

الاتحاد الدولي للاتصالات



TERRESTRIAL SERVICES PLANS AND MASTER REGISTER, Other than Broadcasting service



الحلقة الدراسية الإقليمية
للاتصالات الراديوية من أجل البلدان العربية

تونس العاصمة، تونس
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Outline of the presentation

- Frequency **allotment** plans
- Frequency **assignment** plans
- Coordination procedures for aeronautical mobile and maritime mobile services
- Article 11 procedures

Frequency allotment plans

- **AP25:** Worldwide frequency allotment plan for **coast radio telephone stations** in band 4000 - 27500 kHz
- **AP26:** Worldwide frequency allotment plan for **aeronautical mobile (OR) service** in 3025 – 18030 kHz
- **AP27:** Worldwide frequency allotment plan for **aeronautical mobile (R) service** in 2850 – 22000 kHz
- **GE85-MM-R1:** Frequency allotment plan for national channels in **Digital Selective Calling** (DSC) system in band 435-526.5 kHz

Allotment plan for the maritime mobile service (AP25 to RR)

Scope



Worldwide allotment plan, maritime mobile service (MMS)



Coast radiotelephone stations in 4 000 - 27 500 kHz



240 channels; allotment areas



Number of “restricted” allotments: limitations on service area, power, hours of operation, etc.

Characteristics



3 kHz channels (separation between reference frequencies)



Bandwidth – 2.8 kHz



Class of emission - J3E



Maximum peak envelope power - 10 kW

Allotment plan for the maritime mobile service (AP25 to RR)

Example: use of 8783.4 kHz from AP25 plan

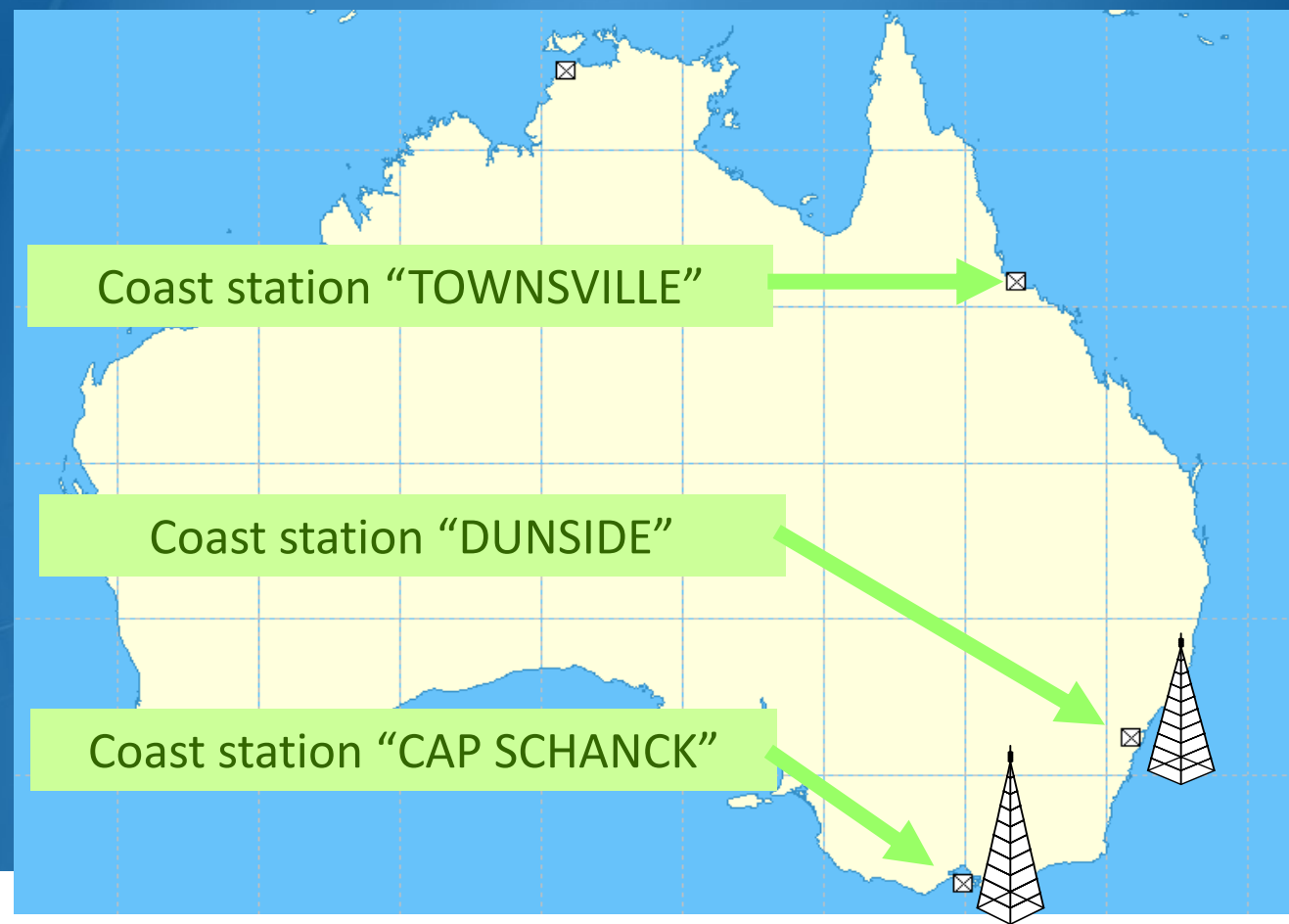


8 783.4	AUS
(8 782)	D
	CHN
(8 722)	G
	HNG
	HRV
	IRN
	KEN
	MRC
	SUI
	UKR
	USA E
	USA SO
	USA W

Frequency channel on 8783.4 kHz is allotted to geographical area AUS Australia may assign this channel to coast stations in the allotted area

Allotment plan for the maritime mobile service (AP25 to RR)

8 783.4	AUS
(8 782)	B
	CHN
(822)	G
	HNG
	HRV
	IRN
	KEN
	MRC
	SUI
	UKR
	USA E
	USA SO
	USA W



Channel on 8783.4 kHz has been assigned to 3 coast stations of AUS

AP25 plan modification procedure (1)

- Plan modification procedure (AP25, Section I) applies when:
 - Administration needs a new allotment (AP25/1.1.1)
 - Administration needs an additional allotment (AP25/1.1.2)
 - Administration intends to replace an allotment by another one in the same band (AP25/1.1.2)

AP25 plan modification procedure (2)

