the date of receipt: continuous use from the DBIU until the date of receipt (**No. 11.44C.3**)

CONFIRMATION OF THE BRINGING INTO USE NGSO / not in FSS, MSS or BSS / Earth as reference body (WRC-19)

- a space station with the capability of transmitting or receiving that frequency assignment has been deployed and maintained on one of the orbital plane(s) of the non-geostationary satellite network or system, irrespective of the notified number of orbital planes and satellites per orbital plane in the network or system (**No. 11.44D**)
- Shall confirm the **capability** of transmitting and receiving
- Identify the **orbital plane number** (**No. 11.44D.3**)

CONFIRMATION OF THE BRINGING INTO USE **NGSO** / **not Earth** as reference body (WRC-19)

- a space station with the capability of transmitting or receiving that frequency assignment has been deployed in accordance with the notification information (**No. 11.44E**)
- Shall confirm the **capability** of transmitting and receiving

BIU - AVAILABILITY OF THE INFORMATION

PUBLICATION

- In PART II-S of the BRIFIC
- The only official information

SPACE SERVICES WEBPAGES

- List of frequency assignments brought into use
- For information only
- Some information not yet verified by the Bureau

SRS DATABASE

- Information for each group: table grp
- Fields d_inuse and f_biu

UNION INTERNATIONALE DES TELECOMMUNICATIONS BUREAU DES RADIOCOMMUNICATIONS			INTERNATIONAL TELECOMMUNICATION UNION BUREAU OF RADIOCOMMUNICATIONS			UNIÓN INTERNACIONAL DE TELECOMUNICACIONES OFICINA DE RADIOCOMUNICACIONES		
RESEAU A SATELLITE SATELLITE NETWORK RED DE SATELITE			PART PART PARTE			II-S		
STATION TERRITORIALE STATION TERRITORY ESTACIÓN TERRITORIAL			BR P/C / DATE BR P/C / DATE BR P/C / FECHA			2822 / 21.06.2016		
L'ADM RESPONSABLE RESPONSIBLE ADM ADMINISTRATIVO			L'ADM RESPONSABLE RESPONSIBLE ADM ADMINISTRATIVO			113500138		
RÉFÉRENCES REÇUES PAR LE BUREAU / LE INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL			RÉFÉRENCES REÇUES PAR LE BUREAU / LE INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL			19.04.2016		
Confirmation de la date de mise en service des assignations de fréquences inscrites dans le Fichier de référence, au titre de			Confirmation of the date of bringing into use of frequency assignments previously recorded in the Master Register, under			Confirmation de la fecha de puesta en servicio de las asignaciones de frecuencias inscritas con carácter provisional en el Registro Internacional de Frecuencias, con arreglo al		
X Numéro 11.47 du Règlement des radiocommunications			X No.11.47 of the Radio Regulations			X No.11.47 del Reglamento de Radiocomunicaciones		
§ 5.2.8 de l'Article 5 des Appendices 30 et/ou 30A			§ 5.2.8 of Article 5 of Appendices 30 and/or 30A			§ 5.2.8 del Artículo 5 de los Apéndice 30 y/o 30A		
§ 8.16 de l'Article 8 de l'Appendice 30B			§ 8.16 of Article 8 of Appendix 30B			§ 8.16 del Artículo 8 del Apéndice 30B		
Assignations de fréquence inscrites dans le Fichier de référence			Frequency assignments recorded in the Master Register			Asignaciones de frecuencia inscritas en el Registro Internacional de Frecuencias		
Suspension de l'utilisation au titre de			Suspension of use under			Suspensión del uso en virtud de		
Numéro 11.48 du Règlement des radiocommunications			No.11.48 of the Radio Regulations			No.11.48 del Reglamento de Radiocomunicaciones		
§ 5.2.10 de l'Article 5 des Appendices 30 et/ou 30A			§ 5.2.10 of Article 5 of Appendices 30 and/or 30A			§ 5.2.10 del Artículo 5 de los Apéndice 30 y/o 30A		
§ 8.17 de l'Article 8 de l'Appendice 30B			§ 8.17 of Article 8 of Appendix 30B			§ 8.17 del Artículo 8 del Apéndice 30B		
Remise en service au titre de			Resumption of use under			Reanudación del uso en virtud de		
Numéro 11.48 du Règlement des radiocommunications			No.11.48 of the Radio Regulations			No.11.48 del Reglamento de Radiocomunicaciones		
§ 5.2.10 de l'Article 5 des Appendices 30 et/ou 30A			§ 5.2.10 of Article 5 of Appendices 30 and/or 30A			§ 5.2.10 del Artículo 5 de los Apéndice 30 y/o 30A		
§ 8.17 de l'Article 8 de l'Appendice 30B			§ 8.17 of Article 8 of Appendix 30B			§ 8.17 del Artículo 8 del Apéndice 30B		
Pour plus de détails sur les dispositions réglementaires et l'explication des codes ou symboles utilisés dans cette publication, veuillez consulter le Tableau			For more details on the regulatory provisions, and the explanation of the codes or symbols used in this publication, please consult the Tableau			Para más detalles sobre las disposiciones regulatorias y la explicación de los códigos o símbolos utilizados en esta publicación, consulte el Tableau		

