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Management of frequencies and interference in the aeronautical spectrum: Senegal's experience



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CIVIL AVIATION
ORGANIZATION**



Management of frequencies and interference in the aeronautical spectrum: Senegal's experience



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Regulatory framework



1. Regulatory framework



- ✓ Senegal Civil Aviation Code
- ✓ Senegal Electronic Communications Code
- ✓ Decree on aeronautical frequencies ITU Radio Regulations
- ✓ Senegal Aviation Regulation No. 10 - Aeronautical Telecommunications
- ✓ Senegal Aviation Regulation No. 06 - Aircraft Operation
- ✓ Senegal Aviation Regulation No. 14 - Aerodromes

02

Memorandum of Understanding between ANACIM and ARTP



2. Memorandum of Understanding between ANACIM and the Telecommunications and Postal Regulatory Authority (ARTP)

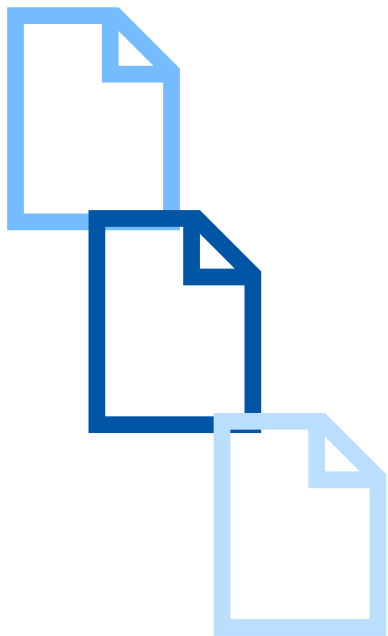
2.1 Purpose and scope

- defines the framework for cooperation and coordination between the National Agency for Civil Aviation and Meteorology (ANACIM) and the Telecommunications and Postal Regulatory Authority (ARTP), in accordance with their sovereign missions.
- relates to the management and protection of the aeronautical radio frequency spectrum used by civil aviation and the respect of aeronautical easements.
- covers in particular the areas of:
 - planning,
 - attribution,
 - the assignment and management of frequencies relating to aeronautical telecommunications,
 - monitoring and compliance with their terms of use,
 - the issuance and renewal of aircraft station licenses as well as the respect of the aeronautical easements of the civil aviation of Senegal.



2. Memorandum of Understanding between ANACIM and the Telecommunications and Postal Regulatory Authority (ARTP)

2.2 Annexes to the Memorandum of Understanding



1. Aircraft Station License (ASL)
2. Procedure for assigning frequencies in the 117.975 MHz to 137.000 MHz band
3. Procedure for assigning frequencies in other bands used by civil aviation and for processing requests for technical advice on the provision of telecommunications services on board aircraft
4. Procedure for protecting frequencies used by civil aviation against harmful interference
5. Aeronautical clearance easements

