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# Basic Building Block (BBB) Framework

APRIL 2019 VERSION



# Agenda

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- BBB Verification
- BBB Framework
  - Meteorological services
  - Aeronautical information services
  - Search and rescue services
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# Introduction

The Basic Building Block (BBB) framework outlines the foundation of any robust air navigation system. It is nothing new but the identification of the essential services to be provided for international civil aviation in accordance with ICAO Standards. These essential services are defined in the areas of aerodromes, air traffic management, search and rescue, meteorology and information management. In addition to essential services, the BBB framework identifies the end users of these services as well as the assets (communications, navigation, and surveillance (CNS) infrastructure) that are necessary to provide them.

The BBB is considered an independent framework and not a block of the ASBU framework as they represent a baseline rather than an evolutionary step. This baseline is defined by essential services recognized by ICAO Member States as necessary for international civil aviation to develop in a safe and orderly manner. Once these essential services are provided, they constitute the baseline for any operational improvement.

The BBB framework will be updated every two years taking into account amendments to ICAO provisions. Although an initial draft of the BBB framework is presented online in the GANP Portal (<https://www4.icao.int/ganportal/BBB>), the BBBs will be included in a web-based application in a format similar to the ASBU framework.



## BBB Verification

In 2014, the ICAO Council approved a new template for the Regional Air Navigation Plans (ANPs) to better align global and regional planning. This template consists of three volumes. Volumes I and II list the regional facilities as well as the general and specific regional service requirements, required for international civil aviation operations in accordance with regional air navigation agreements, in the areas of aerodrome operations, communications, navigation and surveillance, air traffic management, meteorology, search and rescue and aeronautical information management.

To set a baseline for the system envisioned in the GANP and to ensure a robust foundation for the global air navigation system, an effective process should be established to verify, pursuant to Article 37 of the Chicago Convention, that the essential air navigation services identified in the BBB framework are provided. It is important to highlight that this process should focus on verifying the implementation of the essential air navigation services outlined in the BBB framework as the capability of the States to oversight these services is covered by the ICAO USOAP. To avoid duplications and to align global and regional planning, the process for verifying the implementation of these essential services should be embedded within the methodology for the identification of deficiencies against the regional air navigation plans. If these essential services are not being delivered, ICAO, upon request of a State, provides the necessary technical assistance to address the needs as identified within the process.

To ensure the provision of seamless air navigation services based on the deployment of interoperable systems and harmonized procedures, States need to leverage the implementation of the BBBs through their national air navigation plans as a strategic part of their national aviation planning framework. This will also pave the way for the future implementation of air navigation improvements to increase the quality of the services and meet the performance expectations of the aviation community



## BBB Framework:

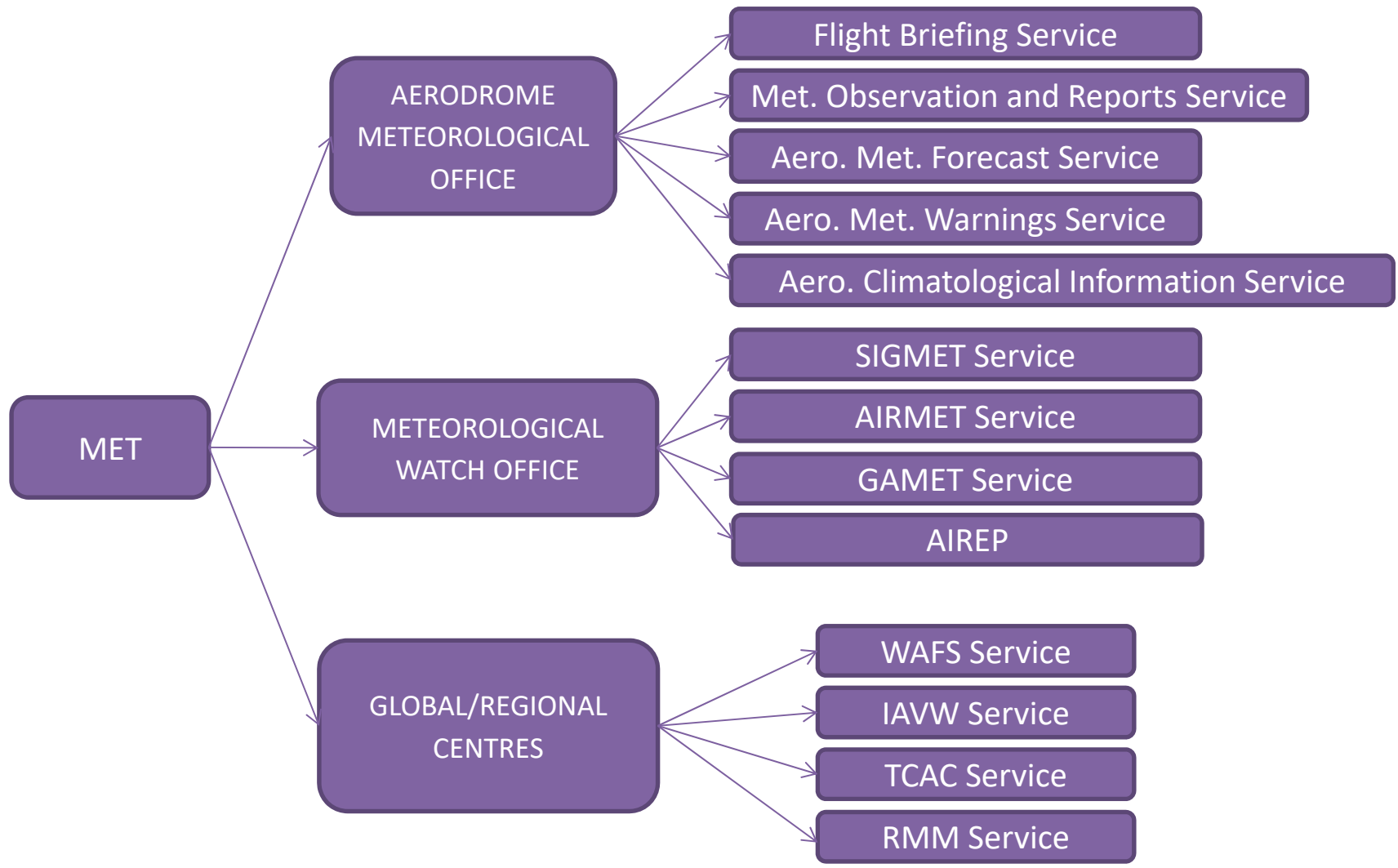
- METEOROLOGICAL INFORMATION
- AERONAUTICAL INFORMATION
- SEARCH AND RESCUE
- AIR TRAFFIC MANAGEMENT
- AERODROME OPERATIONS