B1a Beam designation	B2 Emi-Rcp	BR7a Group id.	BR47 Frequency band (MHz)	A2a Date of bringing into use
OHD	R	113683268	13750 - 14000	20.01.2016
		113683269	13750 - 14000	20.01.2016
R22R	R	113683270	13750 - 14000	20.01.2016
		113683271	13750 - 14000	20.01.2016
		113683272	13750 - 14000	20.01.2016
		113683273	13750 - 14000	20.01.2016
		113683274	13750 - 14000	20.01.2016
		113683275	13750 - 14000	20.01.2016
		113683276	13750 - 14000	20.01.2016
		113683277	13750 - 14000	20.01.2016
		113683278	13750 - 14000	20.01.2016
		113683279	13750 - 14000	20.01.2016
		113683280	13750 - 14000	20.01.2016
		113683281	13750 - 14000	20.01.2016
		113683282	13750 - 14000	20.01.2016
		113683283	13750 - 14000	20.01.2016
		113683284	13750 - 14000	20.01.2016
		113683285	13750 - 14000	20.01.2016
		113683286	13750 - 14000	20.01.2016
		113683287	13750 - 14000	20.01.2016
		113683288	13750 - 14000	20.01.2016
		113683289	13750 - 14000	20.01.2016
		113683290	13750 - 14000	20.01.2016
		113683291	13750 - 14000	20.01.2016

<http://www.itu.int/net/ITU-R/space/snl/listinuse/index.asp>

Notice ID (SNR)	Satellite Name (SNL Part B)	ADM	ORG	Long_nom	Date of bringing into use	Status	Expiry Date for Bringing Into Use	Provision
up down	up down	up down		up down	up down	up down	up down	up down
111500243	CSDRN-M	RUS		95	06.02.2019	N	06.02.2019	11.2
118500194	DFH-5-01A	CHN		94.2	01.09.2018	I	16.09.2018	11.2
118500200	INMARSAT-KA 83.5E	G		83.5	08.08.2017	C		11.2
118560006	MEASAT-91.5E-BSS	MLA		91.5	08.03.2019	N	08.03.2019	5.1.2
117500301	NEW DAWN 34	PNG		85	29.10.2017	C		11.2
118500072	N-SAT2-93E	J		93	15.12.2018	N	15.12.2018	11.2
118560010	NSS-BSS 100E	HOL		100	03.08.2018	C		5.1.2
118560011	NSS-BSS 100E	HOL		100	03.08.2018	C		5.1.6
118500185	SE-KA-83.5E	NOR		83.5	08.08.2017	C		11.2
118500045	USLL-PAC3	USA		92	20.11.2017	C		11.2
118500046	USLL-PAC4	USA		100	17.01.2018	C		11.2

