INTERNATIONAL CIVIL AVIATION ORGANIZATION



Manual of Procedures for Assessing and Monitoring the Implementation of the Basic Building Blocks (BBB) in the CAR/SAM Region
General Provisions
MET Part 1

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ICAO



❑ Vision

A safe, secure and sustainable international civil aviation system that connects the world for the benefit of all nations and peoples.

❑ Mission

To lead international civil aviation as a key driver of social and economic development, while enhancing safety, security, economic development and environmental sustainability for a growing air transport system.

❑ Strategics Objectives



EVERY FLIGHT IS SAFE AND SECURE

EVERY FLIGHT IS SAFE AND SECURE



AVIATION IS ENVIRONMENTALLY SUSTAINABLE

AVIATION IS ENVIRONMENTALLY SUSTAINABLE



AVIATION DELIVERS SEAMLESS, ACCESSIBLE, AND RELIABLE MOBILITY FOR ALL

AVIATION PROVIDES SEAMLESS, ACCESSIBLE, AND RELIABLE MOBILITY FOR ALL.



NO COUNTRY LEFT BEHIND

NO COUNTRY IS LEFT BEHIND



THE INTERNATIONAL CIVIL AVIATION CONVENTION AND OTHER TREATIES, LAWS AND REGULATIONS ADDRESS ALL CHALLENGES

THE CONVENTION ON INTERNATIONAL CIVIL AVIATION AND OTHER TREATIES, LAWS AND REGULATIONS ADDRESS ALL CHALLENGES



THE ECONOMIC DEVELOPMENT OF AIR TRANSPORT ASSURES THE DELIVERY OF ECONOMIC PROSPERITY AND SOCIETAL WELL-BEING FOR ALL

THE ECONOMIC DEVELOPMENT OF AIR TRANSPORT ENSURES THE GENERATION OF ECONOMIC PROSPERITY AND SOCIAL WELL-BEING FOR ALL

❑ Three Essential Aspirations

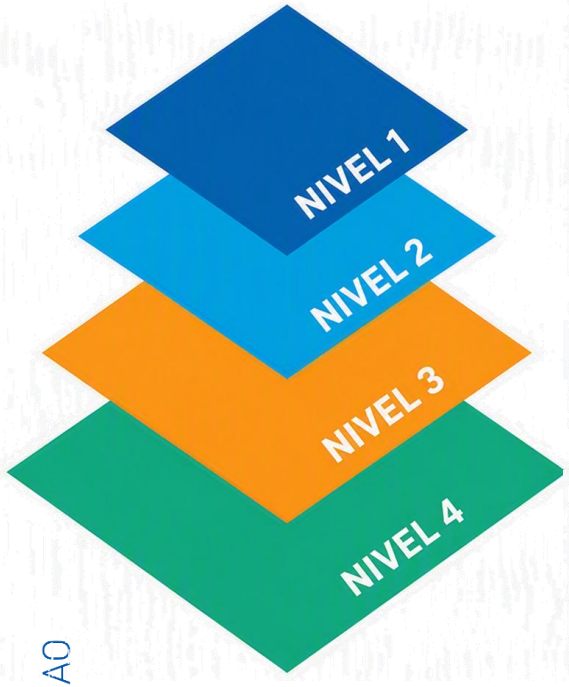
- ✓ Net-Zero Carbon Emissions
- ✓ Connected Transport System
- ✓ Zero Fatalities

❑ High-Priority Enablers

- ✓ Continuous Organisational Improvement of ICAO
- ✓ Gender Equality and Attraction of New Talent
- ✓ Innovation
- ✓ Partnerships, Resource Mobilisation and Financial Sustainability

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Global
Air Navigation Plan - GANP



ESTRATÉGICO GLOBAL

TÉCNICO GLOBAL

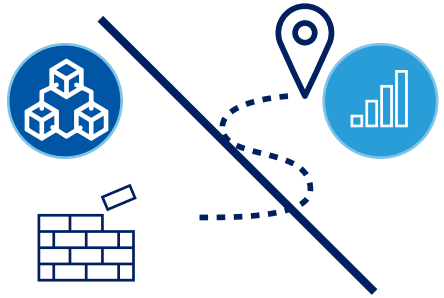
REGIONAL

NACIONAL

Basic Building Blocks (BBB).

Aviation System Block Upgrades (ASBU).

Air Navigation System Performance Ambitions (AN-SPA).