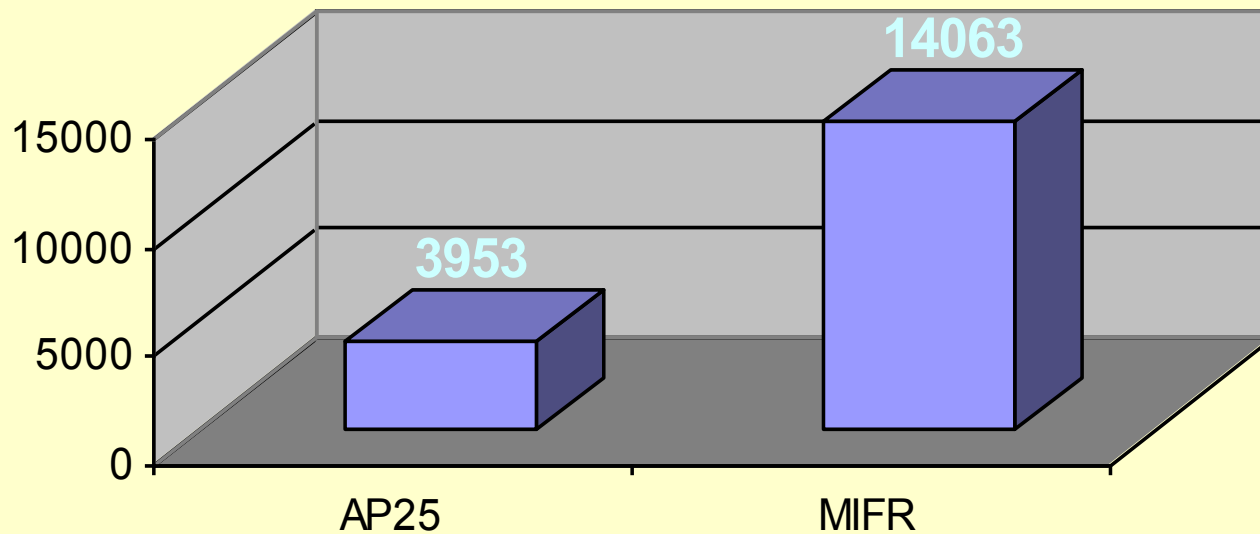
- Submission of AP4 information to the BR (electronic T15 form)
- Publication of the information and apparent incompatibilities in Special Section of BRIFIC
- Coordination with affected administrations
- Possible assistance of the BR at different stages of coordination

AP25 plan modification procedure (3)

- Successful coordination - recording in the Plan
- Non-reply or continuing disagreement - examination by the BR
- The examination results are favorable – Plan update
- The examination results are unfavorable – BR searches for the least effected channel and enters it in the Plan, if requested by the administration

AP25 Plan and MIFR statistics

Number of entries in AP25 Plan and related MIFR assignments






Regulation of aeronautical mobile service (AMS)




- AMS is subdivided into route (R) and off-route (OR) services
- Worldwide allotment plans of AP26 and AP27
- Coordination procedures through ICAO
- RR contains some additional mandatory provisions, e.g. prohibition of public correspondence (nature of Service CP and CR) in the exclusive aeronautical bands

Allotment plan for aeronautical mobile (OR) service (AP26)

Scope

-  Worldwide plan for aeronautical mobile off-route service
-  Planned band: 3 025 - 18 030 kHz (10 sub-bands)
-  Carrier frequencies, allotment areas

Characteristics

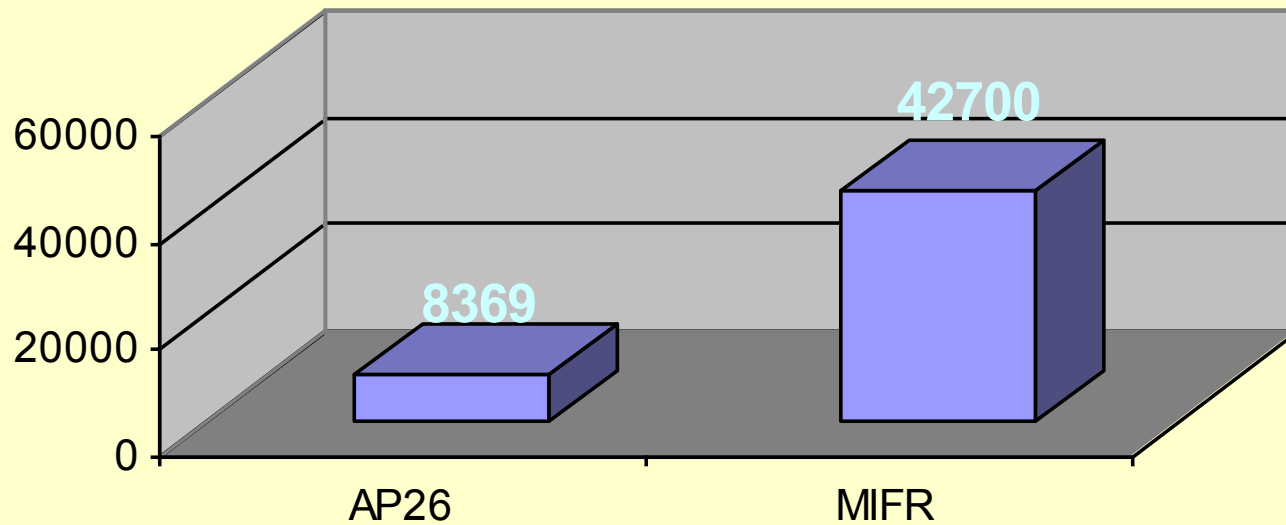
-  Maximum bandwidth - 2.8 kHz
-  Classes of emission - J3E; A1A; A1B; F1B(A,H)2(A,B); (R,J)2(A,B,D); J(7,9)(B,D,X)
-  Mean effective radiated power - 1 kW (aeronautical stations) 50 W (aircraft stations)

Procedure for modification of AP26 Plan

- Requests for a new allotment - BR selects an appropriate allotment and enters it in the Plan
- Requests for an additional allotment - the allotment is entered in the Plan only if it is compatible with the remaining allotments
- Requests for the suppression of an allotment - BR cancels the allotment from the allotment arrangement

AP26 Plan and MIFR statistics

Number of AP26 Plan entries and related MIFR assignments



Allotment plan for aeronautical mobile (R) service (AP27)



Scope

- Worldwide plan for aeronautical mobile route service
- Planned band: 2 850 - 22 000 kHz
- Carrier frequencies, geographical areas (MWARA, RDARA, VOLMET areas)