SUSPENSION OF USE

(No. 11.49, AP30/30A/5.2.10, AP30B/8.17)

SUSPENSION

- For a period of 3 years
- Inform the BR no later than **6 months** from the date of suspension
- Penalty for late suspension
- Publication in a PART II-S and on the web

RESUMPTION

- Information shall be communicated not later than 30 days after the end of suspension
- BBIU procedure like BIU procedure
- Resolution 40 for GSO
- Publication in a PART II-S and on the web

Penalty for late submission = Reduction of the 3-year suspension period by the delay of notification of the suspension (day to day reduction after 6 months)

Example: Date of suspension is 01.01.2020

Date of notification of suspension = 01.07.2021

Penalty = 1 year

The date limit of resumption is 01.01.2022 instead of 01.01.2023

SUSPENSION OF USE INFORMATION ON THE WEB

Information provided by Administrations
Official publications only in the BRIFIC

- Status of the suspension
- Planned and non-planned bands
- History with date of resumption
- <http://www.itu.int/net/ITU-R/space/snl/listinuse/index.asp>

Notice ID (SNS)	Satellite Name (Link to SNL)	ADM	ORG	Long_nom	Status	Type	Date of receipt of the suspension	Date of suspension	Date limit for the resumption	Date of resumption of operation	Provision
up down	up down	up down		up down	up down			up down	up down		up down
117500252	KYPROS- APHRODITE-2	CYP		90	S	T	02.04.2018	28.12.2017	28.12.2020		11.49
105500223	DRTS-90.75E	J		90.75	S	T	26.01.2018	31.07.2017	31.07.2020		11.49
112500244	N-SAT-90.75E	J		90.75	S	T	26.01.2018	31.07.2017	31.07.2020		11.49
115500060	FYGEOSAT-99.5E	CHN		99.5	R	T	19.06.2017	18.05.2017		13.05.2018	11.49
316500227	MEASAT-1A	MLA		91.5	S	P	14.04.2017	15.03.2017	15.03.2020		11.49
115500060	FYGEOSAT-99.5E	CHN		99.5	R	T	16.11.2015	22.05.2015		11.12.2016	11.49
113500084	JMCS-93E	J		93	R	T	14.05.2015	19.11.2014		25.02.2017	11.49
113500113	N-SAT-93E	J		93	R	T	14.05.2015	19.11.2014		25.02.2017	11.49
111500243	CSDRN-M	RUS		95	R	P	24.12.2012	29.11.2012		28.04.2014	11.49

RESOLUTION 40 (WRC-15)

Bringing (back) into use of GSO satellite networks at different orbital locations using one space station.



Inform if the space station has previously been used within the last 3 years.
In case previously used, to provide:


- Last orbital location used for BIU
- Satellite network associated at the previous position
- The date on which it was not longer at the previous position

Bringing (back) into use will be accepted only if information requested by the Resolution 40 are provided

RESOLUTION 40

INFORMATION ON THE WEB

- Information on use of already in-orbit satellite
- Planned and non-planned bands
- http://www.itu.int/net/ITU-R/space/snl/sat_relocation/index.asp
- Form available on-line



RESOLUTION 40 (WRC-15)

Use of one space station to bring frequency assignments to geostationary-satellite networks at different orbital locations into use within a short period of time

Satellite networks for which frequency assignments have been brought into use, or brought back into use after suspension:

AP4 items	
Identity of the Satellite Network	A.1.a
Notifying Administration	A.1.1
Nominal Orbital Position	A.4.a.1
Date of bringing into use (or bringing back into use after suspension)	A.2.a

The bringing into use, or bringing back into use after suspension has been accomplished with a space station that has previously been used to bring into use, or resume the use of, frequency assignments at a different orbital location within the three years prior to the date of submission of this information:

	YES	NO
a) Last orbital location where the space station was used to bring into use, or resume the use of, frequency assignments	<input type="radio"/>	<input type="radio"/>
b) Satellite network(s) with which the frequency assignments in a) above were associated		
c) The date on which the space station was no longer maintained at the orbital location in a) above		

Form to be sent by the Administration to brmail@itu.int.