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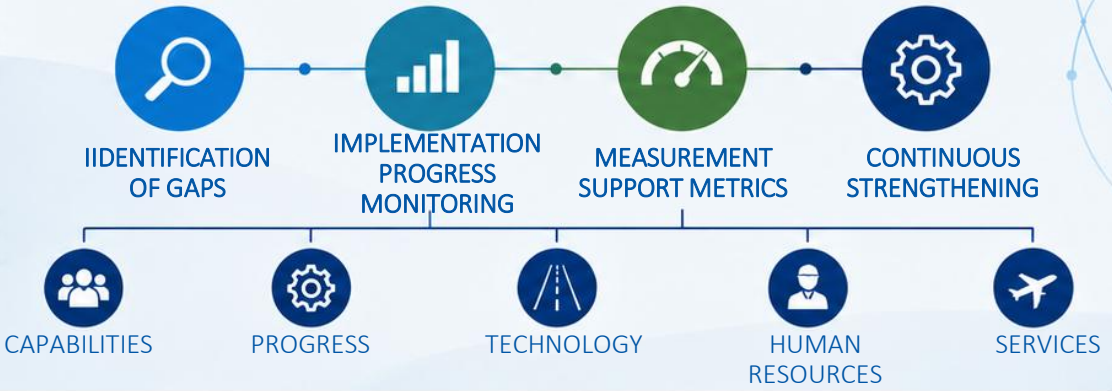
Manual for the Assessment and Monitoring of BBB Implementation in the CAR/SAM Regions



This Manual establishes the procedures for **the assessment and monitoring of the implementation of the BBBs in the ICAO CAR (Caribbean) and SAM (South American) Regions**, providing a **common regional methodological framework** to facilitate the identification of gaps, monitoring of implementation progress, measurement of supporting metrics, and continuous strengthening of the capabilities, processes, infrastructure, human resources and services that support international civil aviation.

The Manual contributes to the **harmonised implementation of the BBBs** by States and supports the vision of the **progressive evolution of their capabilities** in accordance with the objectives established in the GANP and the various Aviation System Block Upgrade (ASBU) threads.





Safe, orderly, efficient and interoperable development of international civil aviation.

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Attachment C. Air Traffic Management - ATM

Deputy D. Communications, Navigation and Surveillance - CNS

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Attachment F. Search and Rescue Service - SAR



Annual Evaluation and Monitoring Implementation BBB CAR/SAM Regions

Annual Evaluation and Monitoring Implementation BBB CAR/SAM Regions

OBJECTIVE OF THE MANUAL

Provide a structured methodology to verify the level of implementation of the Basic Building Blocks (BBBs), which allows identifying gaps, monitoring implementation progress, measuring supporting metrics, and continuously strengthening the capabilities, processes, infrastructure, human resources, and services that support civil aviation, as well as systematically monitoring their evolution, in accordance with the Global Air Navigation Plan (GANP) and the vision of the Aviation System Block Upgrades (ASBU).

SCOPE OF THE MANUAL

Establish the procedures, criteria, and mechanisms necessary for the execution of activities for the evaluation and supervision of the Basic Building Blocks (BBBs), including planning, evidence collection, documentary and operational verification, determination of the level of implementation, performance measurement, management of findings, and follow-up of corrective actions. Its application includes face-to-face, remote, and hybrid modalities, guaranteeing the traceability, consistency, and transparency of the results obtained.

This release leaves the document ready to cover MET, AIM, ATM, SAR, CNS, and AOP, without the need to modify these sections again when the manual fully evolves into the BBB Framework.

Annual Evaluation and Monitoring Implementation BBB CAR/SAM Regions



Principles

PRINCIPLES OF THE PRESCRIPTION-BASED APPROACH
PRINCIPLE OF THE RISK-BASED APPROACH
PRINCIPLE OF THE USE OF OBJECTIVE EVIDENCE
PRINCIPLE OF CONTINUOUS IMPROVEMENT
PRINCIPLE OF PROPORTIONALITY
PRINCIPLE OF TRACEABILITY

Evaluation methodology

EVALUATION PLANNING
DOCUMENT REVIEW
OPERATIONAL VERIFICATION
DETERMINING THE LEVEL OF IMPLEMENTATION

RECORD AND DOCUMENT MANAGEMENT OF THE EVALUATION RESULTS

Monitoring methodology

EVALUATION PLANNING
DOCUMENT REVIEW
OPERATIONAL VERIFICATION
RECALCULATION DETERMINATION OF THE LEVEL OF IMPLEMENTATION

RECORD AND DOCUMENT MANAGEMENT OF THE EVALUATION RESULTS

Finding Management

Findings management is the set of activities aimed at identifying, documenting, communicating, analyzing, correcting and verifying deviations, deficiencies or gaps evidenced during the processes of evaluation and supervision of the Basic Building Blocks Elemens.