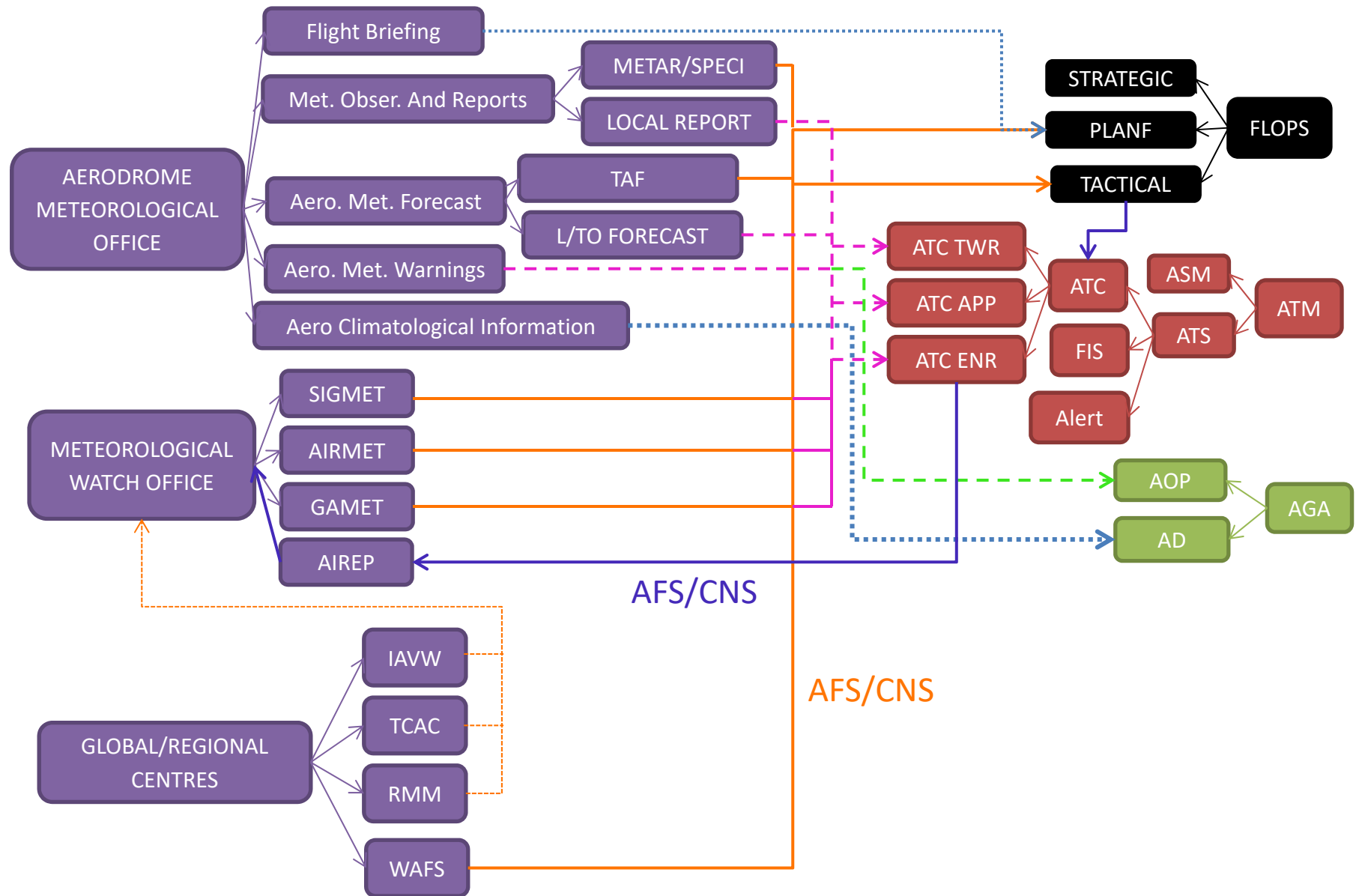
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# METEOROLOGICAL SERVICES