► [Form to submit Resolution 40 data to the Bureau](#)

Satellite name	ADM	ORG	Orbital position	DBIU	Provisions	satellite relocation	Previous orbital position	Previous associated satellite network	Date relocated
<u>up down</u>	<u>up down</u>		<u>up down</u>	<u>up down</u>					
USGAE-6M	USA		-120	01.11.2015	11.2	NO			
USABSS-30	USA		-110	30.12.2015	5.1.2/5.1.6	NO			
MEXSAT113 L-CEXT-X	MEX		-113	02.10.2015	11.2	NO			
GIBSAT-129W	G		-129	19.08.2015	11.2	YES	-103	USASAT-24F, USASAT-35H	08.07.2015
CANSAT(107.3W)-XKA	CAN		-107,3	28.06.2015	11.2	NO			
CANSAT(107.3W)-L	CAN		-107,3	10.01.2016	11.2	YES	-106,5	MSAT	04.10.2015

RESOLUTION 35 (WRC-19)

BIU of NGSO in FSS, MSS, BSS = one satellite in one orbital plan

Filing to satellite systems composed of thousands of non-GSO satellites



Milestone-based approach

**balance between spectrum warehousing,
coordination mechanisms and operational requirements**

RESOLUTION 35 (WRC-19) - APPLICATION

APPLIES TO:

All Non-GSO satellite systems in the following bands and services and brought into use (No.11.44 and No.11.44C)

EXAMPLE

Frequency bands (GHz)	Space radiocommunication services		
	Region 1	Region 2	Region 3
10.70-11.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)		
11.70-12.50	FIXED-SATELLITE (space-to-Earth)		
12.50-12.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (space-to-Earth)	BROADCASTING-SATELLITE FIXED-SATELLITE (space-to-Earth)
12.70-12.75	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)	BROADCASTING-SATELLITE FIXED-SATELLITE (space-to-Earth)