Supporting metrics for BBBs

LINE OF ESSENTIALS

The first line corresponds to the **Essential Elements**, which represent the minimum capacities necessary to ensure the safe, regular and efficient provision of the services and capacities defined within the BBB framework.

These indicators make it possible to verify the existence, availability and implementation of the services, processes, resources, human and technological components, infrastructure, systems and basic mechanisms required by ICAO for each functional area.

Its primary purpose is to determine whether critical capabilities are deployed and operational in accordance with applicable requirements.

Supporting metrics for BBBs

QUALITY AND CONTINUOUS IMPROVEMENT ELEMENTS LINE

The second line corresponds to the **Elements of Quality and Continuous Improvement**, aimed at evaluating the mechanisms that ensure the sustainability, reliability and evolution of the implemented capacities.

This line includes aspects related to:

- Quality management systems.
- Performance management.
- Risk management.
- Competence and training of personnel.
- Management of information providers.
- Document management.
- Contingency plans.
- Principles relating to human factors.
- Continuous improvement processes.

Supporting metrics for BBBs

LINE OF TECHNOLOGICAL AND INTEROPERABLE ELEMENTS

The third line corresponds to the **Technological and Interoperable Elements**, which reflect the evolution of capabilities towards data-based environments, automation, digital exchange of information, interoperability and system integration.

This line incorporates capabilities related to:

- Digital information management.
- Automated data exchange.
- Digital services.
- Integration with collaborative platforms.
- Interoperability between systems.
- Process automation.
- Data-driven services.

Supporting metrics for BBBs

When evaluating the **Essential Elements**, the fundamental question that the evaluator must ask himself is:

Does the capacity or service exist and is it available for operational use?

In the case of the **Quality and Continuous Improvement Elements**, the evaluation must be aimed at determining:

If the capacity is adequately managed, controlled and sustained through formal processes that guarantee its continuous operation and progressive improvement

Finally, for **the Technological and Interoperable Elements**, the evaluation should focus on establishing:

Whether the capacity has the necessary technological means, information exchange and interoperability mechanisms to evolve in accordance with the modernisation objectives defined by ICAO, the GANP and the applicable ASBU threads.

