

# Space FSS and BSS Plans (Appendices 30/30A & 30B)



Akim Falou Dine

Akim.Falou-Dine@itu.int

International Telecommunication Union



**ITSO/ITU Workhop on Satellite Communications**

**AFRALTI, Nairobi, 17-21 July 2017**

# Two mechanisms for sharing the orbit/spectrum resource

## Coordination Approach

First come, first served for actual requirements



Rational, Efficient,  
Economical Use

## Planning Approach

Plan for future use



Equitable Access



# Planning Approach the “Space Plans”

## Broadcasting-Satellite Service and feeder-link Plans (Appendices 30/30A)

11.7-12.2 GHz (Region 3)  
11.7-12.5 GHz (Region 1)  
12.2-12.7 GHz (Region 2)  
17.3-18.1 GHz (Regions 1&3)  
17.3-17.8 GHz (Region 2)  
14.5-14.8 GHz (Regions 1&3 except  
Europe)

Assignment Plan

## Fixed Satellite Service Plans (Appendix 30B)

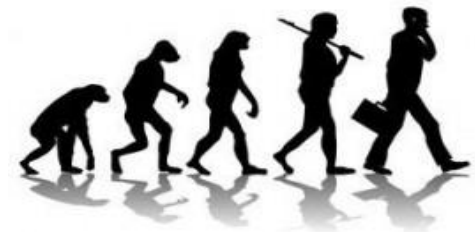
4500 - 4800 MHz  
6725 - 7025 MHz  
10.7 - 10.95 GHz  
11.2 - 11.45GHz  
12.75 - 13.25GHz

Allotment Plan

# Space Plans, a long HISTORY

Several World Radio Conferences between 1977 and 2007 were held to establish and revise Space Plans:

- WARC-77 established the Region 1&3 BSS Plan
- RARC-83 established the Region 2 BSS and associated feederlink Plan
- WARC ORB-85 included the Region 2 BSS and associated feederlink Plan into the Radio Regulations
- WARC ORB-88 established the FSS Plan and Region 1 &3 BSS feederlink Plan
- WRC-97 revised the Region 1&3 BSS and associated feederlink Plans
- **WRC-2000** revised the Region 1&3 BSS and associated feederlink Plans
- **WRC-07** revised the FSS Plan
- WRC-12, WRC-15, WRC-19.....improve procedures, considering advance of technology.....



# Space Plans Features (1/4)

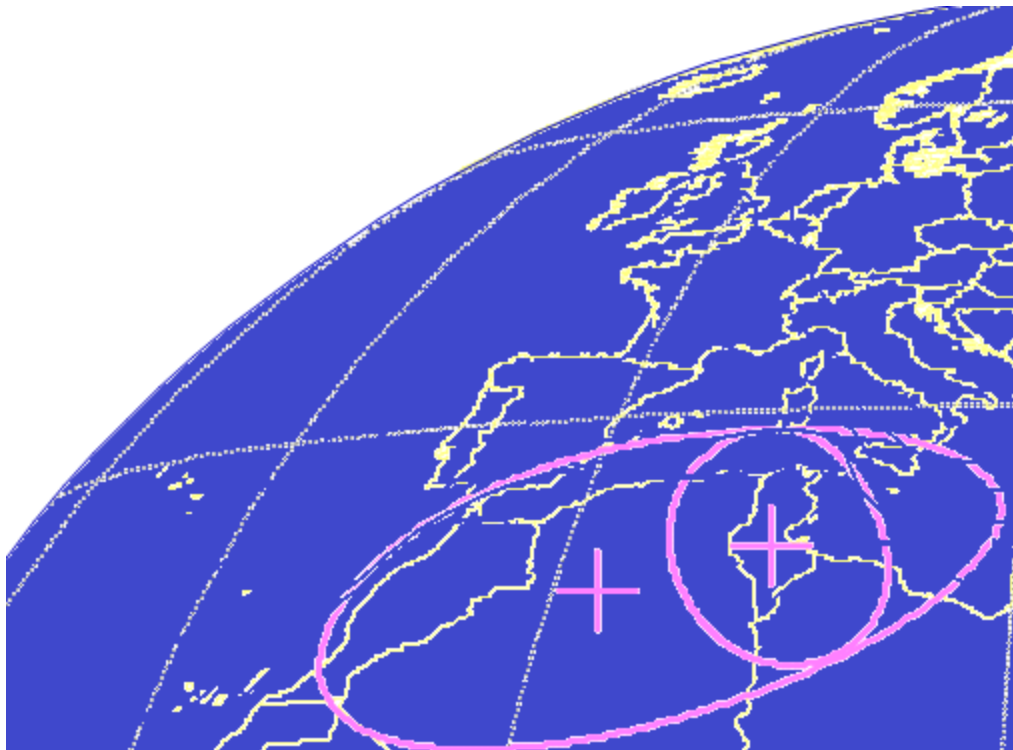
To guarantee equitable access, it is based on a reservation of capacity for future use by the ITU Member States:



- Not all Plan assignments/allotment are currently in operation, BUT are protected from harmful interference from other networks
- Standard parameters (assumptions) are required to ensure equity amongst Administrations and possible future use