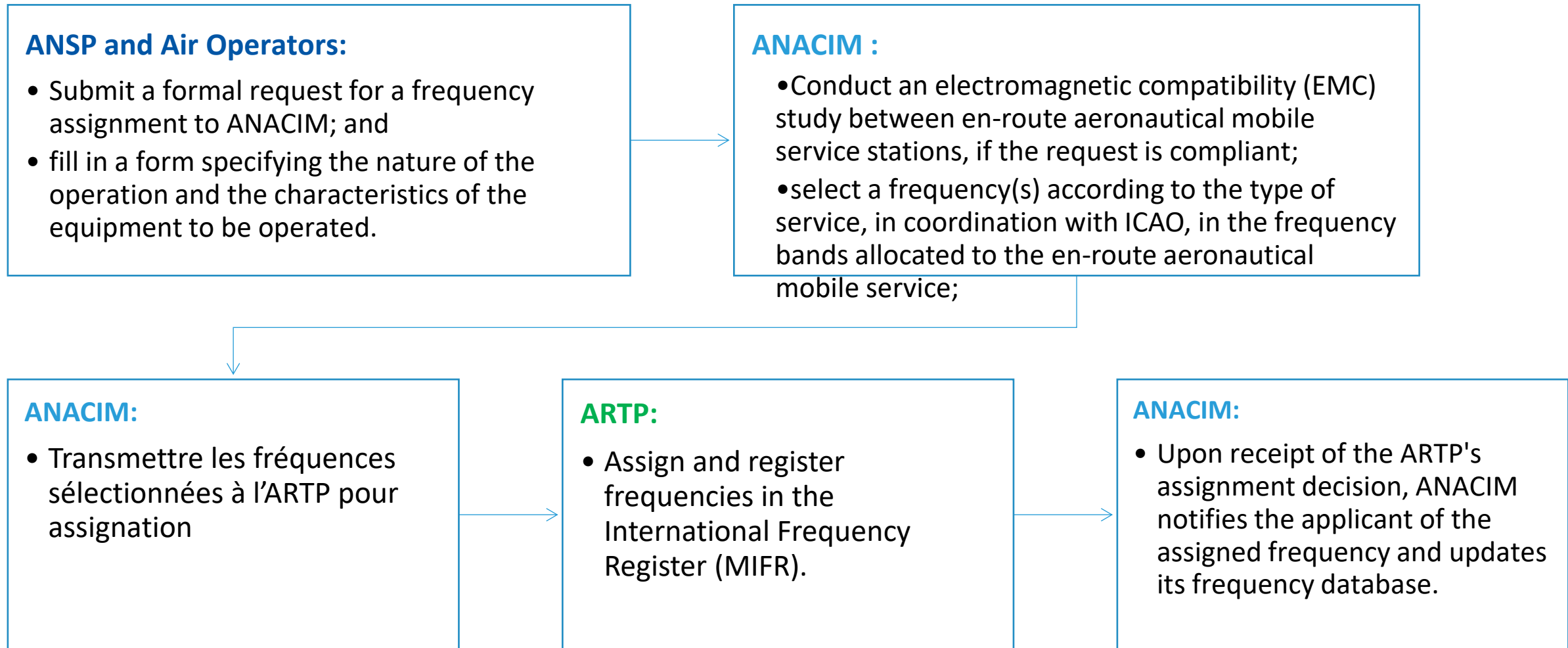
03

Procedure for
the assignment
of aeronautical
frequencies in
the band
117.975 – 137
MHz



3.Procedure for the assignment of aeronautical frequencies in the band 117.975 – 137 MHz

3.1 Role of the Parties in the assignment of radio frequencies



04

Procedure for the Protection of Frequencies Used in Civil Aviation from Harmful Interference



4. Procedure for the Protection of Frequencies Used in Civil Aviation from Harmful Interference

Role of stakeholders

ANSP

- Make a diagnosis to identify the source of interference;
- If the source is internal, resolve the interference and inform ANACIM;
- If the source is external, inform the ARTP with a copy to ANACIM providing as much information as possible on the interference.
- Make a diagnosis to identify the source of interference;
- If the source is internal, resolve the interference and inform ANACIM;

ANACIM

- Faire le suivi de la résolution du brouillage avec l'ARTP

ARTP

- Résoudre le brouillage en coordination avec l'ANSP et transmettre un rapport à l'ANACIM

05

Feedback on cases of harmful interference



5. Feedback on cases of harmful interference

5.1 The case of the Maio TWR (Cabo Verde) and the AIBD/DIASS TWR (118.8 MHz)

General information on jamming

- ✓ Jamming observed after the commissioning of VHF equipment at the new Blaise Diagne airport in Diass
- ✓ Diass and Maio were broadcasting on the same frequency 118.800 MHz and had the same runway orientations (01/19)

Interference processing

- Involvement of ICAO and ARTP
- Virtual meeting between the AACs and the Frequency Regulatory Authorities of the two countries (Senegal and Cabo Verde)

Conclusion

Maio had agreed to change his frequency.



5. Feedback on cases of harmful interference

5.2 The frequency of the military TWR of Dakar-Yoff (118.100 MHz)



General information on jamming

- Interference reported by the air operators Héliconia Senegal and then Arc en ciel
- Very pronounced blow in the helmets of the pilots in standby mode as soon as they are about 3 to 4 NM away in the south-western part of Dakar
- Interference felt on the frequency of the Diass TWR and the APP

Interference processing

- Involvement of the Air Force, ARTP, ANACIM, Héliconia and ASECNA
- Series of measurements carried out in the aeronautical band by the ARTP
- Stopping an FM radio station
- Shutdown of cable distributors' equipment (television channel broadcasters in homes) around threshold 36
- Technical flights on weekdays with Héliconia and ARTP, then Air Force and ARTP

Conclusion

The jamming persisted despite all efforts and disappeared after some time.

5. Feedback on cases of harmful interference

5.3 The frequency of the CCR of the Matam remote station (MAX) (129.500 MHz)



General information on jamming

- ✓ Interference reported by ASECNA caused by an FM station in Matam (GOSM/MAX), 281 NM from Dakar

Interference processing

- ✓ ASECNA refers the matter directly to the ARTP, providing as much information as possible and informs ANACIM

Conclusion

- ✓ After 5 days, the jamming disappeared following the interventions of the ARTP.



06

Conclusion



6. Conclusion

- ❑ The management of the aeronautical frequency spectrum is governed by internal civil aviation procedures and the ANACIM/ARTP Protocol.
- ❑ ANSPs can contact the ARTP directly in the event of interference on aeronautical frequencies.
- ❑ Ten (10) cases of harmful interference were resolved between 2017 and 2025
- ❑ The good cooperation between the ARTP, ANACIM and the operators allows for a rapid and satisfactory resolution of cases of harmful interference.

Thank You