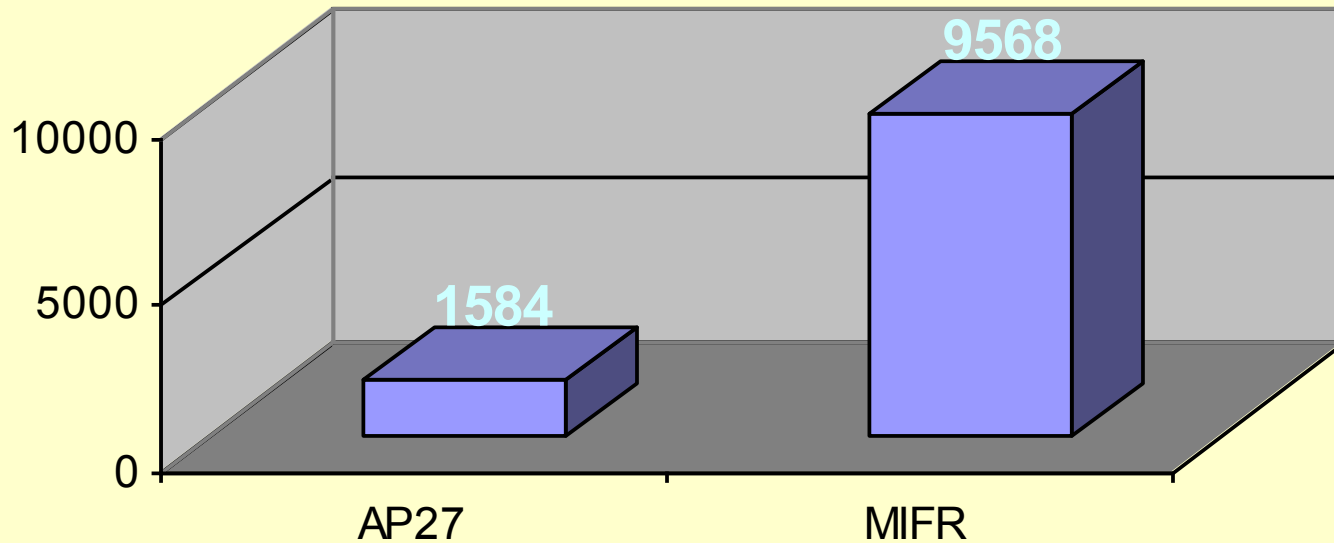


Characteristics

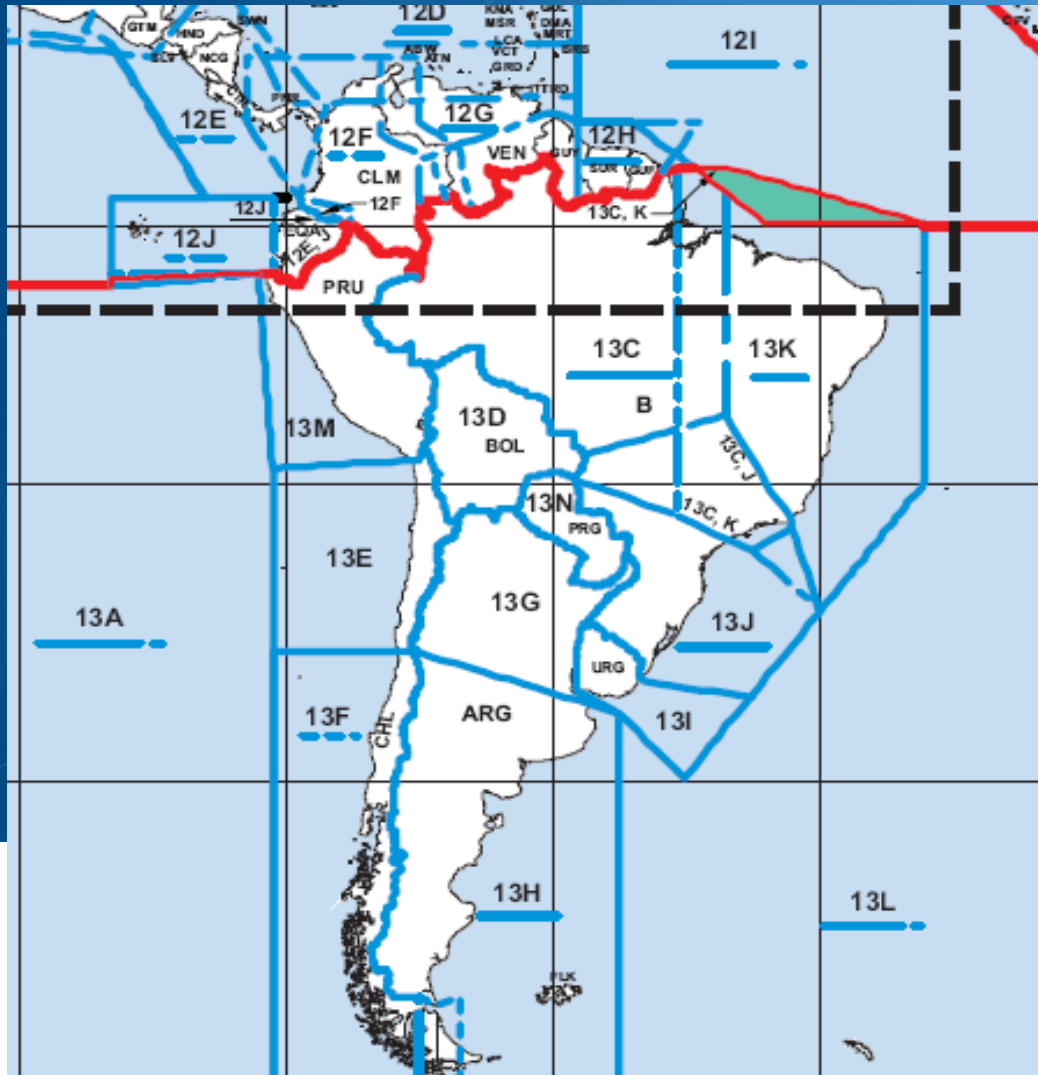
- Classes of emission: J3E; H2B, J7B, J2D, J9X (A1A/A1B) and F1A/F1B
 - Frequency separation - 3 kHz, multiple to 1 kHz
- No plan modification procedure

AP27 Plan and MIFR statistics

Number of entries in AP27 Plan and related MIFR assignments



Allotment plan for aeronautical mobile (R) service (AP27)



Regional and domestic route areas of AP27 Plan in the South America

Frequency assignment plans

- **GE85-R1-MAR:** Frequency assignment plan for the **maritime mobile service** in the MF bands in Region 1
- **GE85-R1-AER:** Frequency assignment plan for the **aeronautical radionavigation service** in the MF bands in Region 1
- **GE85-EMA:** Frequency assignment plan for the **maritime radionavigation service** (radiobeacons) for the European maritime area in the band 283.5 - 315 kHz

Frequency assignment plan for maritime mobile service in Region 1 (GE85-R1-MAR)

Scope

- Region 1 plan
- Planned bands: 415 – 495 kHz, 505 - 526.5 kHz, 1606.5-1625 kHz, 1635-1800 kHz, 2045-2160 kHz
- Takes into account aeronautical radionavigation, fixed, land mobile and radiodetermination services

Characteristics

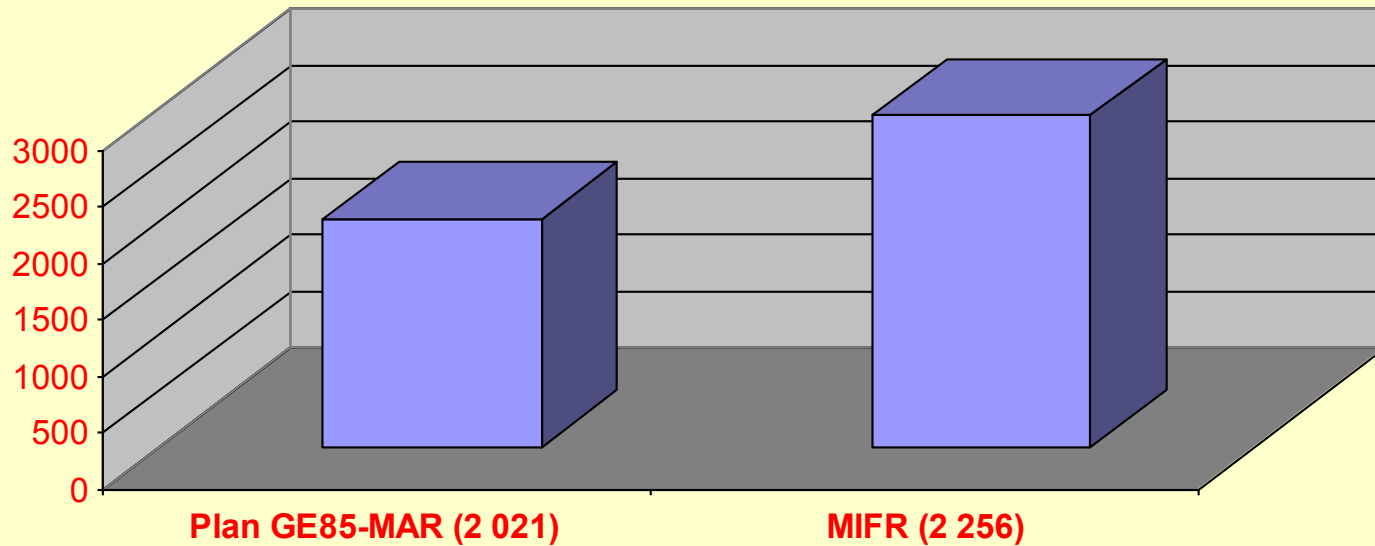
- Classes of emission - A1A, F1B, J3E
- Chan. spacing: 0.5 kHz (A1A, F1B), 3kHz (J3E)
- Paired frequencies for coast and ship stations