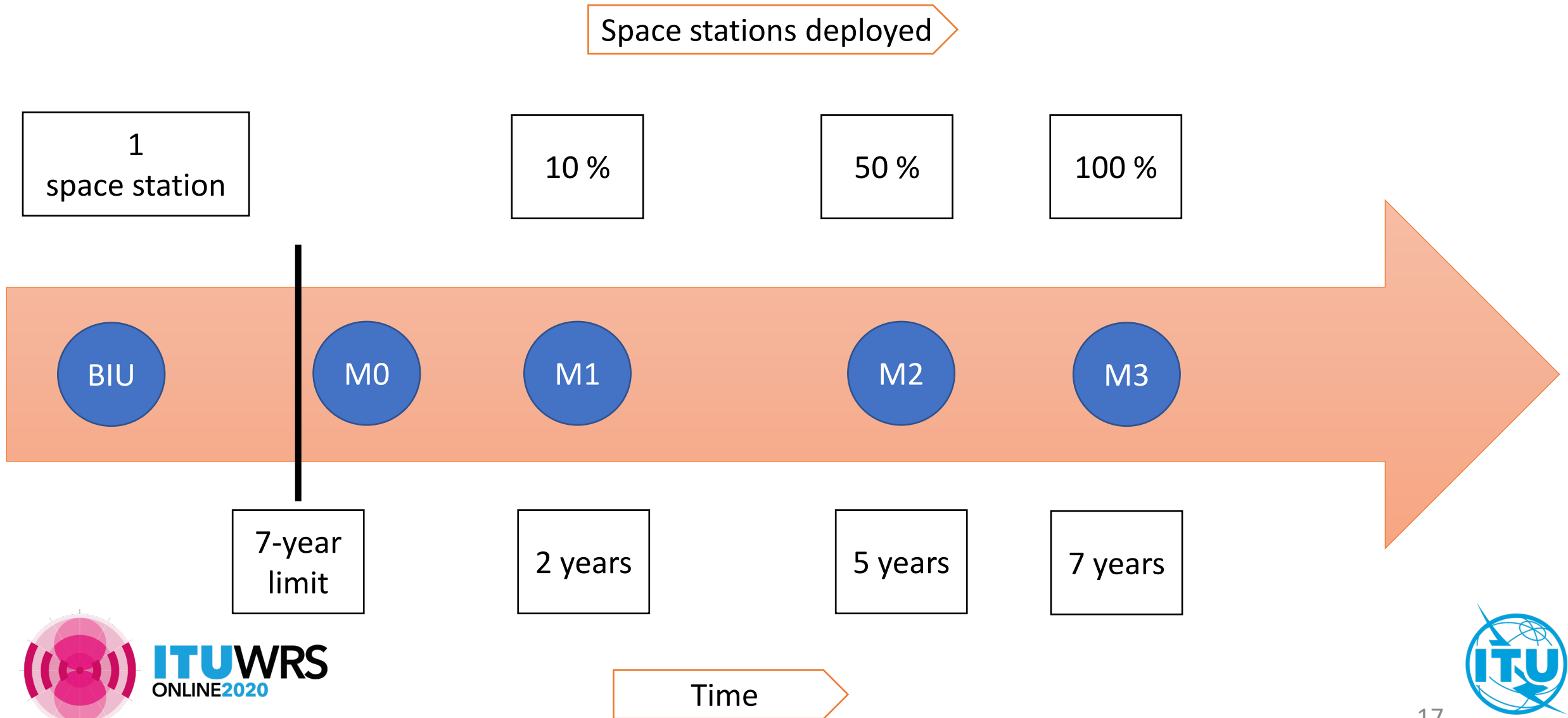
TABLE
Frequency bands and services for application of the milestone-based approach

Bands (GHz)	Space radiocommunication services		
	Region 1	Region 2	Region 3
10.70-11.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (space-to-Earth)	
11.70-12.50	FIXED-SATELLITE (space-to-Earth)		
12.50-12.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (space-to-Earth)	BROADCASTING-SATELLITE FIXED-SATELLITE (space-to-Earth)
12.70-12.75	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)	BROADCASTING-SATELLITE FIXED-SATELLITE (space-to-Earth)
12.75-13.25	FIXED-SATELLITE (Earth-to-space)		
13.75-14.50	FIXED-SATELLITE (Earth-to-space)		
17.30-17.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	None	FIXED-SATELLITE (Earth-to-space)
17.70-17.80	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)
17.80-18.10	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)		
18.10-19.30	FIXED-SATELLITE (space-to-Earth)		
19.30-19.60	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)		
19.60-19.70	FIXED-SATELLITE (space-to-Earth) FIXED-SATELLITE (Earth-to-space)		
19.70-20.10	FIXED-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)	FIXED-SATELLITE (space-to-Earth)
20.10-20.20	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)		
27.00-27.50		FIXED-SATELLITE (Earth-to-space)	
27.50-28.50	FIXED-SATELLITE (Earth-to-space)		
28.50-29.90	FIXED-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)	FIXED-SATELLITE (Earth-to-space)
29.90-30.00	FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space)		
37.50-38.00	FIXED-SATELLITE (space-to-Earth)		
38.00-39.50	FIXED-SATELLITE (space-to-Earth)		

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CMR 14/2000-E

Bands (GHz)	Space radiocommunication services		
	Region 1	Region 2	Region 3
39.50-40.50	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)		
40.50-42.50	FIXED-SATELLITE (space-to-Earth)		
47.20-50.20	FIXED-SATELLITE (Earth-to-space)		
50.40-51.40	FIXED-SATELLITE (Earth-to-space)		