# Space Plans Features (2/4)

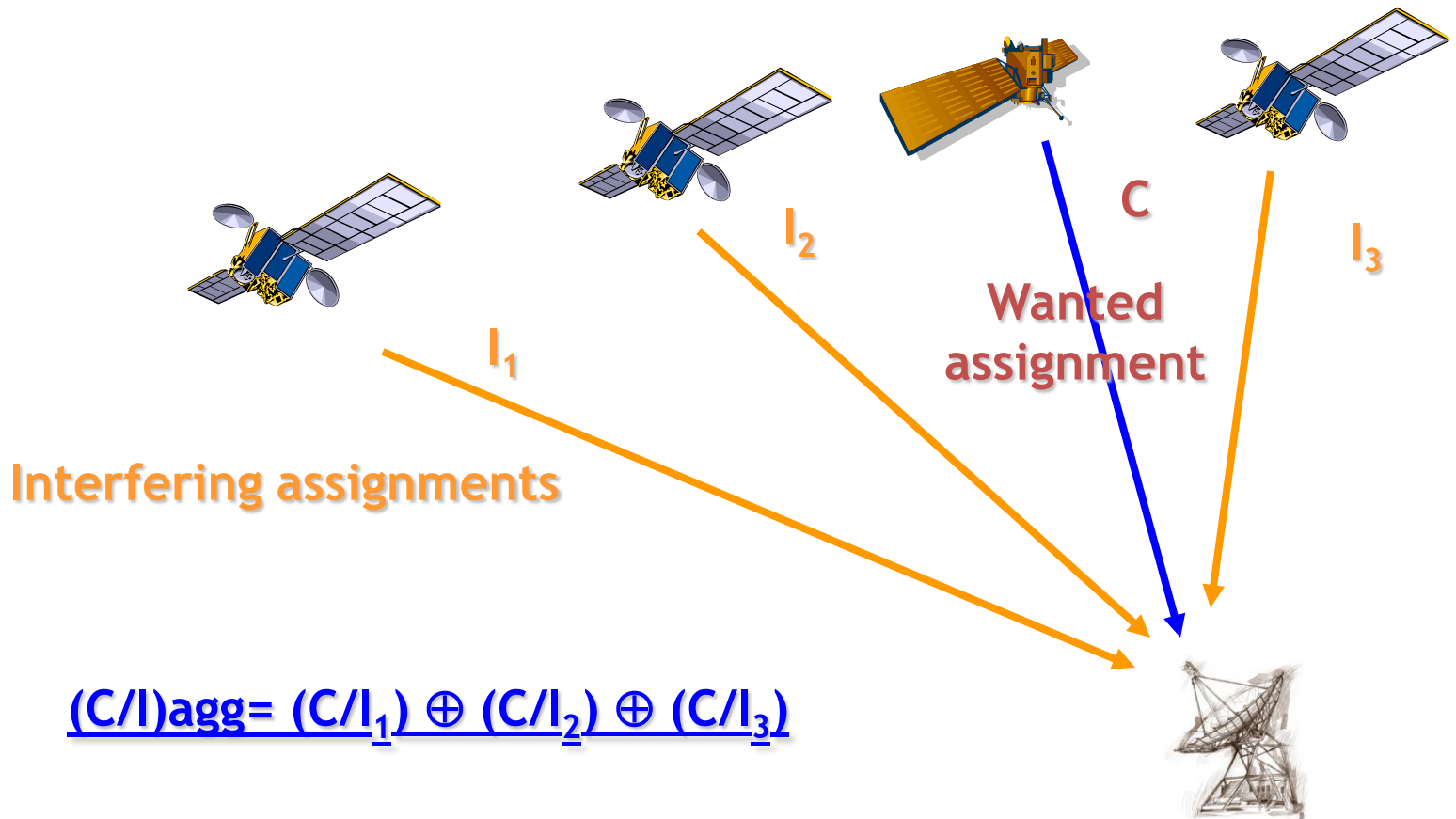
To guarantee equitable access, the beams cover the national territory of each Administration



# Space Plans Features (3/4)

Protection from harmful interference is provided based on the Plan (or List) characteristics and NOT on the characteristics entered into the Master Register at notification stage. This is different for networks operating in the non-plan frequency bands.

# Space Plans Features (4/4)



To use the space resources rationally, efficiently and economically,  
the Aggregate C/I method is used to identify potential interference.