# MET BASIC MODULES AND ELEMENTS



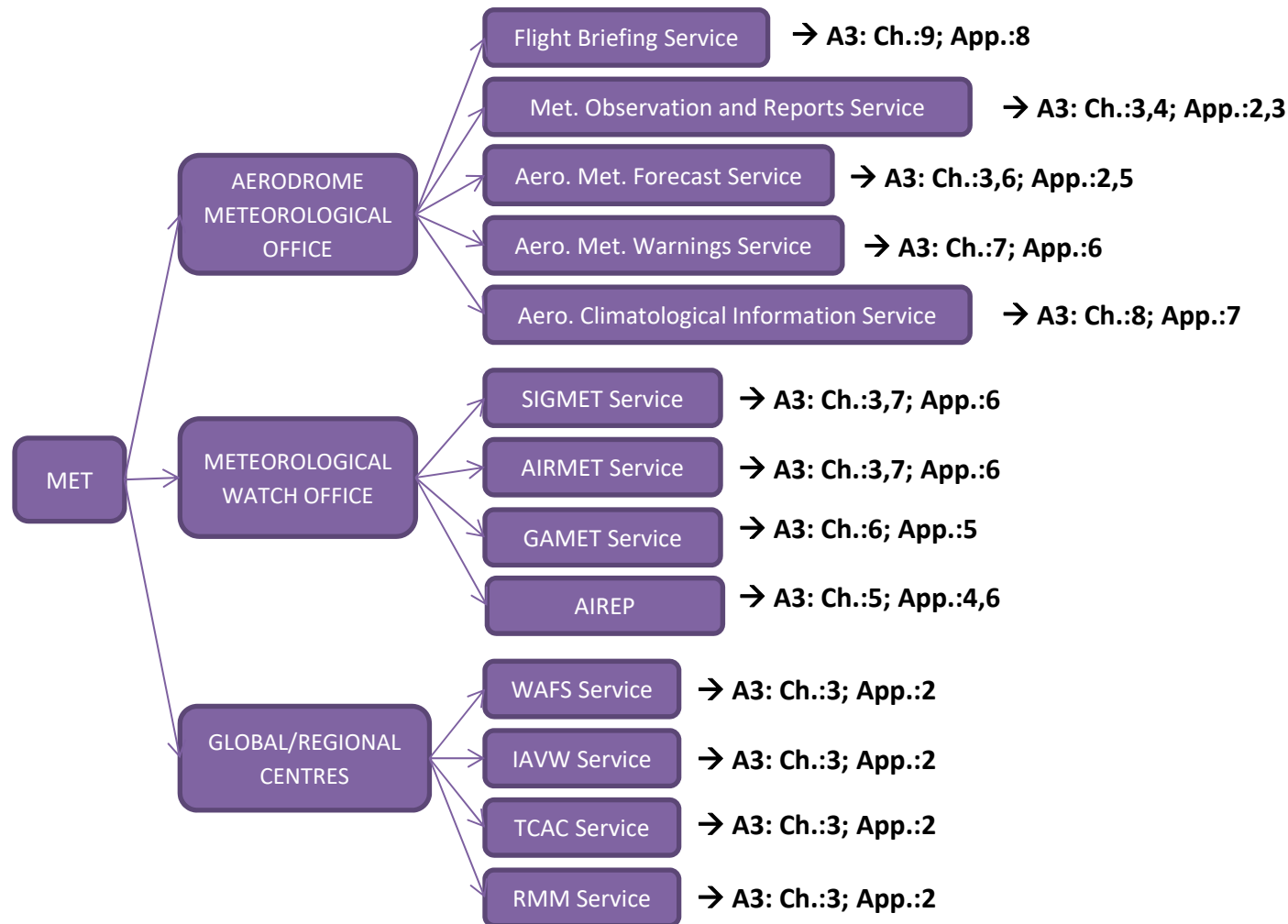
# MET SUPPORT & END USERS





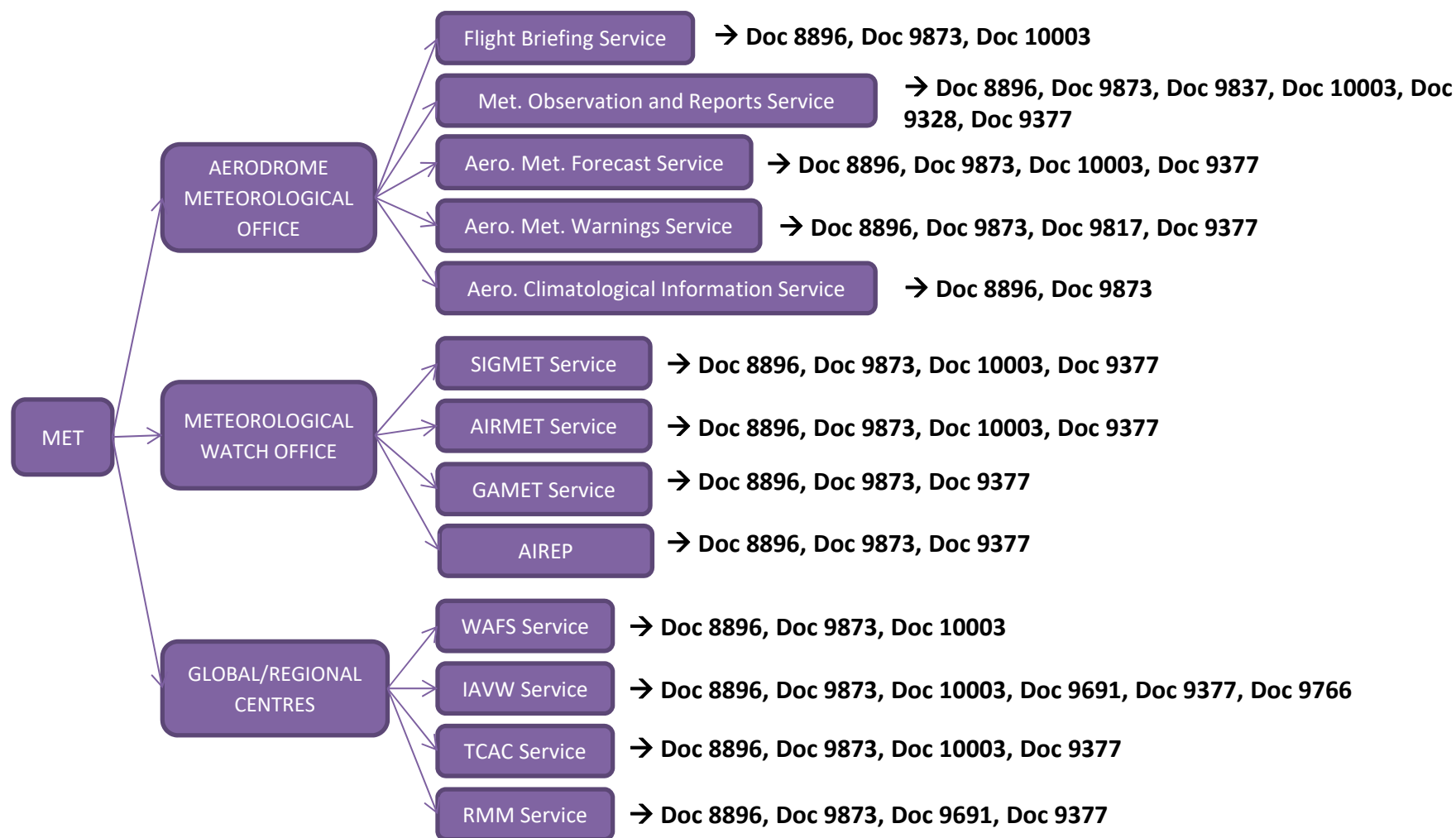
# MET BASIC ELEMENTS/REFERENCES

## ICAO SARP<sub>s</sub>



# MET BASIC ELEMENTS/REFERENCES

## GUIDANCE MATERIAL





## MET References

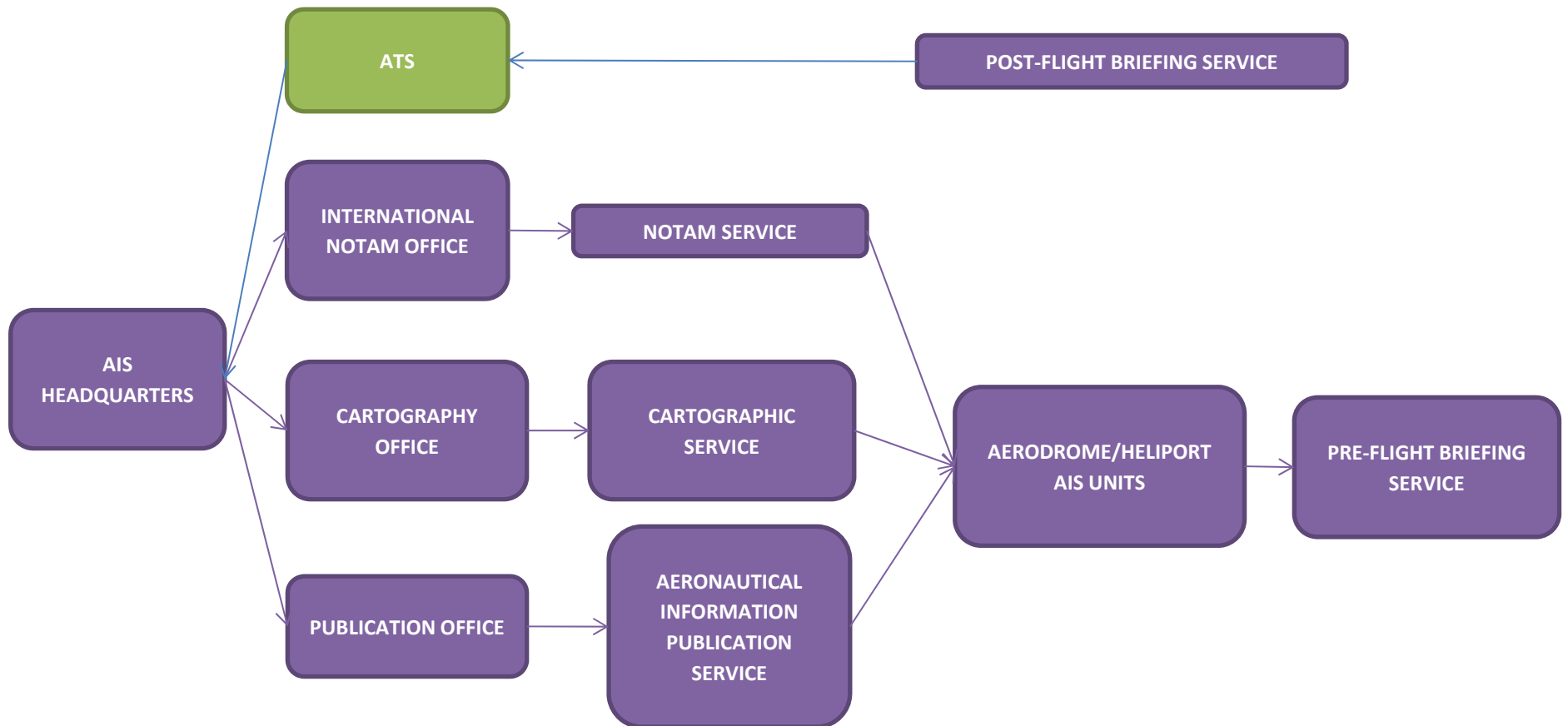
- Annex 3: Meteorological Service for International Air Navigation
- Doc 8896: Manual of Aeronautical Meteorological Practice
- Doc 9873: Manual on the Quality Management System for the Provision of Meteorological Service to International Air Navigation
- Doc 9837: Manual on Automatic Meteorological Observing Systems at Aerodromes
- Doc 10003: Manual on the Digital Exchange of Aeronautical Meteorological Information
- Doc 9817: Manual on Low-level Wind Shear
- Doc 9691: Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds
- Doc 9328: Manual of Runway Visual Range Observing and Reporting Practices
- Doc 9377: Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services
- Doc 9766: Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List