RESOLUTION 35 (WRC-19) - TIMEFRAME



RESOLUTION 35 (WRC-19) - PROCESS

Case 1: 7-year limit before 1 January 2021

Case 2: 7-year limit after 1 January 2021

Initial deployment information

- Case 1: 01.02.2021
- Case 2: 7-year-limit + 30 days or DBIU + 120 days (latest)

3 Milestones (Case 1 / Case 2)

- M1: 01.02.2023 / 7 year-limit + 2 years + 30 days: **10%**
- M2: 01.02.2026 / 7 year-limit + 5 years + 30 days: **50%**
- M3: 01.02.2028 / 7 year-limit + 7 years + 30 days: **100%**

Failure to meet a Milestone:

Reduction of the number of satellite in the system

RESOLUTION 35 (WRC-19) - SUBMISSION

E-submission system: Online capture / XML upload

Satellite system
information

Launch information

Space station
characteristics

Frequency bands

Available soon

RES35 Create draft Upload draft Draft list

Save Draft

Satellite System Name

Adm/Org

References to Publication

Milestone

Date Facility Name Country Longitude Latitude Provider

Vehicle

Space Station 1

Orbital Plane ID Station Name Apogee [Km] Perigee [Km] Inclination [Deg.] Argument Perigee [Deg.]

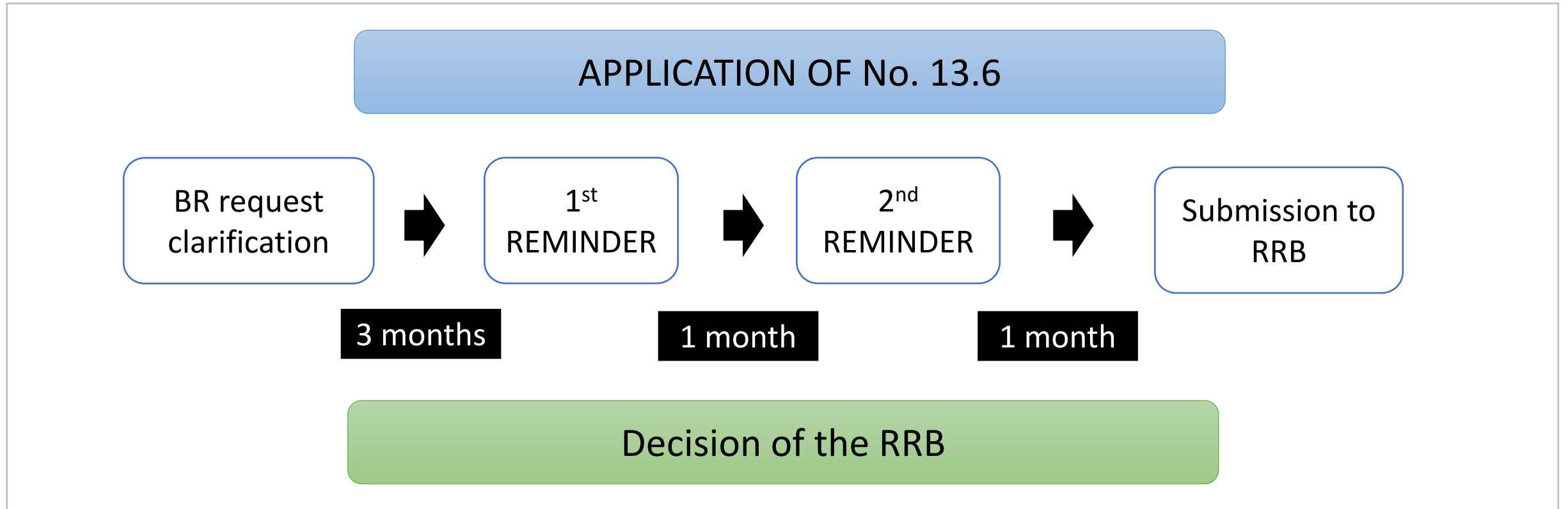
Frequency band 1

Freq. min GHz Freq. max GHz

☐ Clone Parameters to next Station

VERIFICATION OF THE BIU AND CONTINUOUS USE (No. 13.6)