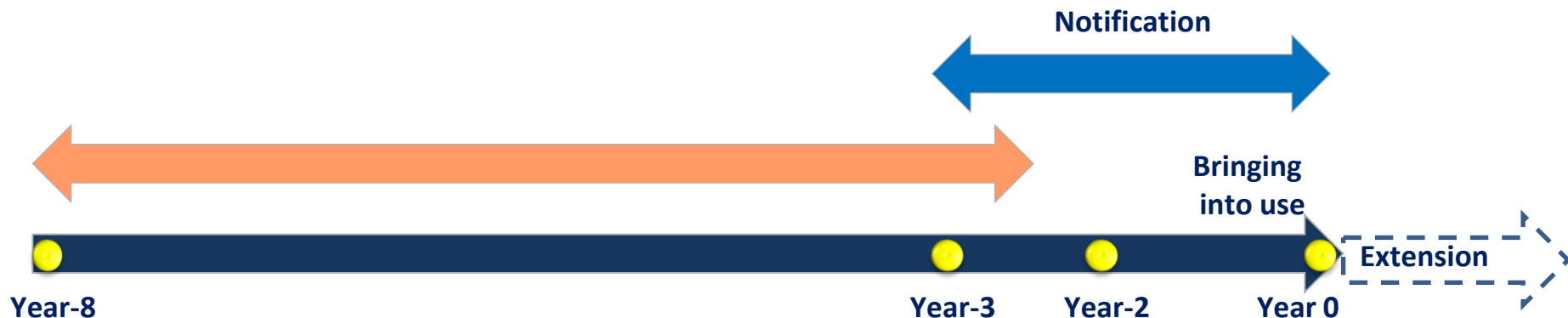
# Standard Parameters

## Main assumptions (with some exceptions)

- Same frequency band for each beam
- National coverage
- Elliptical beam using defined space station antenna pattern
- Defined C/N
- Same values of system noise temperature
- Similar power level
- Defined earth station antenna size and pattern
- Defined Aggregate C/I

# BSS Plan and FSS Plan 8-year Regulatory period

- to complete the procedure to be included in the Plan/List
- to bring into use assignments (confirmation through notification procedure)
- to submit due diligence information (Res.49)
- can be extended to maximum 3 years in case of launch failure



# BSS Plan and FSS Plan

## Some Distinct Features

### APPENDICES 30/30A – BSS Plan

- Plans separated by Regions
- Shared with other space services in other Regions
- Coordination Arc, Lists for R1&3
- Cluster concept in Region 2 Plan

### APPENDIX 30B – FSS Plan

- **World wide**
- **Allotment (conversion to assignment)**
- **Together with Single Entry criteria**
- **Protection based on grid points in service areas for downlinks**

# Space Plans Procedures

## Space Plans and operational systems

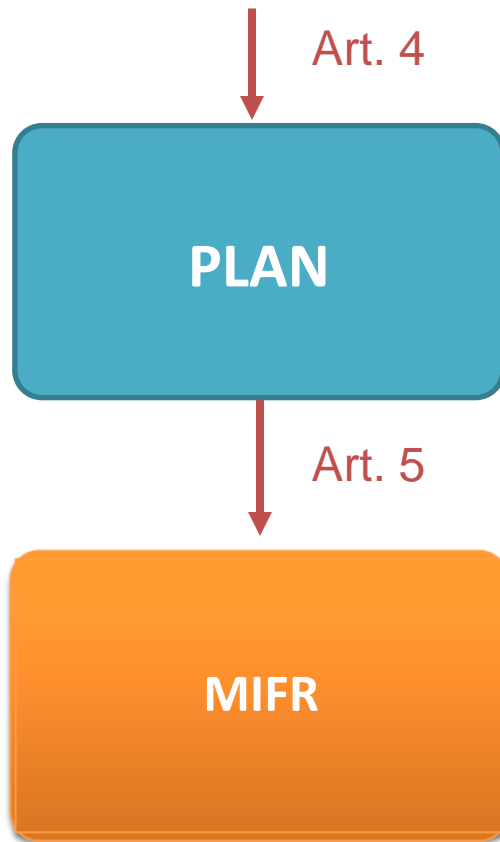
3 status possible for the frequency



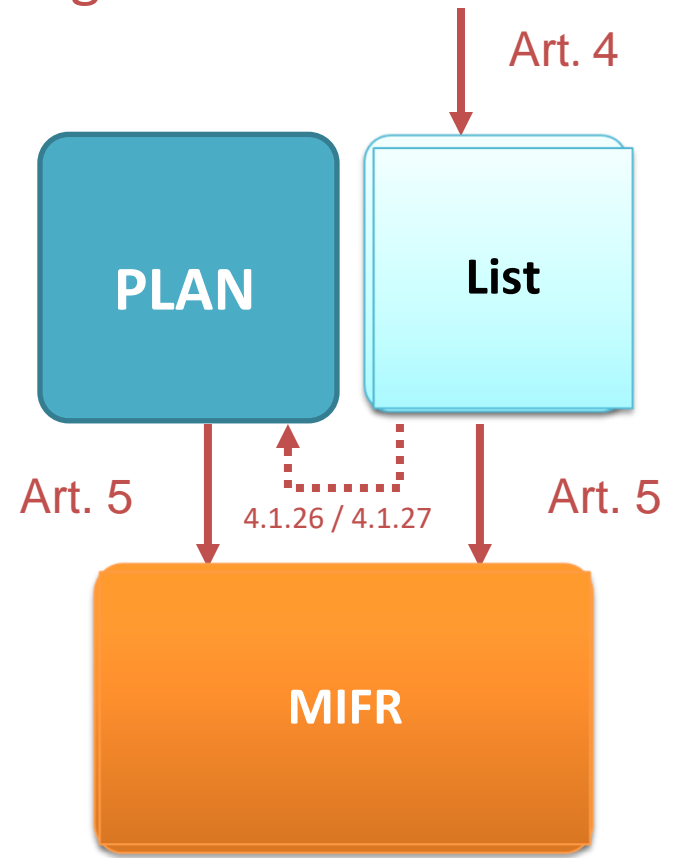
The Articles and the Appendices of the Radio Regulations establish the procedures to fulfil in order to enter the allotments/assignments in the Master Register (MIFR) whenever they are brought into use.