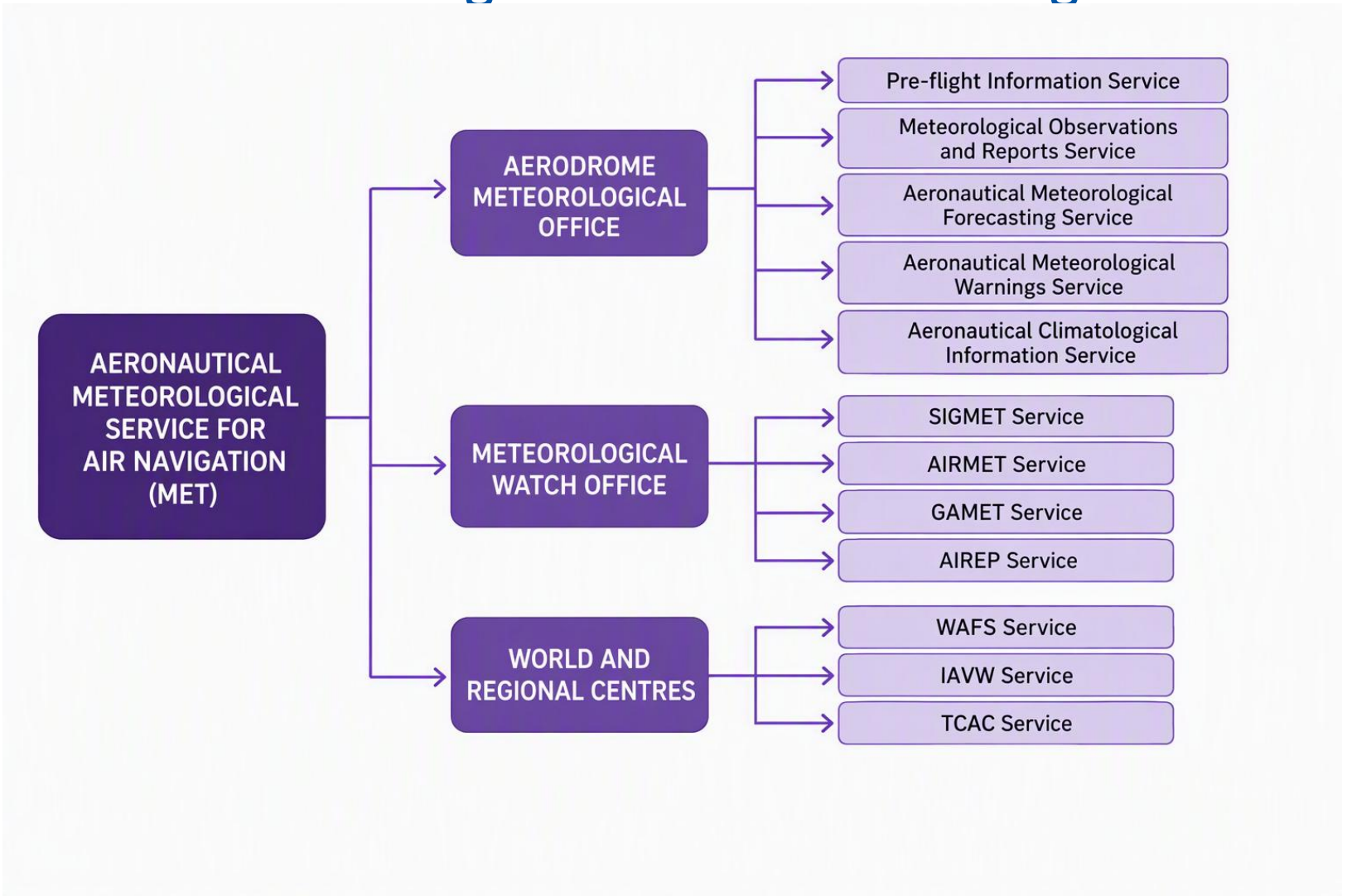
"Thanks to ICAO, the sky of the world is a trusted shared system, standards and responsibility, in which constant training is a fundamental pillar"

Thank You



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Basic Modules and Elements of the Meteorological Service for Air Navigation