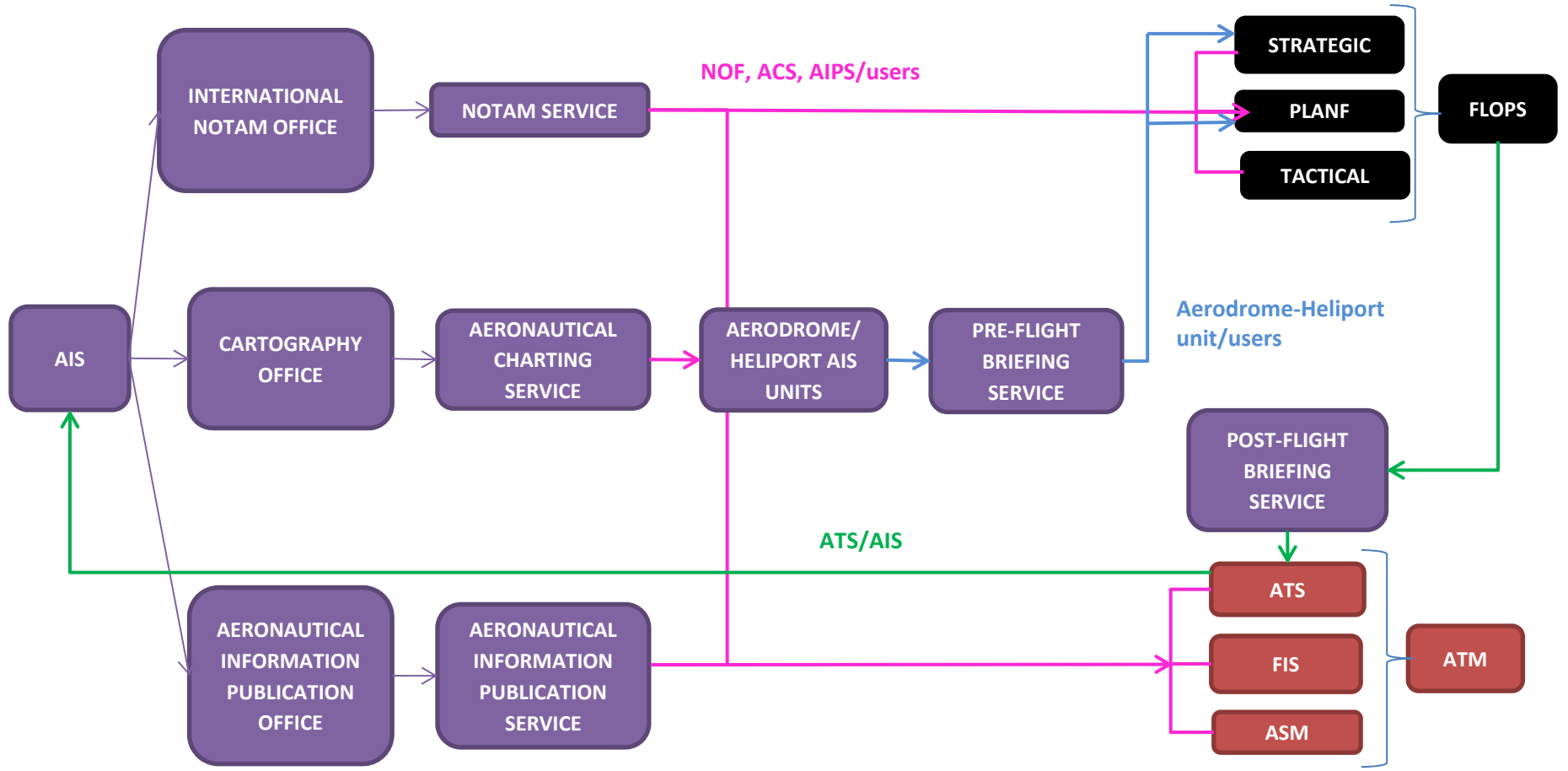
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# AERONAUTICAL INFORMATION SERVICES

