



ICAO

*International Civil Aviation Organization***Twenty Ninth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/29)
of APANPIRG**

Bangkok, Thailand, 16-20 June 2025

Agenda Item 14: Innovation and New Technologies**AIRNAV MAINTENANCE FACILITY**
(Presented by Indonesia)**SUMMARY**

This paper presents the Implementation of the Airnav Maintenance Facility, that established to enhance the readiness and reliability of air navigation facilities in Indonesia by providing services in repair, innovation, and development of Communication, Navigation, Surveillance (CNS) equipment.

1. INTRODUCTION

1.1 Airnav Indonesia, as the sole Air Navigation Service Provider (ANSP) in Indonesia plays a critical role in ensuring the safety, efficiency, and reliability of air traffic operations in the vast and complex airspace within the country in accordance with international standards supported by various Communication, Navigation, Surveillance (CNS) equipment.

1.2 To further enhance service reliability and operational efficiency, particularly in maintaining critical CNS infrastructure across the country, AirNav Indonesia established the AirNav Maintenance Facility (AMF) as a strategic initiative.

1.3 This paper shares AirNav Indonesia's experience in establishing the AirNav Maintenance Facility (AMF) as a commitment of Indonesia to improve efficiency and resilience in air navigation services.

2. DISCUSSION**2.1 Establishment of the AirNav Maintenance Facility**

The AirNav Maintenance Facility (AMF), leveraging its full potential, has successfully optimized existing resources to carry out equipment module repairs across AirNav Indonesia's operational areas. To enhance flexibility in managing business processes, AMF, which was previously part of AirNav Indonesia's headquarters structure, was established as a branch office in 2025.

2.2 The Purpose of Airnav Maintenance Facility

The AirNav Maintenance Facility provides repair services of equipment modules of communication, navigation, surveillance, automation, and electrical facilities throughout Indonesia.

2.3 Services of the Airnav Maintenance Facility

The AirNav Maintenance Facility (AMF) provides the following services:

Repair Services	Provides repair services for damaged/failed equipment modules.
Logistics Services	Provides spare parts for CNS & electrical equipment throughout the Airnav Indonesia working area, both in the form of new spare parts and reuse of repaired modules.
Innovation & Development	Provides the innovation and development of equipment in the Airnav Indonesia working area, especially for the equipment that experiences problems such as obsolescence of spare parts.

2.4 Personnel of the AirNav Maintenance Facility

The AirNav Maintenance Facility is staffed with 11 licensed and rated personnel specializing in Communication, Navigation, Surveillance, and Electrical, each in accordance with their respective areas of expertise.

2.5 Organizational Structure – the AirNav Maintenance Facility

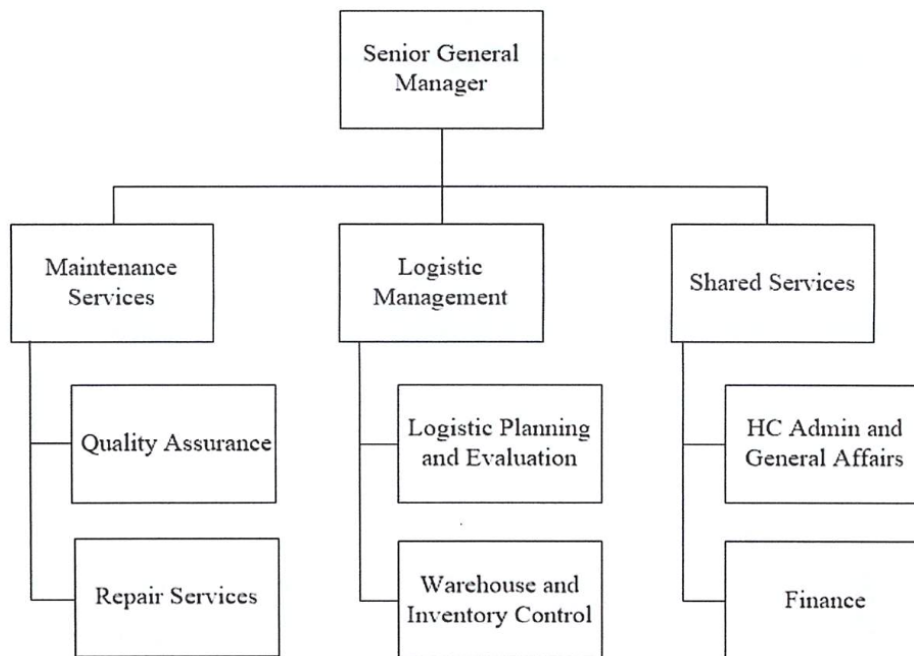


Figure 1 Organizational Structure of AMF

2.5.1 In the structure of the AirNav maintenance facility as shown in **Figure 1**, there are managerial functions and technical functions.