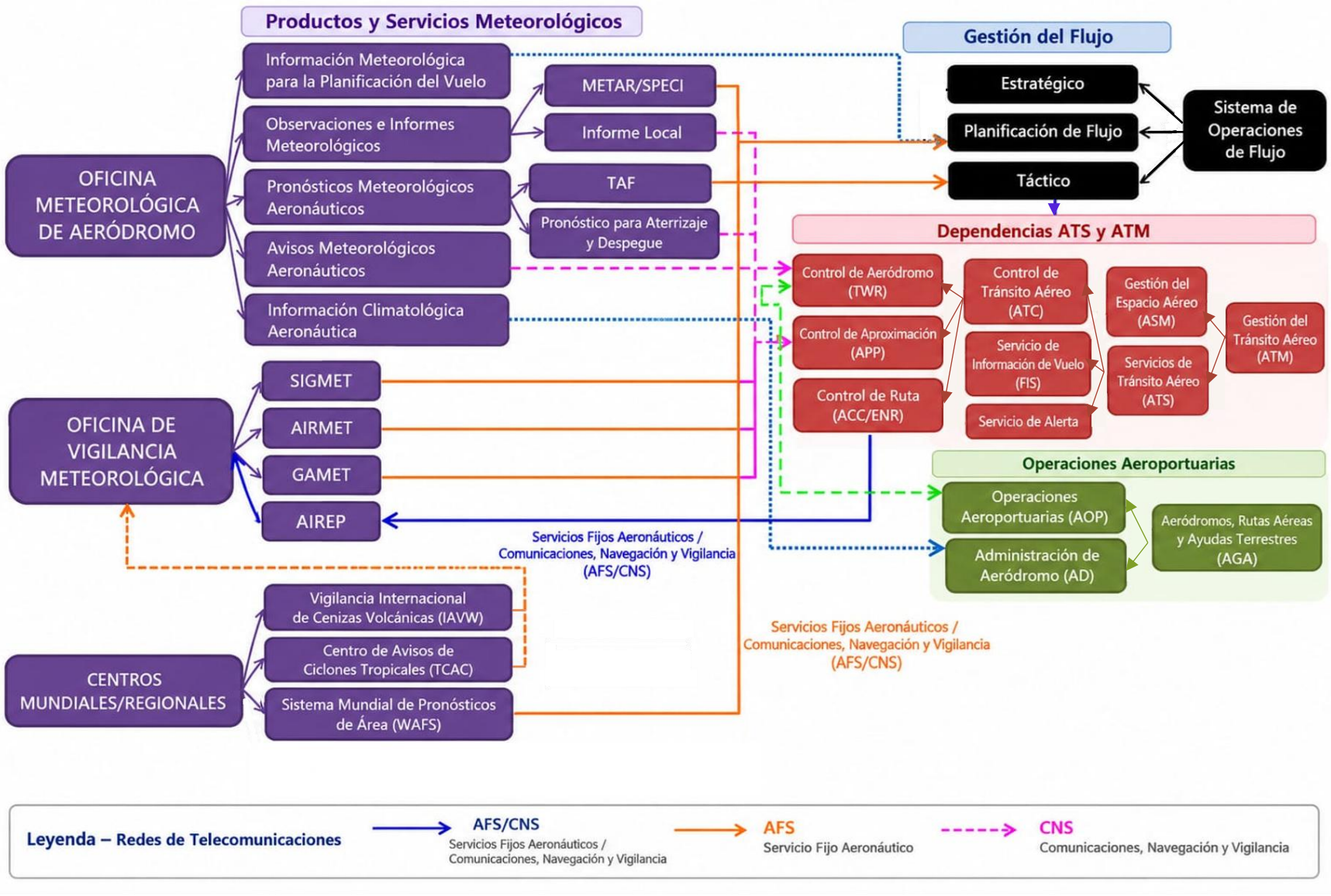


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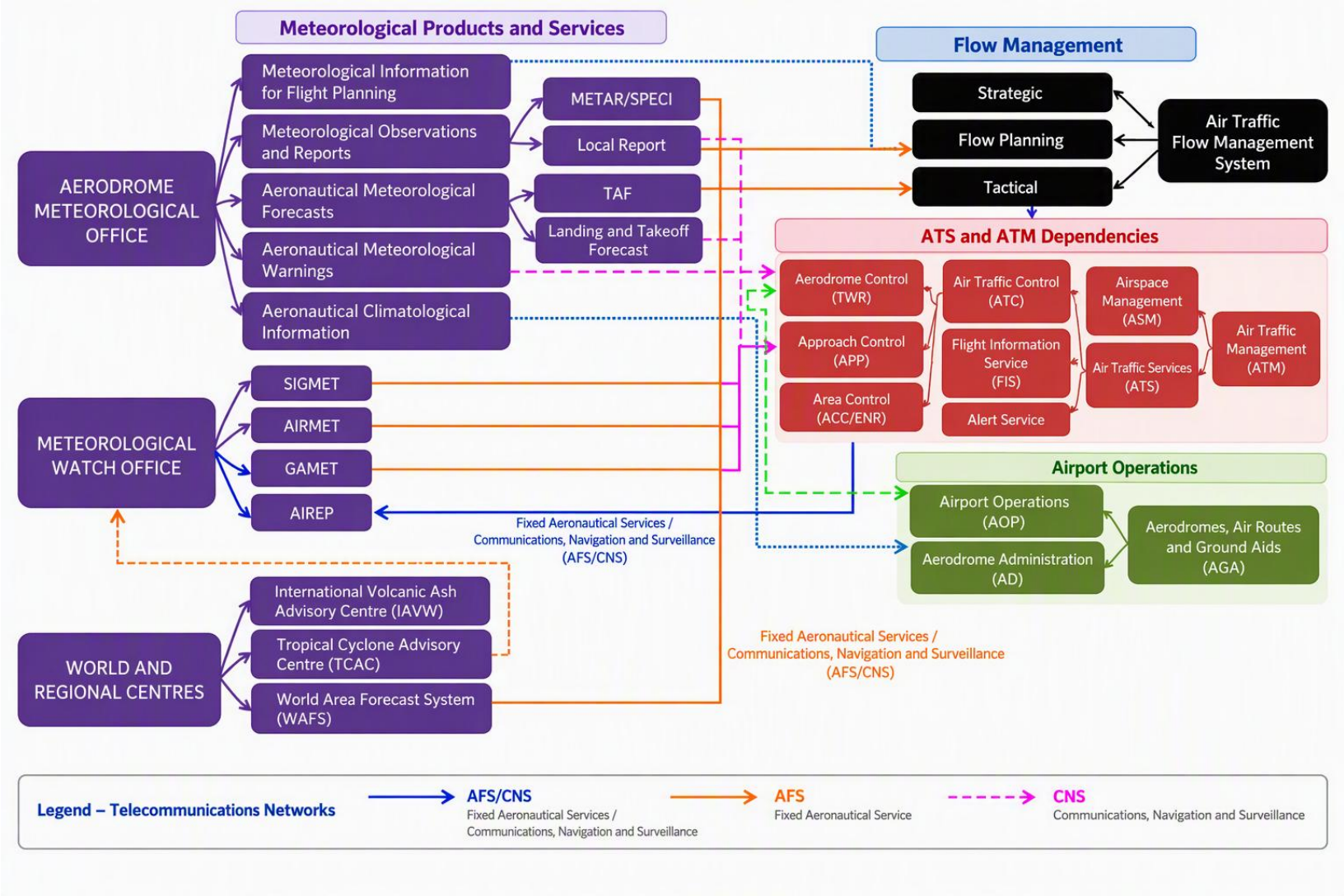
Basic Modules and Elements of the Meteorological Service for Air Navigation

