POLICY AND REGULATION INITIATIVE FOR DIGITAL AFRICA (PRIDA)

TRAINING REPORT ON AERONAUTICAL AND MARITIME COMMUNICATION SERVICES FOR FRENCH SPEAKING COUNTRIES

DAKAR, SENEGAL

23 TO 25 MAY 2023

Contents

1.0 Background

The "Policy and Regulation Initiative for Digital Africa" (PRIDA) is a joint initiative of the African Union (AU), the European Union (EU) and the International Telecommunication Union (ITU), that enables the African continent to reap the benefits of digitalization by addressing various dimensions of broadband demand and supply in Africa and building the capacities of AU Member States in the Internet Governance space. It is supported by the EU-funded Pan African Programme.

The ultimate goal of PRIDA is to promote universally accessible and affordable broadband across the continent in order to unlock the future benefits of internet-based services.

PRIDA has three tracks:

Track 1- ITU is responsible for ensuring efficient and harmonized spectrum utilization across the continent.

Track 2- The African Union Commission is responsible for the harmonization of measurable ICT/Telecommunications policy, legal and regulatory frameworks.

Track 3- For enhancing African stakeholders' active participation in the global Internet Governance debate.

PRIDA Track 1, is the ITU implemented part of PRIDA, which aims to promote harmonized spectrum utilization and regulations across Africa.

Radio frequency spectrum is a finite natural resource with finite capacity and increasing demand. Future spectrum demand predictions predict a continuing rate of increase for all users and radio services and infrastructure that use radio waves, such as radio, television, research, communications, navigation, surveillance, internet, road, maritime, and air transport, so efficient management is required to avoid interference between diverse users at the national, regional, and international levels.

It is in this context that the PRIDA Project has initiated training on aeronautical and maritime communications services for staff of telecommunications regulatory authorities and radio frequency spectrum management.

This document serves as a report on the session presented by the International Civil Aviation Organisation (ICAO).

2.0 Venue and Date

The training was held at the Hôtel Terrou-Bi Dakar, Senegal from 23rd – 25th May 2023.

3.0 Participants profile

The training participants included staff members of National Telecommunications Regulatory Authorities from the following countries, Burundi, Central Africa Republic, Chad, Comoros, Congo, Ivory Coast, Gabon, Guinea-Bissau, Morocco, Democratic Republic of Congo, Senegal, Togo and Tunisia

4.0 Resource persons

The team which delivered sessions during the training comprised of experts from the International Telecom Union (ITU), International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) and expert Consultants.

5.0 Training Objectives.

The objectives of the three-day training sessions were to strengthen the participants' human capacities and skills in the management and oversight of frequencies in the maritime and aviation sectors.

6.0 Proceedings

The three (3) days training focused on spectrum monitoring, spectrum management, maritime communication, and aeronautical communication. The session on aeronautical communications by ICAO covered the following topics outlined below.

6.1 Overview of aeronautical spectrum usage

- Aeronautical Frequency Spectrum Management
- Communications, Navigation and Surveillance Systems – (Pre-requisite for Aircraft Operation)
- Performance of Air Traffic Management
- The ITU WRC-23 agenda (ICAO)

6.2 Coordination of aeronautical frequencies

- status of ITU radio regulations and ICAO SARPS
- Relationship between ITU radio regulations
- and other material and ICAO SARPS
- Frequency coordination and registration
- ICAO doc 9718 handbook on radio frequency spectrum requirements for civil aviation
- ICAO coordination and assignment procedures for VHF AERONAUTICAL MOBILE (ROUTE) SERVICES (AM(R)S) (117.975-137 MHz)
- Frequency assignment planning

6.3 Future Aeronautical Communication and Navigation Technologies

- Aeronautical Frequency Spectrum Management
- Global Aeronautical Distress & Safety System (GADSS)
- Space Based VHF
- Command and Control (C2) Link for Remotely piloted aircraft systems (RPAS)
- L-Band Digital Aeronautical Communications System (LDACS)
- Dual-Frequency, Multi-Constellation (DFMC) Global Navigation Satellite System (GNSS)
- New 1090 MHz Extended Squitter ADS-B Version 3 Format

- Detect and Avoid (DAA) Systems and Airborne Collision Avoidance System-unmanned aircraft (ACAS-Xu)
- Enhanced flight Vision System (EVS) applications

7.0 Conclusion

The training gave participants the opportunity to understand aeronautical frequency spectrum management, coordination of aeronautical frequencies, and future aeronautical communication and Navigation technologies that will have to rely on a positive decision by a future ITU World Radiocommunication Conference. Additionally, participants were equipped with the knowledge and capabilities required to effectively manage and regulate the communication services in these critical sectors.