2.5.1.1 The managerial functions consist of the following:

- a. **Senior General Manager.** Responsible for the planning and implementation control within the AirNav Maintenance Facility area, which includes repair of units/sections/facility modules, spare parts management, financial, personnel, and general administration management in the AirNav Maintenance Facility working area.

b. Senior Manager of Maintenance Services. Responsible for execution of equipment module repairs, control of repaired facility modules, monitoring qualifications and certification of repair personnel and planning for work equipment and supporting facilities needs including mock-ups and toolkits. Senior Manager of Maintenance Services assisted by Manager of Quality Assurance and Manager of Repair Services.

c. Senior Manager of Logistic Management. Responsible for the preparation, implementation, and evaluation of programs in the following areas :

- **Planning for spare part availability, warehouse and inventory control, distribution of modules and equipment spare parts; and**

- Management of technical helpdesk monitoring.

Senior Manager of logistic Management assisted by Manager of Logistic Planning and Evaluation, and Manager of Warehouse and Inventory Control.

d. Senior Manager of Shared Services. Responsible for the preparation, implementation, and evaluation of programs in the following areas:

- Execution of management in the areas of human resources, general administration, business administration and archiving, office and employee facilities, maintenance of office buildings and environmental cleanliness, office aesthetics, business travel, public relations, procurement of goods and services in the work area; and

- Implementation of work plan and budget preparation, treasury management, asset ownership management including land and buildings within the work area.

Senior Manager of Shared Services Assisted by Manager of HC Admin and General Affairs and Manager of Finance.

2.5.1.2 The technical functions consist of the following:

a. Certification And Inspection Senior Specialist. Responsible for Develop and implement inspection protocols to ensure compliance with industry standards and regulatory requirements, Conduct audits and inspections of products, components, or systems to verify conformity, Manage certification processes for equipment, materials, or procedures, Prepare and maintain detailed inspection and certification documentation and Interface with regulatory bodies and third-party certifiers to ensure accreditation requirements are met.

b. Quality Assurance. Responsible for Provide training and technical support on inspection and certification standards, Design and maintain Quality Management Systems (QMS) in compliance with relevant standards, Perform internal audits and facilitate external audits, Analyze quality data to identify trends, root causes, and areas for improvement, Develop and enforce quality control procedures across production and operational processes, Collaborate with cross-functional teams to drive continuous improvement initiatives and

Ensure product and process compliance with customer requirements and legal standards.

c. Repair Specialist. Responsible for Diagnose faults and perform repairs on mechanical, electrical, or electronic systems, interpret technical manuals, schematics, and blueprints to execute accurate repairs, use specialized tools and testing equipment for troubleshooting and repairs, Maintain detailed service logs and repair records, Ensure all repair activities meet safety and technical standards and Provide feedback to engineering teams on recurring issues or design improvements.