# AP30/30A BSS Plan Procedure Summary

Region 2

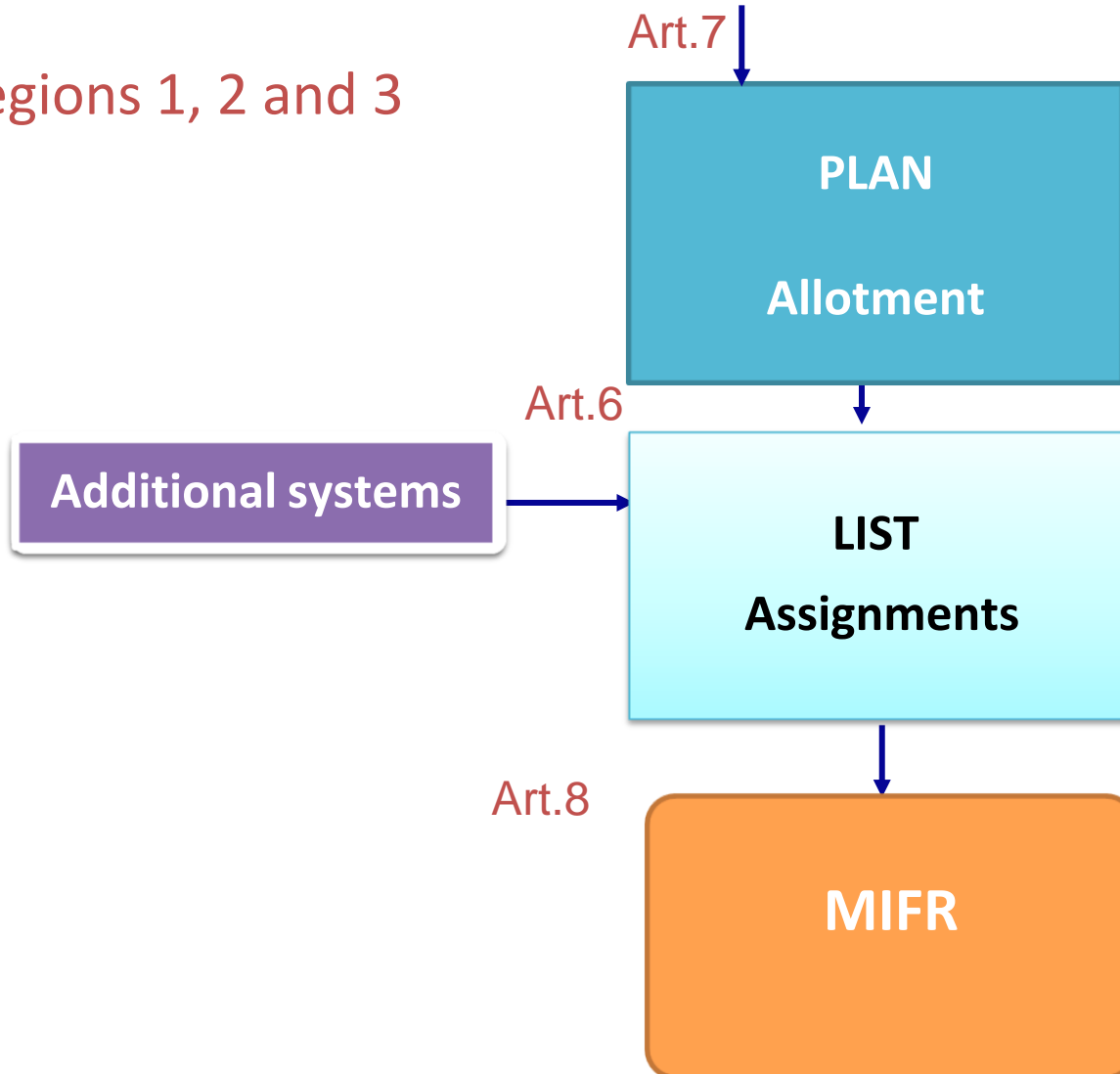


Regions 1 and 3

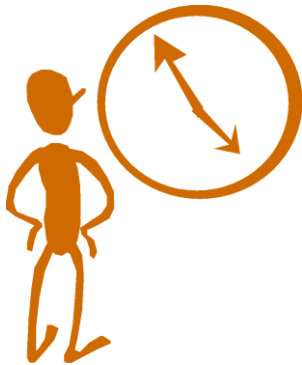


# AP30B FSS Plan Procedure Summary

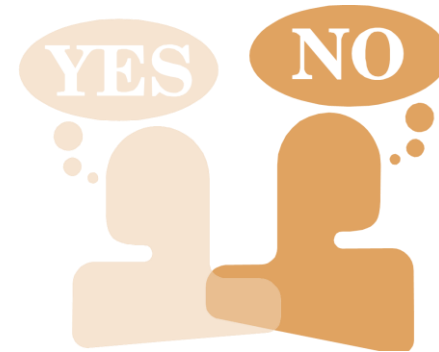
Regions 1, 2 and 3



# How to Apply ? What to Do ?

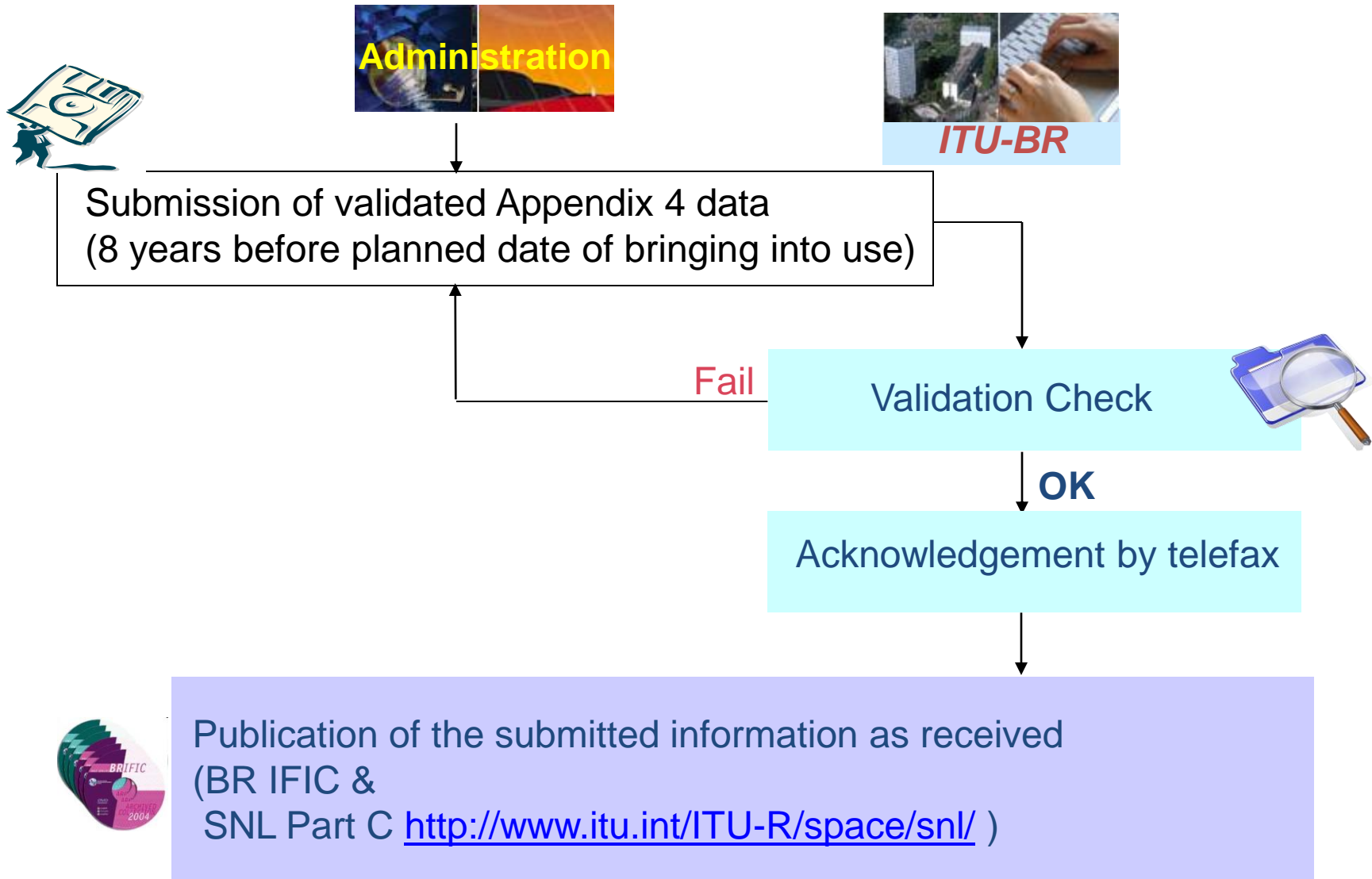


**As a notifying  
Administration**



**As a possibly  
affected  
Administration**

# Appendices 30/30A (1)





# Appendices 30/30A (2)



Completeness examination and telefax

Reply must be sent within 30 days  
(receivability ROP)

Regulatory/technical examination



Publication of Part A Special Section (BR IFIC) that contains the filed satellite network characteristics and potentially affected administrations. Results of the Bureau's MSPACEg calculations are also included in the BR IFIC.



# Appendices 30/30A (3)



ITU-BR

Administrations should examine each BR IFIC to see if their assignments are affected and respond within 4 months

Region 2: no comment within the 4 month period are **deemed to have agreed**.