BASIC ELEMENTS	MAIN PURPOSE	SERVICES / PRODUCTS
METEOROLOGICAL OBSERVATION PRODUCTS	Meteorological observations for flexible management of airspace and situational awareness.	AWOS, METAR/SPECI, local reports, radar, satellite, AIREP, wind and temperature profiles, VONA and volcanic ash.
METEOROLOGICAL FORECAST AND ALERT PRODUCTS	Support operational decision-making through forecasts and alerts.	TAF, GAMET, SIGMET, AIRMET, TREND, TCA, VAA warnings and alerts.
CLIMATOLOGICAL AND HISTORICAL PRODUCTS	Support planning and investigation of incidents.	Climatological tables and summaries and historical information.
TECHNOLOGICAL AIDS FOR THE GENERATION AND DISSEMINATION OF AERONAUTICAL METEOROLOGICAL PRODUCTS AND INFORMATION	Generate and disseminate operational meteorological information.	Technology for the generation and dissemination of products and information for aeronautical purposes.

Basic Modules and Elements of the Meteorological Service for Air Navigation



Basic Modules and Elements of the Meteorological Service for Air Navigation



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Basic Modules and Elements of the Meteorological Service for Air Navigation

LINE OF ESSENTIALS

The first line corresponds to the **Essential Elements**, which represent the minimum capacities necessary to ensure the safe, regular and efficient provision of the services and capacities defined within the BBB framework.

These indicators make it possible to verify the existence, availability and implementation of the services, processes, resources, human and technological components, infrastructure, systems and basic mechanisms required by ICAO for each functional area.

Basic Modules and Elements of the Meteorological Service for Air Navigation

2. Quality and Continuous Improvement Elements Line

The Quality and Continuous Improvement Elements Line groups the indicators associated with the mechanisms that ensure the sustainability, reliability and ongoing improvement of the implemented meteorological services.

This line allows the evaluation of aspects related to:

- Quality Management System.
- Staff competence and training.
- Performance management.
- Risk management.
- Change management.
- Document management.
- Management of suppliers and information providers.
- Contingency plans.
- Continuous improvement processes.

The indicators associated with this line allow verification that the implemented capabilities not only exist, but are also managed in a systematic and sustainable manner.

Basic Modules and Elements of the Meteorological Service for Air Navigation

3. Line of Technological and Interoperable Elements

With the premise that the Digital and Interoperable Elements Line groups the indicators associated with the technological evolution of the Meteorological Service for Air Navigation and its integration within the digital environment envisaged by the GANP and the AMET thread.

Unlike the **Technological and Interoperable Elements Line**, which verifies whether the required basic capabilities exist, and the **Quality and Continuous Improvement Elements Line**, which evaluates how those capabilities are managed and maintained, the **Essential Technological and Interoperable Elements Line** allows the following to be determined:

- The level of automation of meteorological processes.
- The availability of digital systems that support the observation, processing and dissemination of meteorological information.
- The capability for electronic exchange of information with other aeronautical services.
- The level of interoperability between meteorological systems and other systems used for air navigation.
- The availability of digital services for aeronautical users.
- The ability of the State to evolve towards the digital environments envisaged by the OACI and the GANP.
- The degree of preparedness to project a future implementation of evolving capabilities associated with the AMET thread.

The associated indicators allow the level of digital transformation achieved by the State to be measured and its alignment with the evolution established by the OACI for the aeronautical meteorological service.