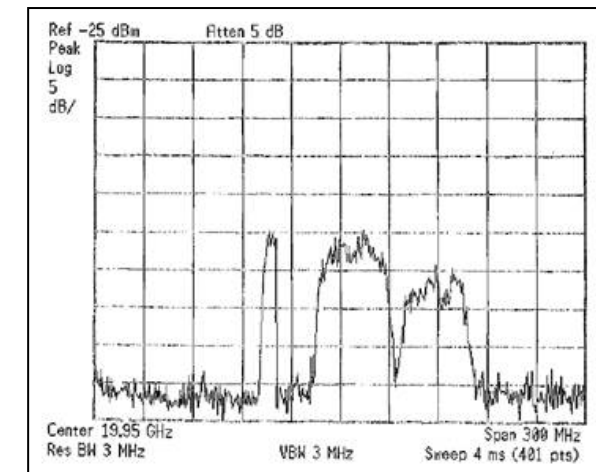
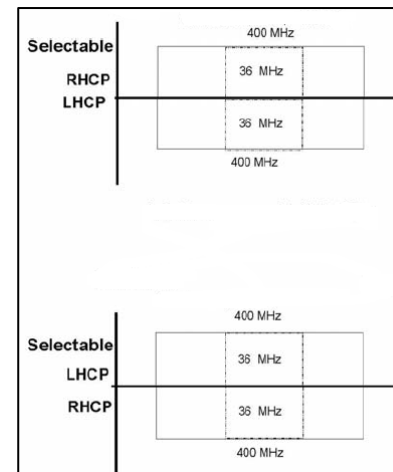
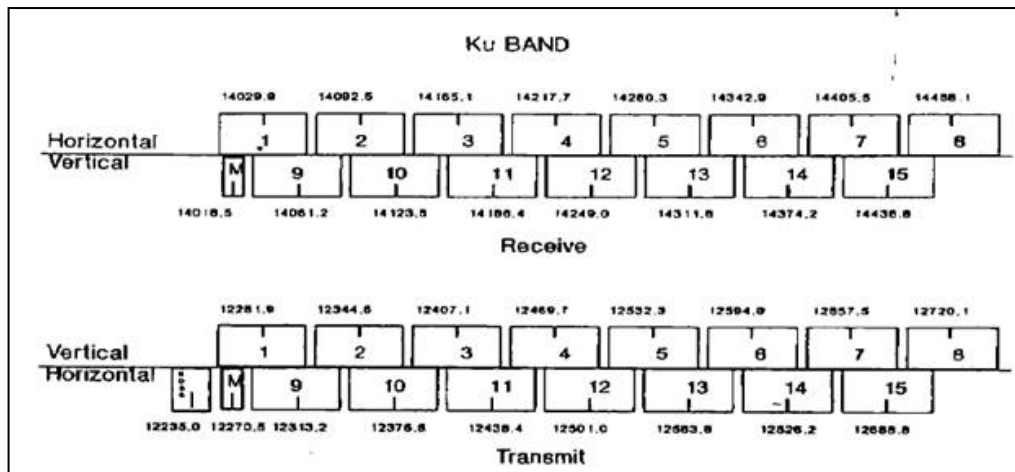
From reliable available information: Not brought into use (**11.44.3, 11.44B.1, 11.44C.2, 11.44D.2** and **11.44E.1**), no longer in use



Recorded frequency assignments will continue to be taken into account by the Bureau when conducting its examinations until the Board's decision

APPLICATION OF ARTICLE 13.6

Administration should respond as completely as practicable (Minutes of WRC-15)
Evidence to be provided for the whole frequency range



Thank you!

ITU – Radiocommunication Bureau

Questions to brmail@itu.int or xavier.laurenson@itu.int