Appendix 1 – Training Agenda

Dakar PRIDA Workshop 23-25 May 2023			
Monitoring training 23 May 2023			
Time	**Session**	**Speaker**	**Duration**
0900 - 0930	Opening - Host	ARTP	30 mins
0930 - 0950	ITU BR monitoring programmes	BR	20 mins
0950 - 1010	ITU-R studies on spectrum monitoring	BR	20 mins
1010 - 1030	▪ Spectrum monitoring definitions ▪ Spectrum monitoring tasks	Consultant	20 mins
1030 - 1050	**Coffee break**		**20 mins**
1050 - 1120	▪ Types of monitoring stations ▪ Types of antennas	Consultant	30 mins
1120 - 1130	Questions & answers		10 mins
1130 - 1200	▪ Types of measurements (direction finding methods, RF level, spectrum occupancy, etc.)	Consultant	30 mins
1200 - 1210	Questions & answers		10 mins
1210 - 1230	Use of drones for monitoring	Consultant	20 mins
1230 - 1400	**Lunch break**		**90 mins**
1400 - 1420	Integration of the monitoring in the spectrum management system	Consultant	20 mins
1420 - 1430	Questions & answers		10 mins
1430 - 1450	▪ Automation of the monitoring ▪ Remote monitoring	Consultant	20 mins
1450 - 1500	Questions & answers	Consultant	10 mins
1500 - 1520	Harmful interference	Consultant	20 mins
1520 - 1530	Questions & answers		10 mins
1530 - 1600	**Coffee break**		**30 mins**
1600 - 1730	Practical exercises using a mobile monitoring station	ARTP	90 mins

Dakar PRIDA Workshop 23-25 May 2023			
Maritime training 24 May 2023			
Time	**Session**	**Speaker**	**Duration**
0930 - 1000	ITU Maritime Publications and MARS	BR	30 mins
1000 - 1020	Notifications of Ship and Coast Stations	BR	20 mins
1020 - 1050	Overview of the SOLAS Convention, including recent amendments to chapter IV (Radiocommunications)	IMO	30 mins
1050 - 1100	Questions & answers		10 mins
1100 - 1120	**Coffee break**		**20 mins**
1120 - 1150	International obligations for countries to implement search and rescue services (SAR)	Consultant	30 mins
1150 - 1220	Training and certification of seafarers and coast station personnel	IMO	30 mins
1220 - 1230	Questions & answers		10 mins
1230 - 1400	**Lunch break**		**90 mins**
1400 - 1430	▪ Designation of SAR regions and coordination with neighbor countries ▪ Description of Rescue Coordination Centres	Consultant	30 mins
1430 - 1500	Overview of the IMO global integrated shipping information system (GISIS), including the global maritime distress and safety system (GMDSS) Master Plan module	IMO	30 mins
1500 - 1510	Questions & answers		10 mins
1510 - 1530	**Coffee break**		**20 mins**
1530 - 1600	Development of a SAR National Plan	Consultant	30 mins
1600 - 1630	Example of international SAR cooperation, national coordination and resources contributing to SAR missions	Consultant	30 mins
1630 - 1700	General discussions		30 mins
1700 – 1800 or 1700 - 1900	Practical simulation of the design of a national GMDSS coast station network and SAR system or Visit of Coast Station	Consultant ARTP	60 mins or 120 mins

Dakar PRIDA Workshop 23-25 May 2023			
Aeronautical training 25 May 2023			
Time	**Session**	**Speaker**	**Duration**
0930 - 0945	Aeronautical frequency bands	BR	15 mins
0945 - 1000	ITU-R Recommendations and Reports	BR	15 mins
1000 - 1020	Overview of aeronautical spectrum usage	ICAO	20 mins
1020 - 1040	Coordination of aeronautical frequencies	ICAO	20 mins
–1040 -1050	**Coffee break**		10 mins
1050 - 1105	Future Aeronautical communication and navigation technologies	ICAO	15 mins
1105 - 1130	Measures to prevent interference to radio altimeters from IMT/5G	Consultant	25 mins
–1130-1430	**Visit Ship Station**		**180 mins**
1430 - 1500	**Refreshment**		**30 mins**
1500 - 1530	Handling interference to aircraft GNSS receivers	Consultant	30 mins
1530 - 1600	Compatibility between FM broadcasting and aeronautical radionavigation systems in VHF band	Consultant	30 mins
1600 - 1630	Usage of FSS VSAT for safe operation of aircraft and distribution of meteorological information in Africa	Consultant	30 mins
1630 - 1640	Questions & answers		10 mins
1640 - 1700	**Coffee break**		**20 mins**
1700 - 1730	Interference from Non-Aeronautical Sources (e.g., from LED systems, from IMT to MSS aircraft receivers in L-band)	Consultant	30 mins
1730 - 1750	Current and future airport communication systems	Consultant	20 mins
1750 - 1800	Questions & answers		10 mins