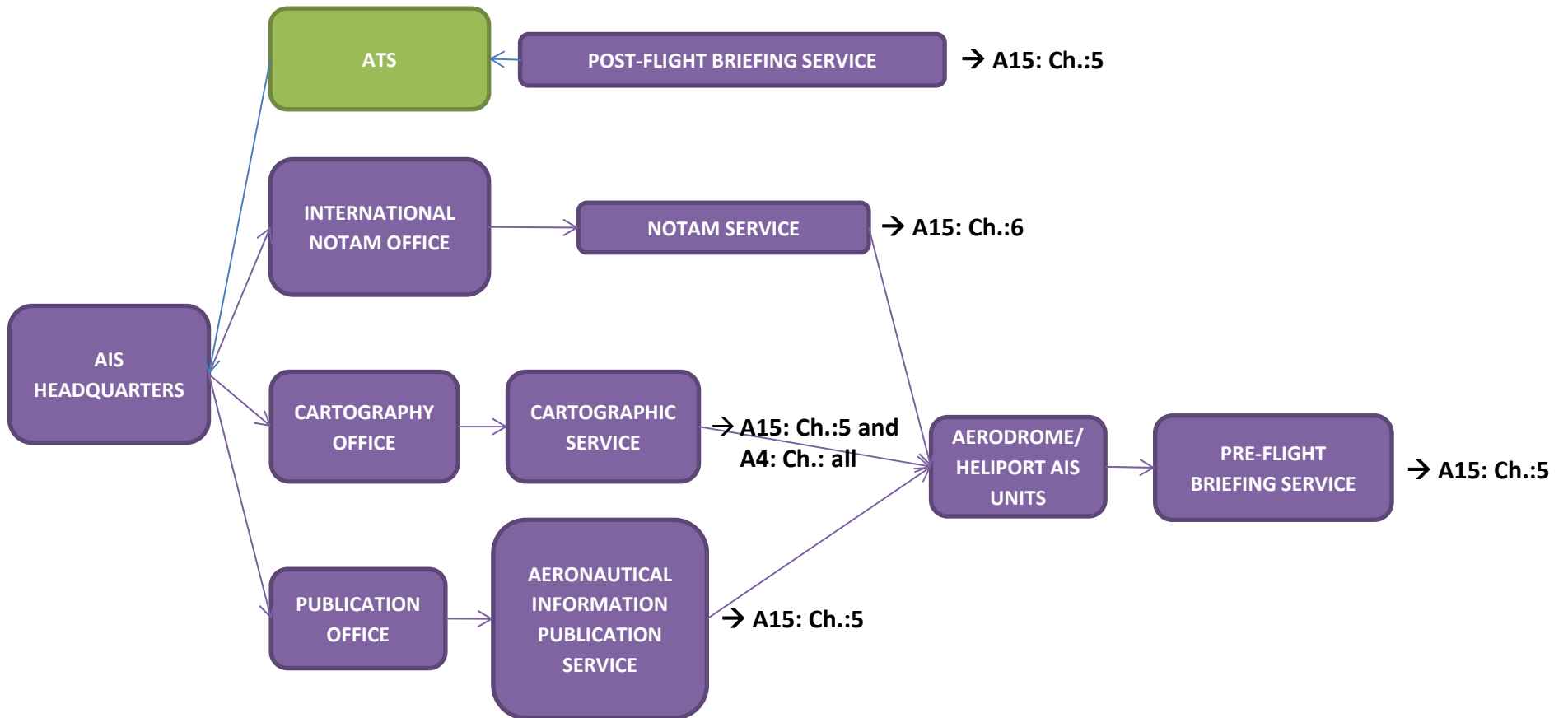
# AIS BASIC MODULES AND ELEMENTS



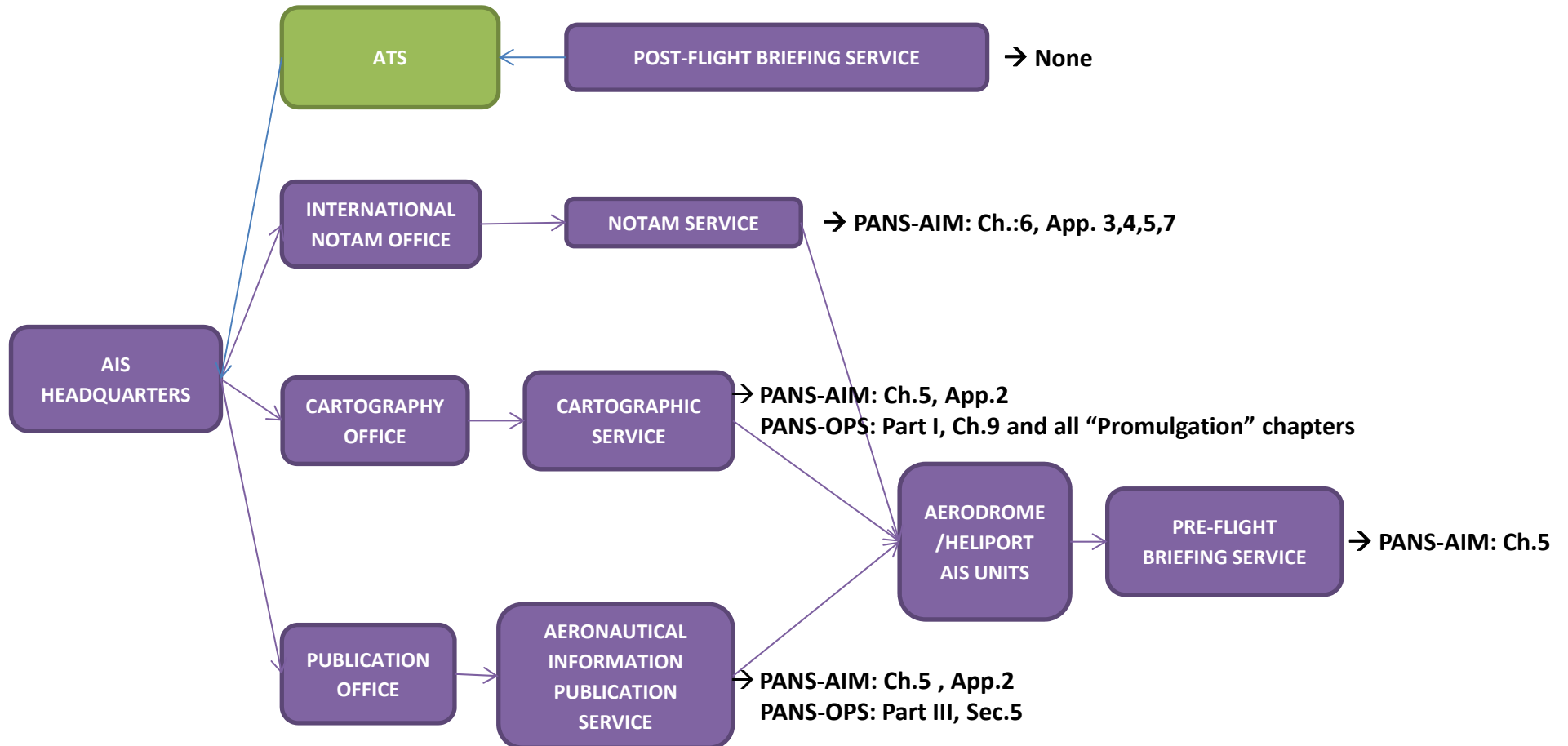
# AIS SUPPORT & END USERS



# AIS BASIC ELEMENTS/REFERENCES ICAO