Plan modification procedure for GE85-R1-MAR

- Submission of AP4 information to the BR
- Publication of the complete information in BRIFIC
- Coordination with affected administrations having:
 - assignments in conformity with the Plan
 - assignments of co-primary unplanned services
- Informing the BR about the results (90 days)
- Successful coordination - recording in the Plan
- Disagreement – coordination between administrations

GE85-MAR-R1 Plan and MIFR statistics

Entries in GE85-MAR Plan and related MIFR assignments



Assignment plan for aeronautical radio navigation service in Region 1 (GE85-R1-AER)

● Scope

- Region 1 plan
- Frequency bands: 415 – 435 kHz, 510 – 526.5 kHz
- Takes into account also maritime mobile service stations

● Characteristics

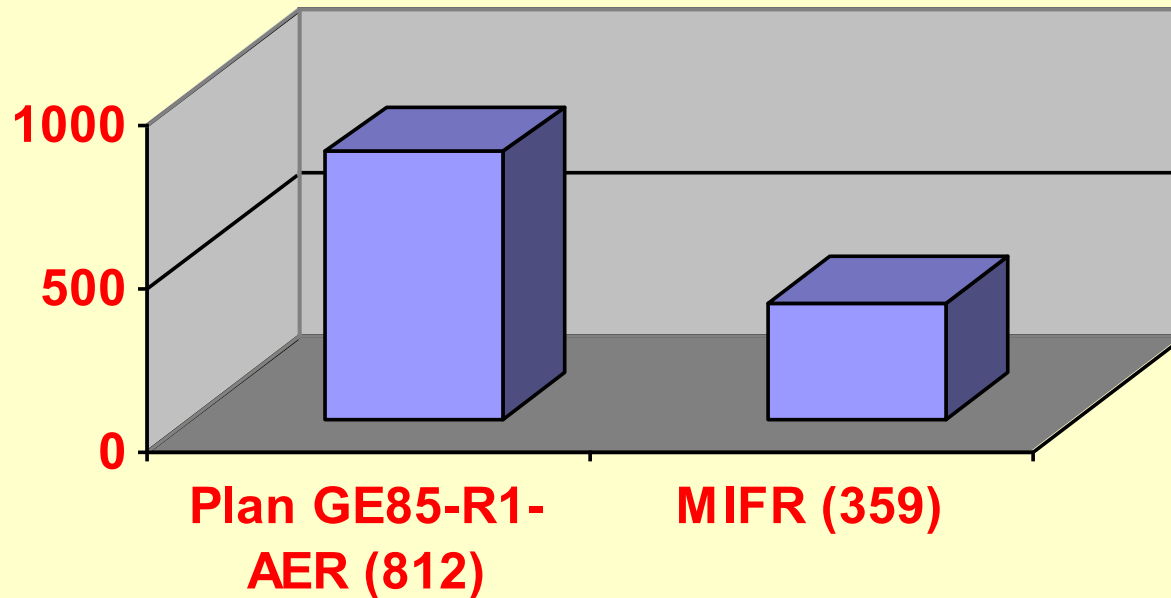
- 34 channels
- Channel spacing - 1 kHz (0.5 kHz exceptionally)
- Classes of emission – A1A, A2A

Plan modification procedure for GE85-R1-AER

- Submission of AP4 information to the BR
- Publication of the complete information in BRIFIC
- Coordination with affected administrations having assignments in conformity with the Plan
- Informing the BR about the results (90 days)
- Successful coordination - recording in the Plan
- Disagreement – coordination between administrations

GE85-R1-AER Plan and MIFR statistics

Number of entries in GE85-R1-AER Plan and related MIFR assignments



Assignment plan for maritime radionavigation service (radiobeacons) (GE85-EMA)



Scope

- Plan for European maritime area
- Frequency bands: 283.5 - 315 kHz
- Provides for compatibility with ARNS



Characteristics

- Class of emission – A1A, F1B, G1D
- Minimum field strength to be protected:
 - 34 dB(μ V/m) for stations north of 43 N parallel
 - 37.5 dB(μ V/m) for stations on and south of 43 N parallel

GE85-EMA plan modification procedure (1)

- Plan modification procedure is combined with Art. 11 notification procedure
- Seeking agreement of administrations that could be affected
- Submitting AP4 information to the BR on T12 form (not earlier than 90 days before operation starts)
- BR publishes the information in Part 1 of BRIFIC
- BR identifies affected administrations and informs the proposing administration

GE85-EMA plan modification procedure (2)

- BR records the assignment in the MIFR with the names of administrations whose agreement has to be obtained
- Proposing adm. informs BR about the results of coordination
- All agreements obtained – BR updates the Plan
- Agreements not obtained - BR asks proposing adm. to delete the assignment from the MIFR
- If proposing administration insists, the assignment retained in MIFR with unfavorable finding the Plan is not updated

Coordination procedures for maritime mobile service

- Standard procedure of Article 9
- Res. 339 (Rev.WRC-07): coordination of NAVTEX services on 490 kHz, 518 kHz and 4209 kHz
 - Performed through IMO
 - IMO provides ITU with coordination information
 - ITU publishes the information in List IV (List of Coast Stations and Special Services Stations)