2.6 Implementation

2.6.1 Business Process

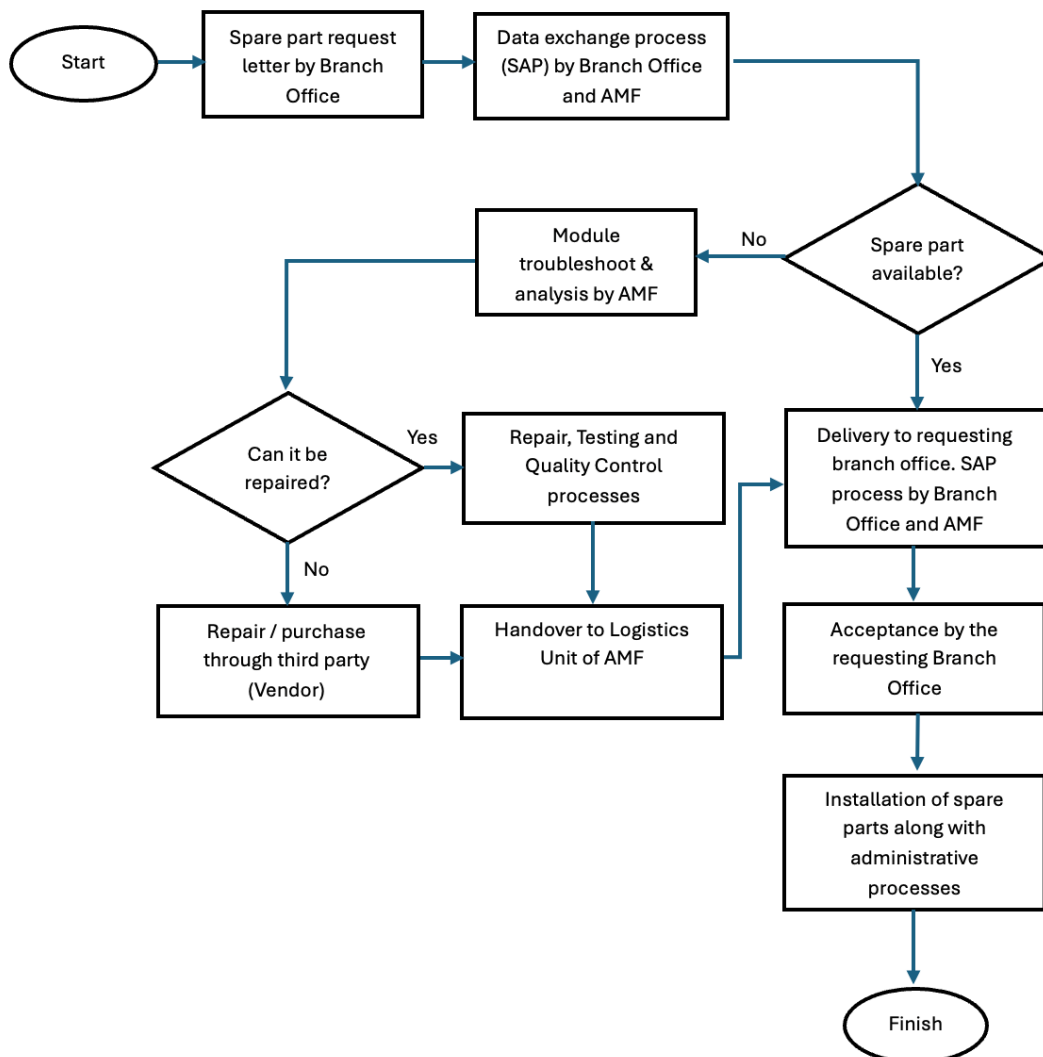


Figure 2 Flow Chart of AMF Business Process

As shown in **Figure 2**, Airnav Indonesia’s branch office submits a repair request for the failed module to AMF, along with the required administrative documents (failure chronology and

attempted repairs by local technicians, and logistics system documents). If a spare part module is available, AMF will dispatch it from the spare parts depot to the requesting branch. If not available, the module will be repaired at AMF.

Upon receiving the module, AMF issues a work order to the Repair Specialist. The repair process includes analysis, component replacement, and alignment. The repaired module undergoes testing and Quality Control (QC). The repaired module is handed over to the logistics unit, then delivered to the requesting branch.

2.6.2 Achievement

Since its founding until in the end of May, AMF has repaired 38 modules, comprising various types of CNS & Electrical equipment as shown in **Figure 3** down below.

These achievements reflect:

- a. Increased maintenance process efficiency, with shorter turnaround times per module compared to the previous year.
- b. Implementation of an inventory and quality control system based on digital technology that enhances transparency and accuracy.
- c. Active collaboration with third parties, including vocational institutions and certified technicians, in carrying out repairs and equipment testing.

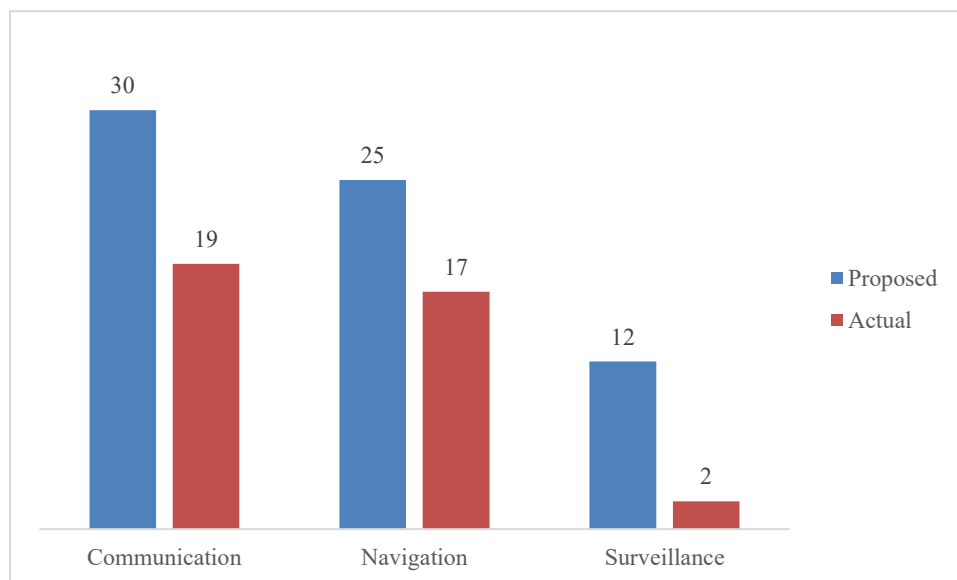


Figure 3 Comparison of the Number of Modules: Proposed vs. Repaired

2.6.3 Analysis and Evaluation

In terms of **quantity**, the achievement of 38 repaired modules indicate a positive trend toward meeting AMF's annual target.

In the terms of **quality**, all repaired modules:

- a. Have passed operational feasibility testing via the internal testbed system.
- b. Have been returned to operational units at various strategic AirNav Indonesia locations.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matter as appropriate.