**Regions 1/3:** no comment = **disagreement**  
no reply to assistance reminder = **agreement**



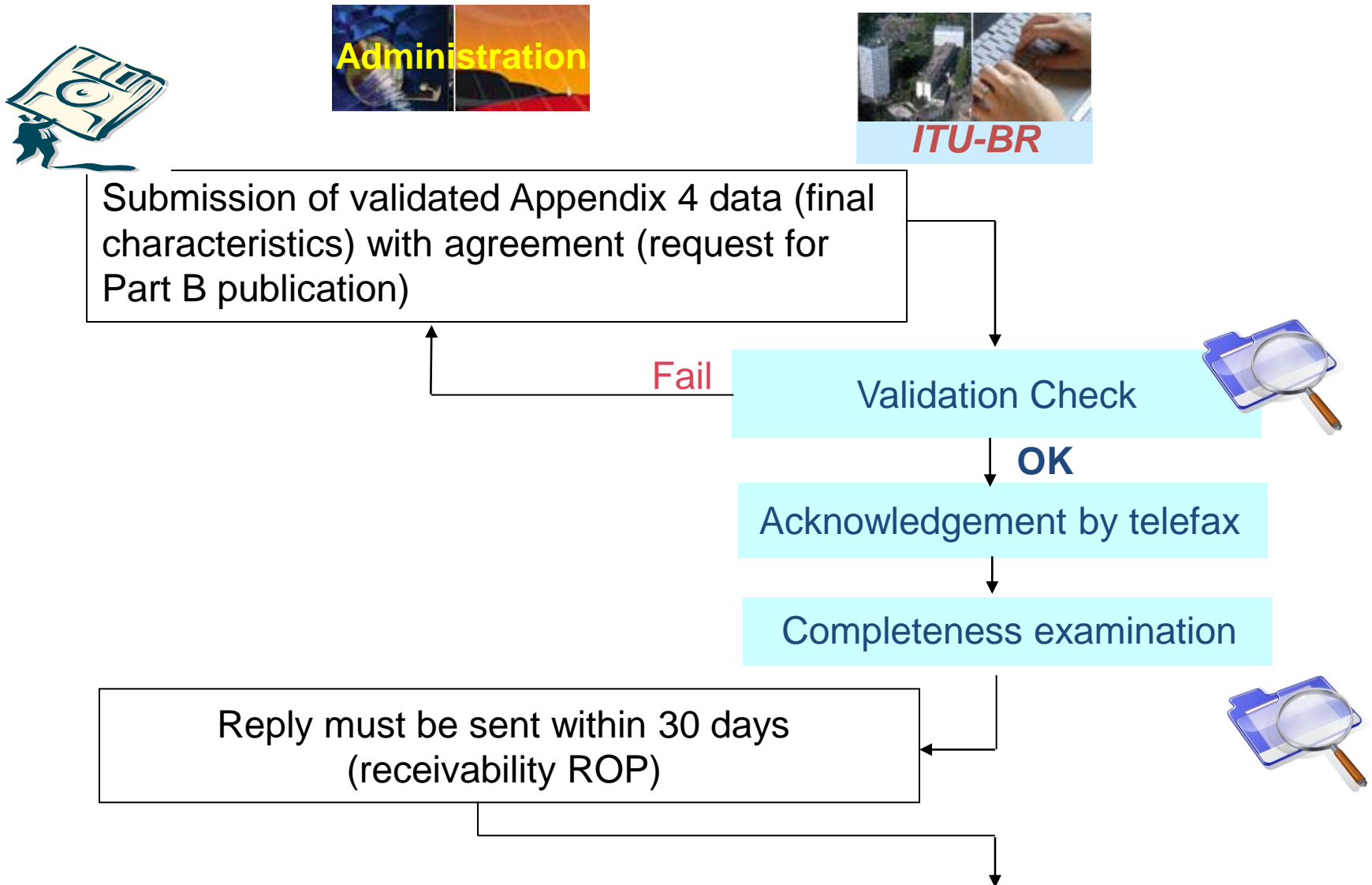
SpaceCom software compulsory for R2 only since 1 Jan 2017



Region 2: After the 4 month, the BR prepares a list of agreements required to complete the coordination procedure and publishes it in a Part D Special Section.