Coordination procedures in the aeronautical mobile service

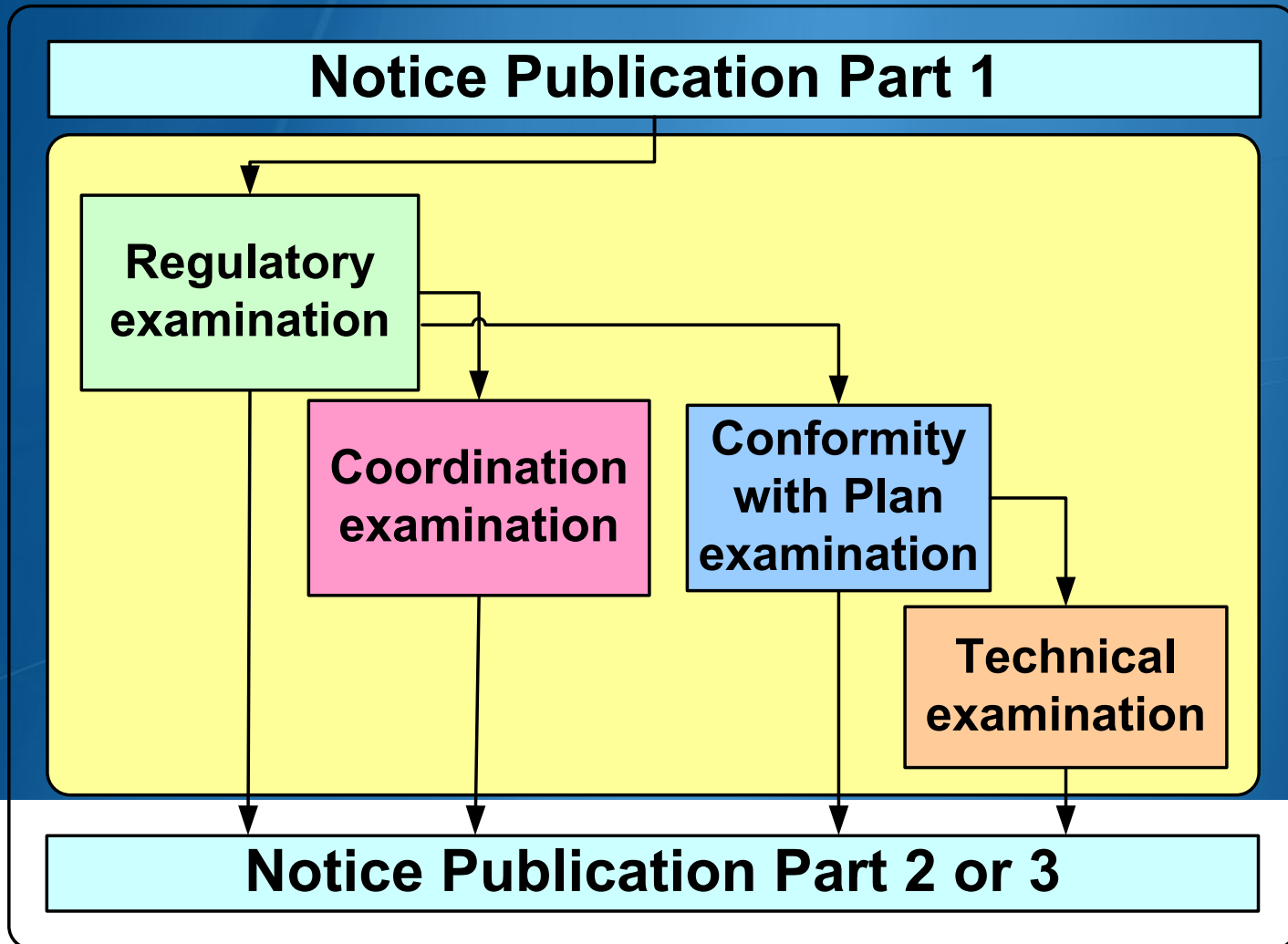
- ❶ No special procedures, but coordination is desirable
- ❷ Role of ICAO and its regional offices: coordination of frequencies for (R) service in exclusive HF bands and in 117.975 - 137 MHz band
- ❸ Notification after coordination through ICAO regional office

Plans Table

Plan	Radiocommunication Service	Frequency Band	Geographical Area
Allotment Plan AP25	Maritime Mobile	4000-27000 kHz	Worldwide
Allotment Plan AP26	Aeronautical Mobile (OR)	3025-18030 kHz	Worldwide
Allotment Plan AP27	Aeronautical Mobile (R)	2850-22000 kHz	Worldwide
Allotment Plan GE85-MM-R1	Maritime Mobile (DSC)	435-2160 kHz	Region 1
Allotment Plan GE85-R1-MAR	Maritime Mobile	415-2160 kHz	Region 1
Allotment Plan GE85-R1-AER	Aeronautical Radionavigation	415-526.5 kHz	Region 1
Allotment Plan GE85-EMA	Maritime Radionavigation	283.5-315 kHz	European maritime Area

Examination Procedures for Frequency Assignments Notices concerning Terrestrial Services (except LF/MF and VHF/UHF Broadcasting Services) under Article 11

General procedure Article 11

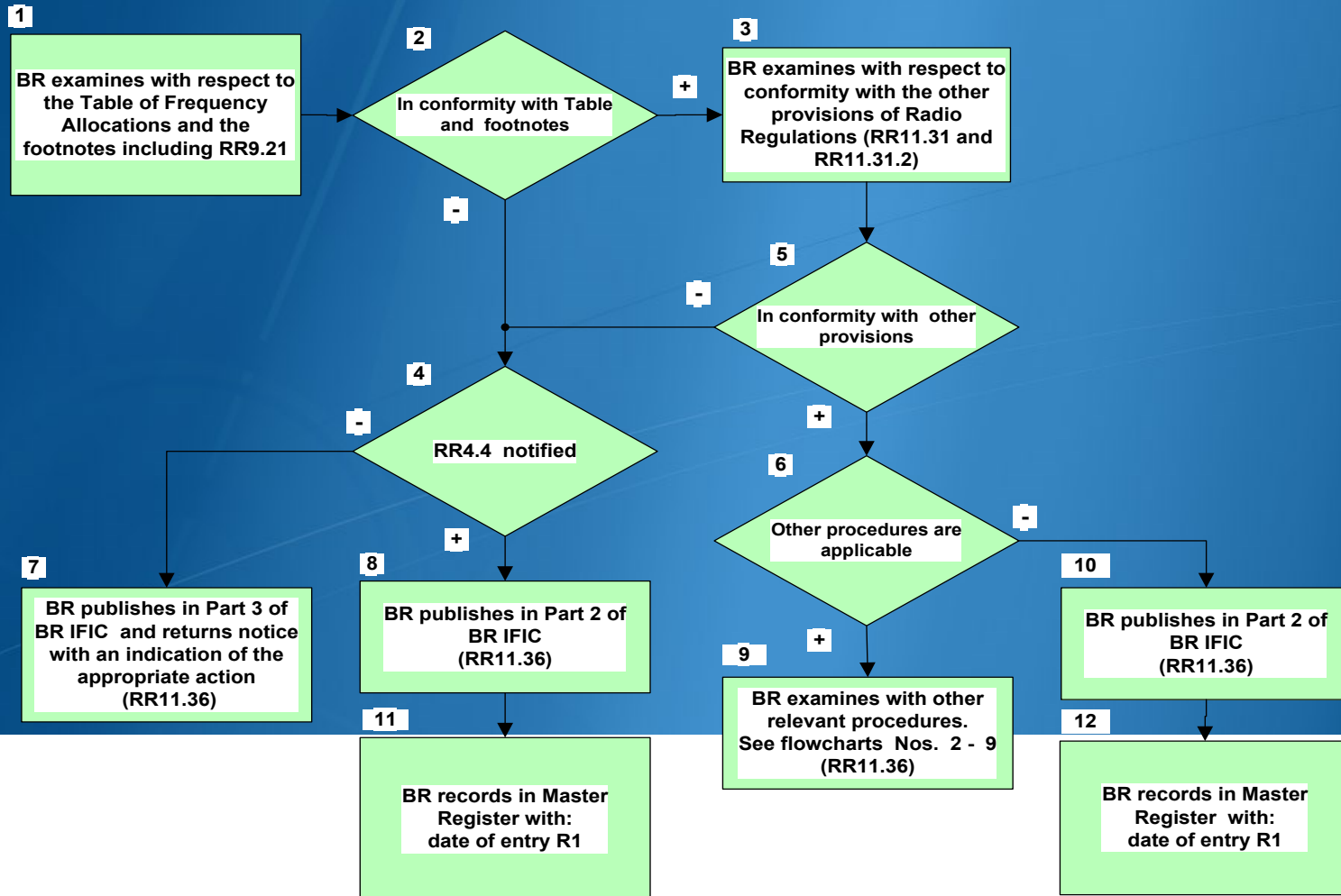


Examination types

- Regulatory examination
 - conformity with the Table of Frequency Allocations and associated provisions in Article 5 of the RR and with other provisions of the Radio Regulations
- Conformity with respect to a coordination procedure
- Conformity with respect to world-wide or regional plans
- Technical examination

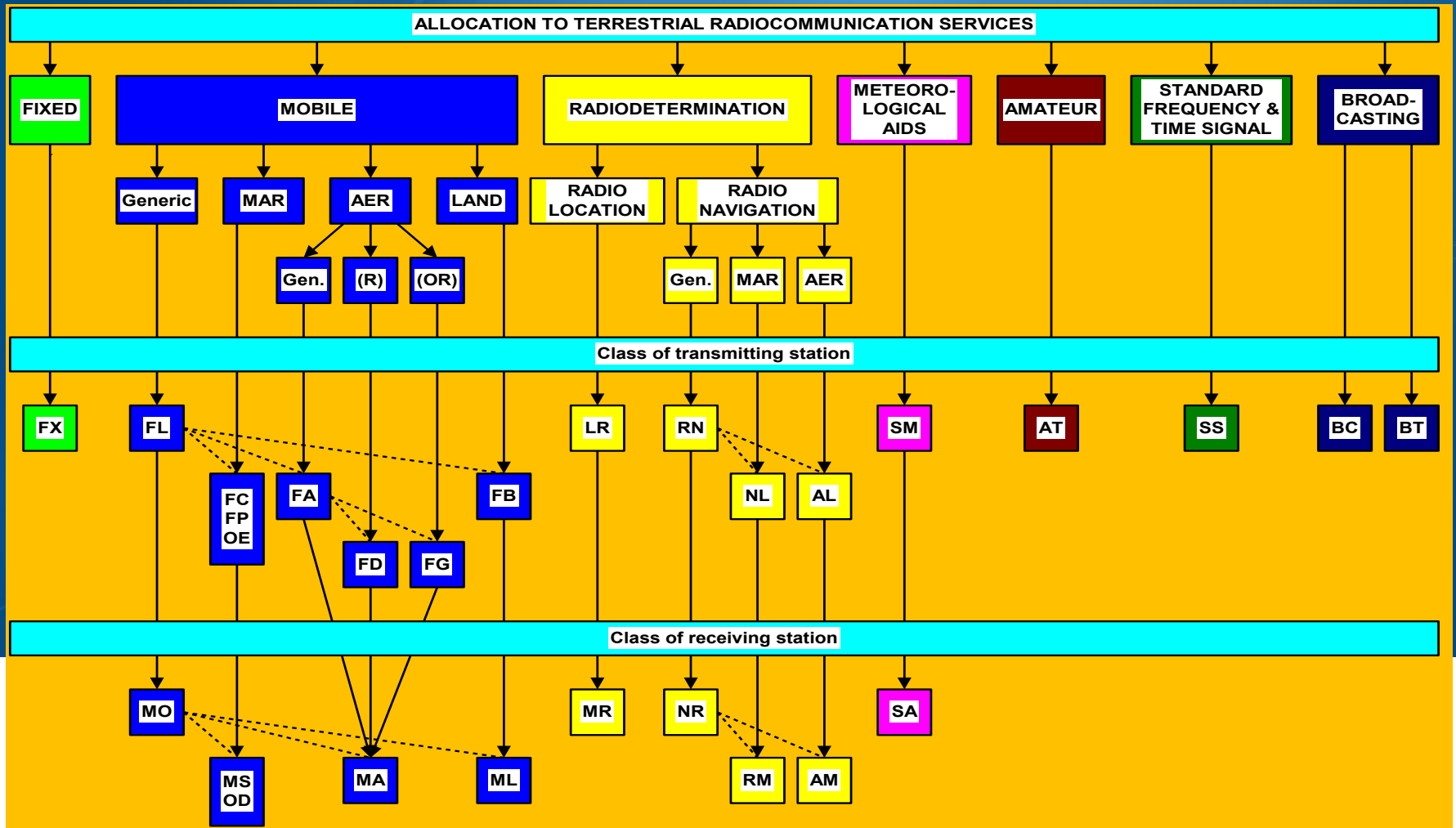
Regulatory examination

Procedures relating to regulatory examination

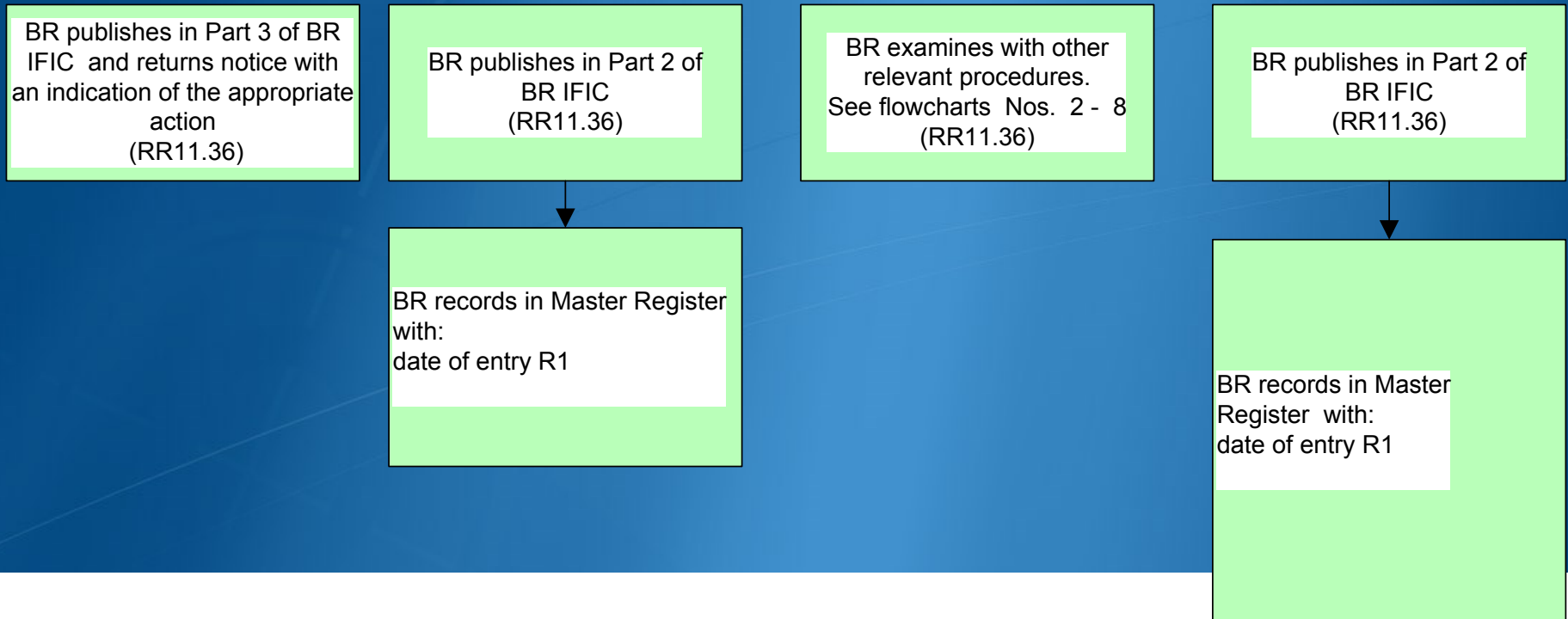


Regulatory examination

Permitted class of station



Regulatory examination Results

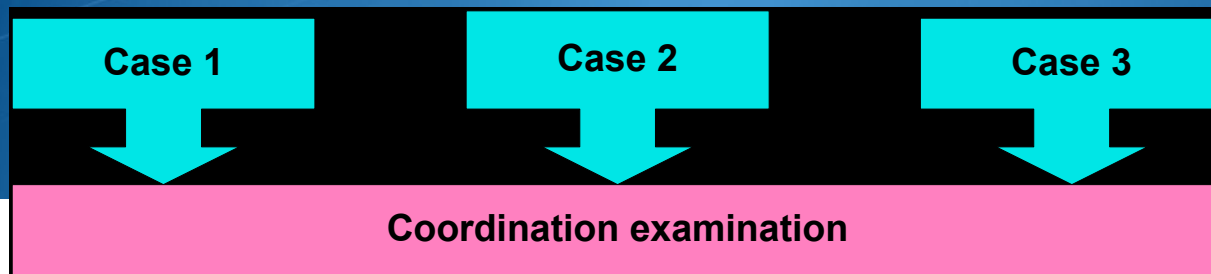


Regulatory examination (Example)

Allocation to services		
Region 1	Region 2	Region 3
322-328.6	FIXED MOBILE RADIO ASTRONOMY 5.149	
<p>Example for FIXED service with <u>Favourable</u> finding Class of station FX Assigned frequency 327.0 MHz Bandwidth 3 MHz</p>		
<p>Example for FIXED service with <u>Unfavourable</u> finding Class of station FX Assigned frequency 330.0 MHz Bandwidth 3 MHz</p>		
328.6-335.4	AERONAUTICAL RADIONAVIGATION 5.259	

Coordination examination Coordination procedures

Where appropriate, the notices are also examined with respect to their conformity with the procedures relating to coordination with other administrations applicable to the radiocommunication service and the frequency band concerned (No. 11.32)



Cases of Coordination examination

Case 1 If terrestrial transmitting station operates in frequency bands above 100 MHz shared with space services with equal rights and is located inside the coordination area of a receiving earth station (Nos. 9.16, 9.18)

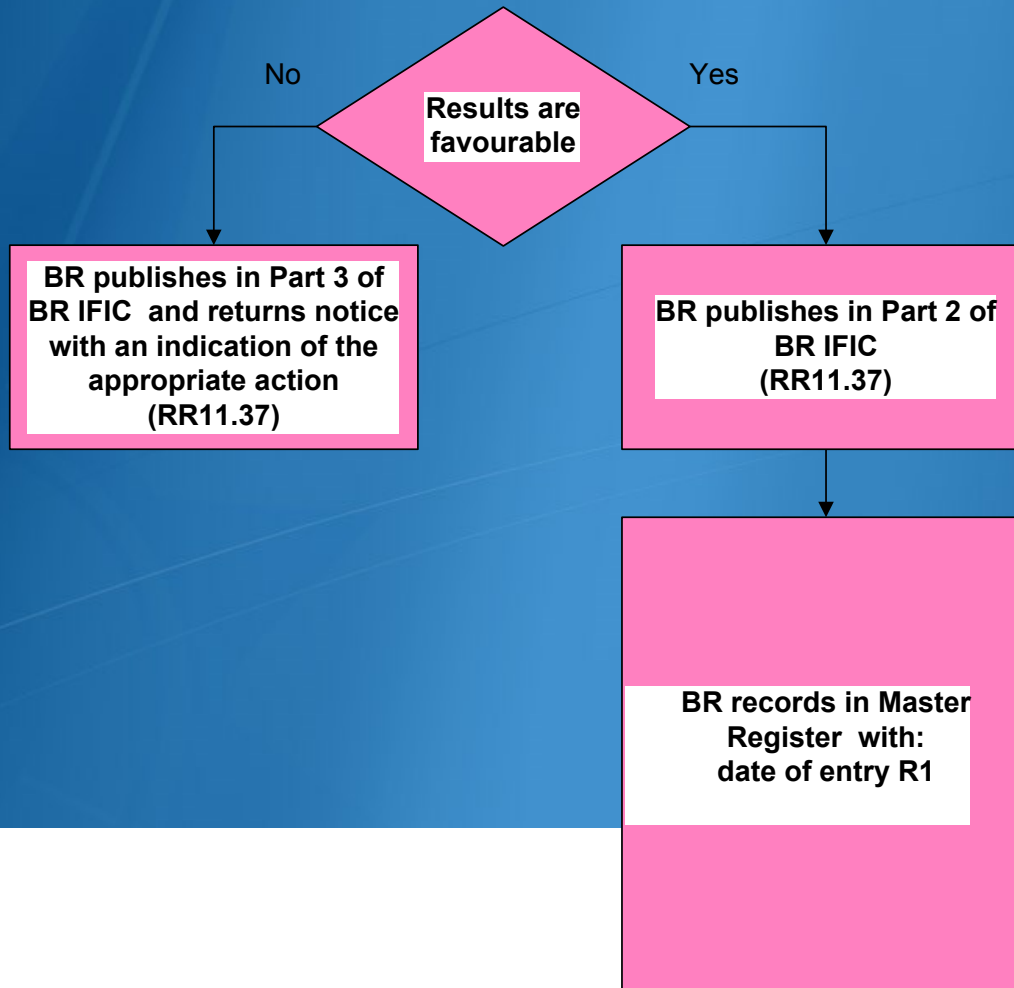
Case 2 If the station operates in a frequency band shared on an equal primary basis with the broadcasting-satellite service (No. 9.19)

Case 3 If a station of a non-planned service operates in the bands and areas covered by a regional agreement (GE85-EMA, GE85-MM-R1, GE89 and GE06)

Coordination examination Regional Plans

- Conformity with respect to regional plans GE85-EMA and GE85-MM-R1
 - GE85-EMA: 283.5 – 315 kHz
 - ✓ Examination of assignments to aeronautical radio-navigation stations (AL) with respect to probability of harmful interference to maritime radionavigation stations (NL)
 - GE85-MM-R1: 1606.5 - 1625 kHz, 1635 - 1800 kHz and 2 045 – 2160 kHz
 - ✓ Examinations of assignments to fixed and mobile service stations against the assignments and notices of the planned services.

Coordination examination Results



Conformity with Regional Plan

- GE85-EMA-

- Conformity of frequency assignments to maritime radionavigation service stations (NL) in the European Maritime Area, submitted by parties to the agreement;
- Compatibility with:
 - recorded assignments to maritime radionavigation stations from parties to the Agreement;
 - notices to maritime radionavigation stations in treatment from parties to the Agreement;
 - assignments to aeronautical radionavigation station from parties to the Agreement.