# Appendices 30/30A (4)




# Appendices 30/30A (5)



Regulatory/technical examination

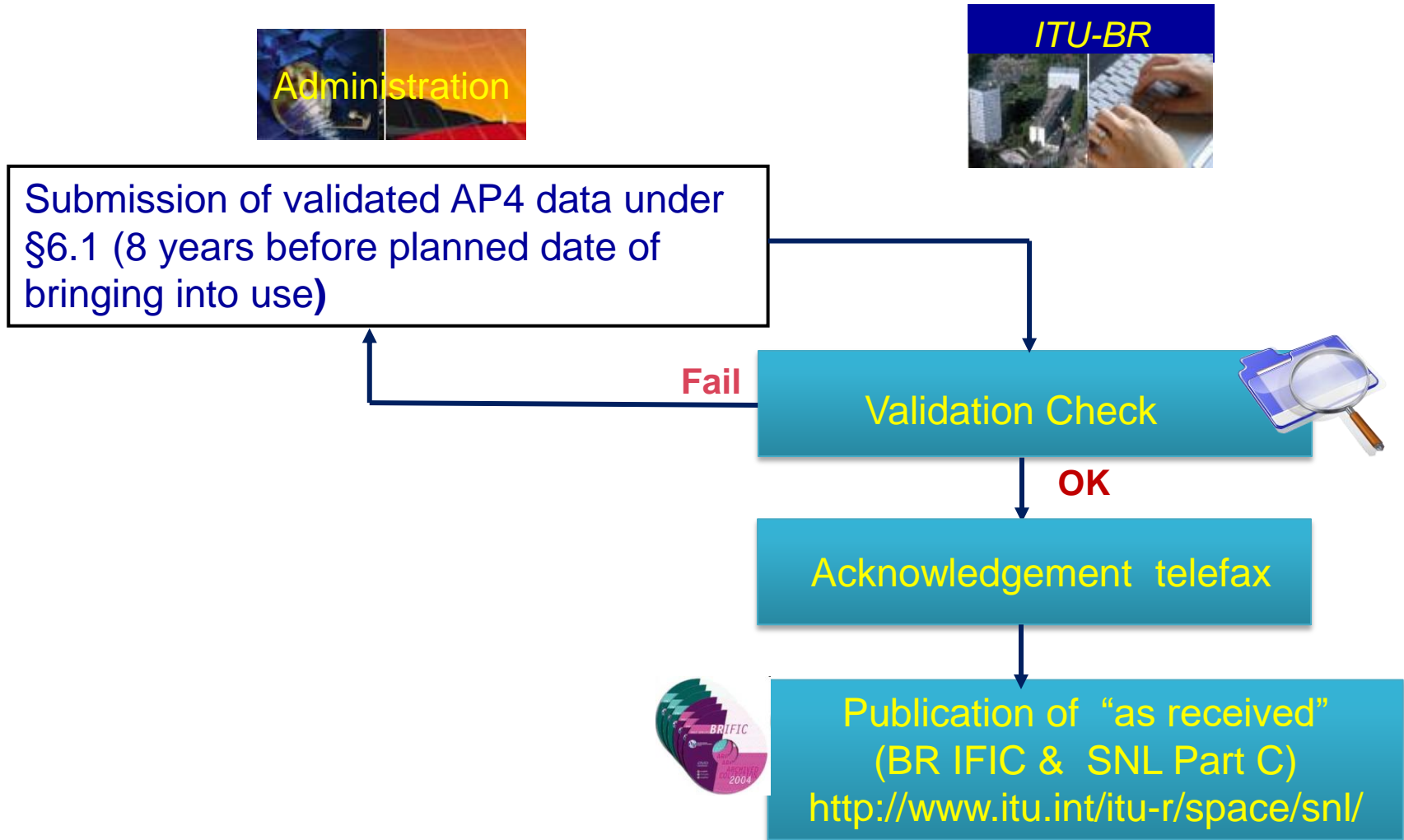
Publication of Part B Special Section (BR IFIC) that contain the final characteristics



Submission of notification  
(confirmation of bringing into use),  
Res.49 due diligence information

Request for extension of period of  
operation for assignments in the List  
(additional 15 years), if necessary.

# Appendix 30B (1)



# Appendix 30B (2)



Completeness examination and telefax

Reply must be sent within 30 days (receivability RoP)

Regulatory/technical Examinations (§6.3, §6.5)



Unfavorable assignments return to notifying Administration

Publication of AP30B/A6A Special Section (satellite network characteristics and potentially affected administrations)



# Appendix 30B (3)



Administrations should examine each BR IFIC to see if their assignments are affected and respond within 4 months

NO   
SpaceCom!

Affected administrations that do not comment within the 4 month period are deemed to have NOT agreed

Notifying administration can request assistance of the BR to receive replies from affected administrations

The BR sends reminders to the affected administration which has not replied

No response from Affected administrations to the BR's reminders is considered as agreement

# Appendix 30B (4)



Submission of validated AP4 data under §6.17 (final characteristics) with required agreements