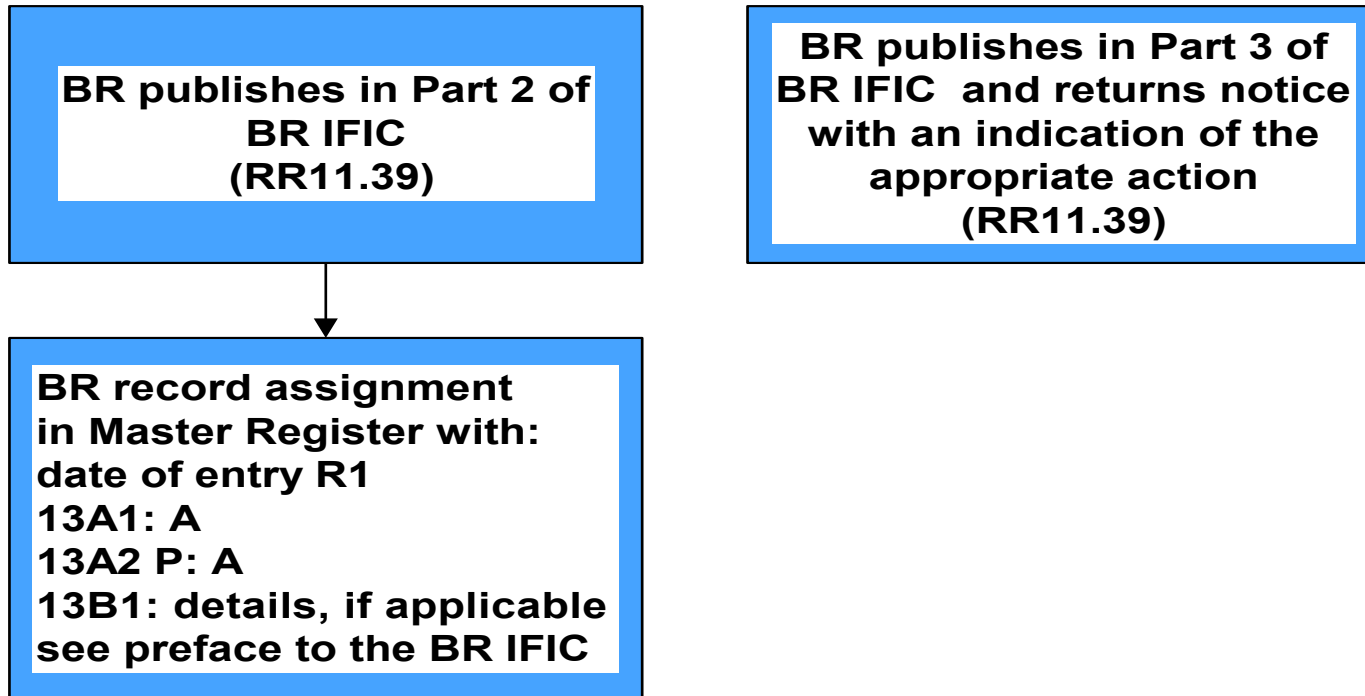
Conformity with Regional Plan - GE85-MM-R1-

415 – 495 kHz, 505 – 526.5 kHz, 1 606.5 – 1625 kHz, 1635 – 1800 kHz, 2045 – 2160 kHz

Conformity of notices for assignments of maritime mobile and aeronautical radionavigation services, submitted by parties to the agreement with the corresponding Plan.

Conformity with Plans –Chart-

GE85-EMA and GE85-MM-R1



Conformity with world-wide Plans

- With respect to Appendixes 25, 26 and 27
 - A notice has to conform with the frequency allotment plan and allotment area
 - ✓ Notified frequency in an allotted channel listed in appropriate plan
 - ✓ Geographical area and Administration correspond to a Plan allotment
 - ✓ Receiving point or receiving area within the allotment area

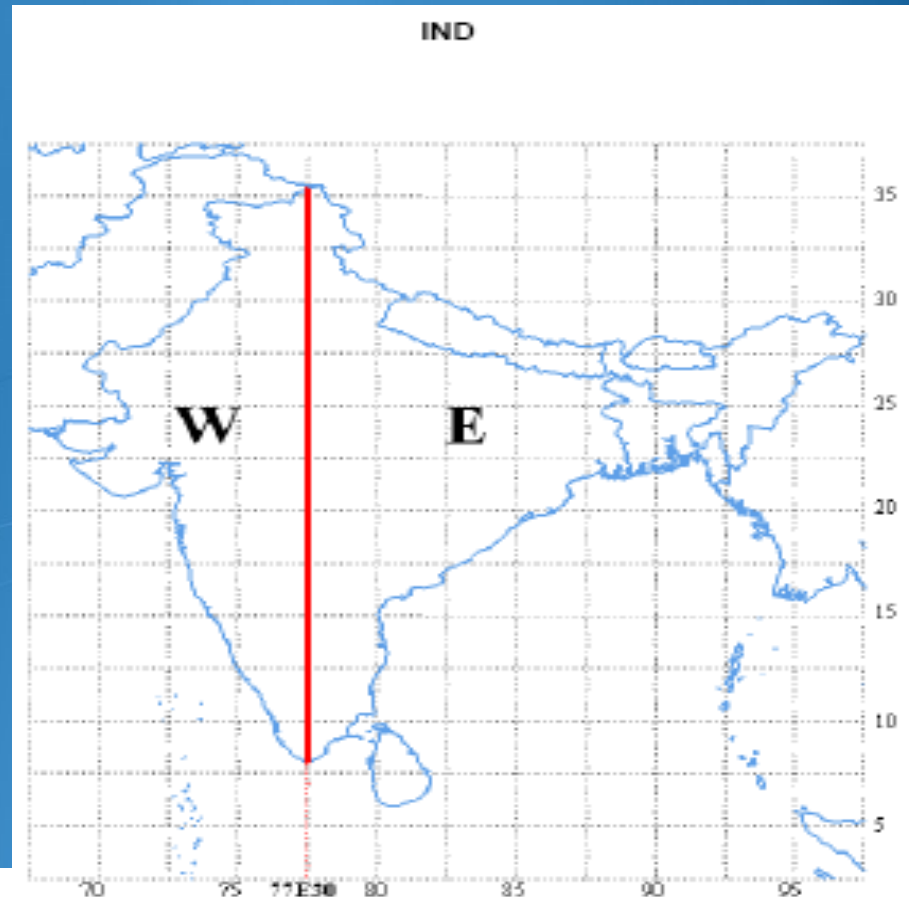
BR examines with respect to Appendix 25 allotments (RR11.34)

BR examines notice with respect to Part III of AP26 (RR11.34)

BR examines with respect to conformity with Appendix 27 Part II (RR11.34)

Conformity with Plans - Appendix 25- Example

4 382.4	ARS	
(4 381)	B	
(409)	CHN	
	CUB	
	DNK	
	GHA	ADD
	I	
	IND W	
	NOR	
	PNG	
	QAT	ADD
	S	
	THA	
	TUR	
	USA CL	
	USA E	
	USA SO	
	USA W	



Map of Allotment Areas IND

Technical examination -Appendix 27-

- In the case of a notice in conformity with the technical principles of Appendix 27, but not in conformity with the Allotment Plan, the Bureau shall examine whether the protection specified in Appendix 27 is afforded to the allotments in the Plan and to assignments already recorded in the Master Register with a favourable finding (No. 11.39A).

Technical examination -Appendix 26-

- *A notice in conformity with the technical principles of Appendix 26, but not in conformity with the Allotment Plan, shall be examined with respect to the allotments in Part III of Appendix 26 (No. 11.39C)*

Thank you for your attention