Validation Check 

Fail

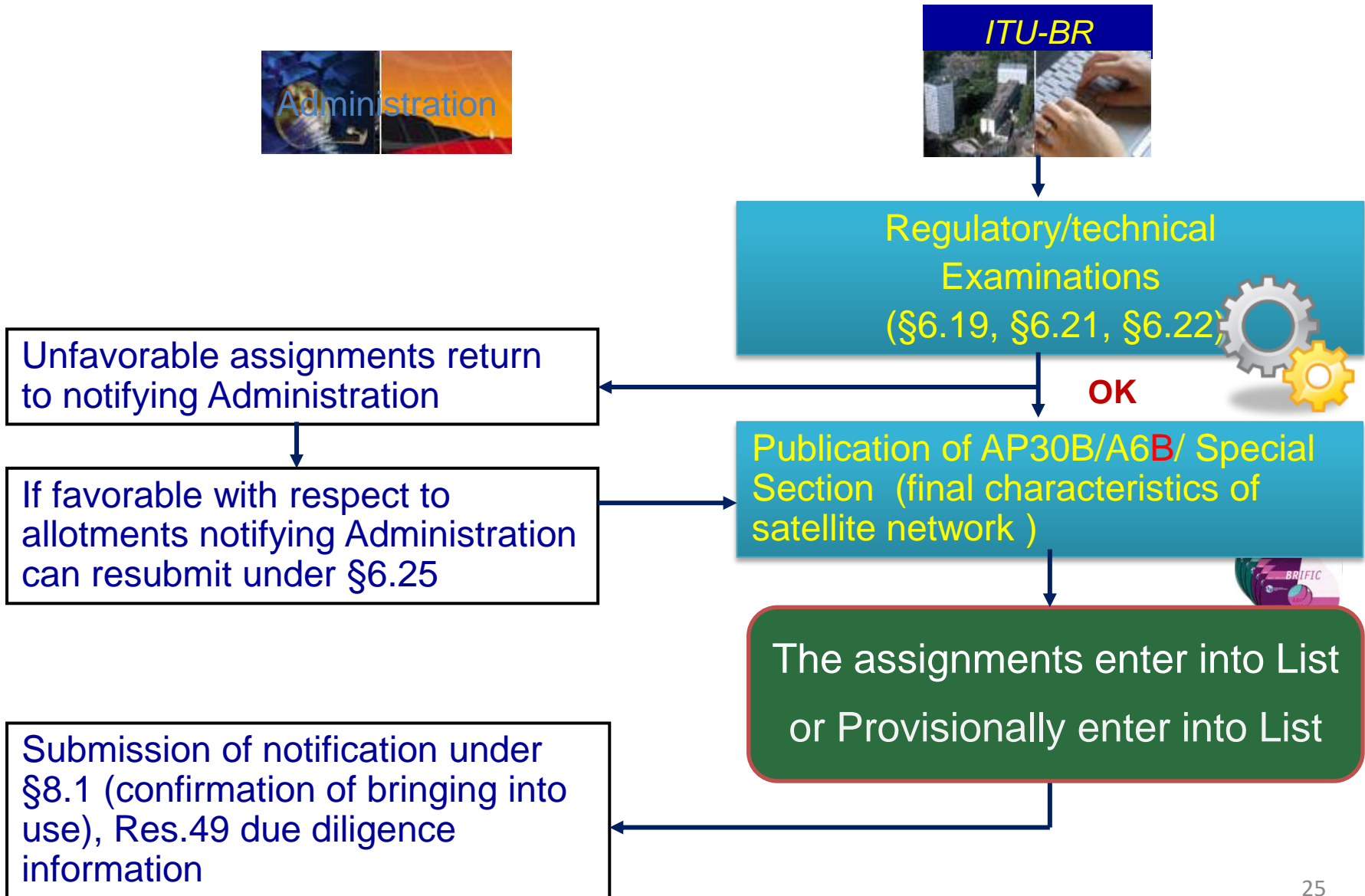
OK

Completeness examination and telefax

Reply must be sent within 30 days (receivability RoP)



# Appendix 30B (5)



# Tracking Regulatory Deadlines for Plans

## APPENDICES 30/30A

- 4 months** for comments  
explicit Region 1&3 (Rev. WRC-15)
- 30 days** for decision after assistance  
reminder
- 8 years** for bringing into use,  
inclusion in the Plan/List, Res.49  
not later than **3 months** before DBIU  
for notification
- 3 years** after suspension for Region  
1&3 List assignments (Rev.WRC-12)
- 90 days** for confirmation of DBIU
- 15 years** for R1&3 List

## APPENDIX 30B

- 4 month** for comments (explicit)
- 30 days** for decision after  
assistance reminder
- 8 years** for bringing into use,  
inclusion in the List, notification,  
Res.49
- 3 years** after suspension (Rev.  
WRC-12)
- 90 days** for confirmation of DBIU

# Plan and Non Plan procedures

	Non Plan FSS GSO	AP30/30A (R1/3)	AP3B (Additional uses)
Regulatory Period	7 years	8 years	8 years
Res. 49	Yes	Yes	Yes
Coordination Publication	CR/C	Part-A	A6A
Inclusion in the List	NA	Part-B	A6B
Notification	Yes	Yes but not for protection	Yes but not for protection
Service Area	Any	Any with agreement	Any with agreement
To be compatible with	Previously filed	Assignments in the Plan/List, previously filed	Allotment, List, previously filed
Identification	Both direction Single entry	One direction Single entry and aggregate	One direction Single entry and aggregate
No comment within 4 months after publication	Assistance No.9.46	Assistance §4.1.10 of AP30/30A (WRC-15)	Assistance §6.13 of AP30B

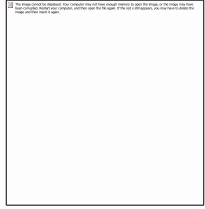
# 5 Key Points to Remember

- Plans ensure equitable access and equitable use of frequency and orbital resources
- Plan and non-plan procedures have similarities and differences
- In the Radio Regulations, Appendices 30/30A/30B contain the Plan/List/MIFR processes and definitions
- Processing deadlines should be carefully tracked
- Make comment/Reply to assistance reminder when your Administration is identified as potentially affected by new assignments

General information relating to Space Plans

<http://www.itu.int/ITU-R/go/space-plans>





**THANK YOU**