SARP<sub>s</sub>

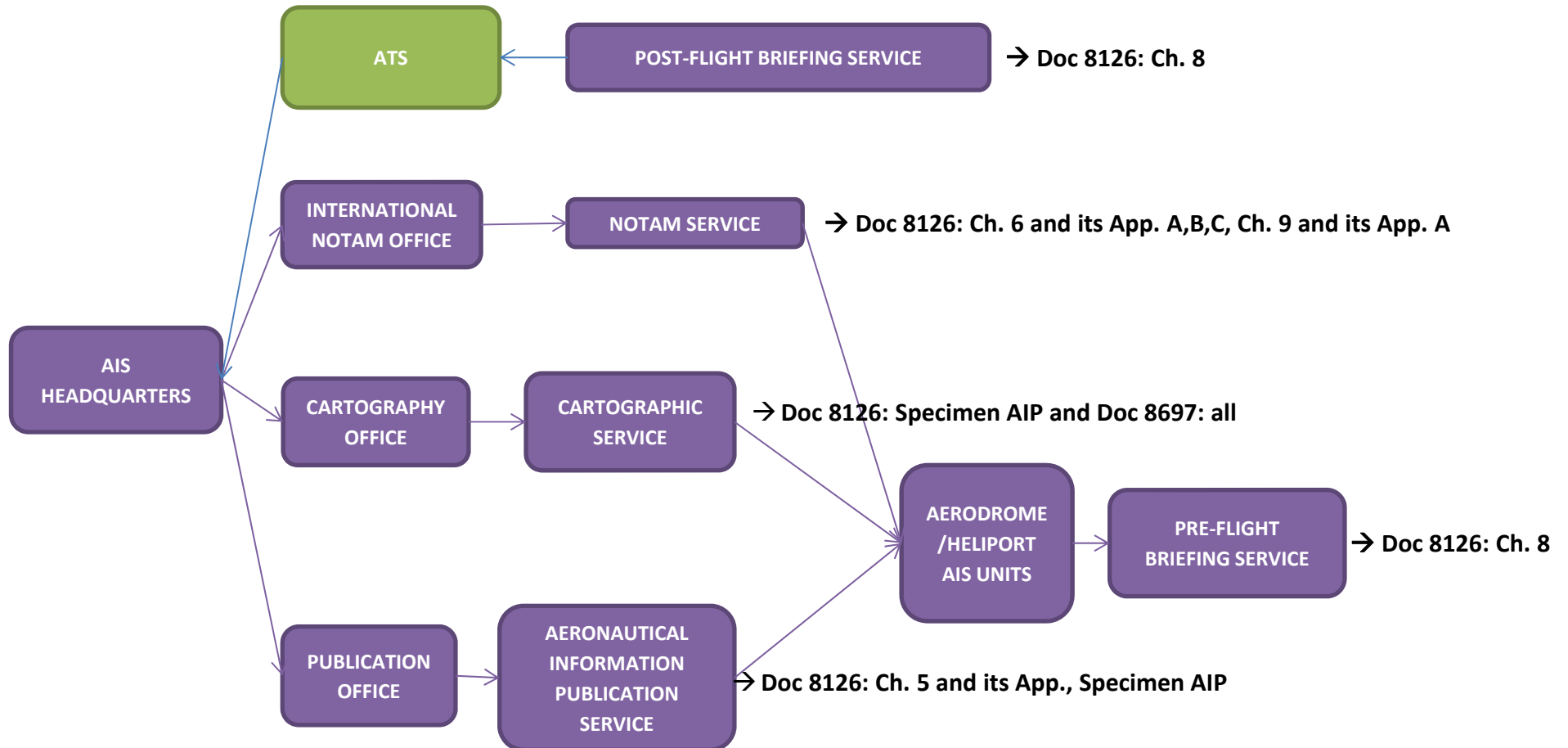


# AIS BASIC ELEMENTS/REFERENCES ICAO Procedures





# AIS BASIC ELEMENTS/REFERENCES ICAO Guidance





## AIS References

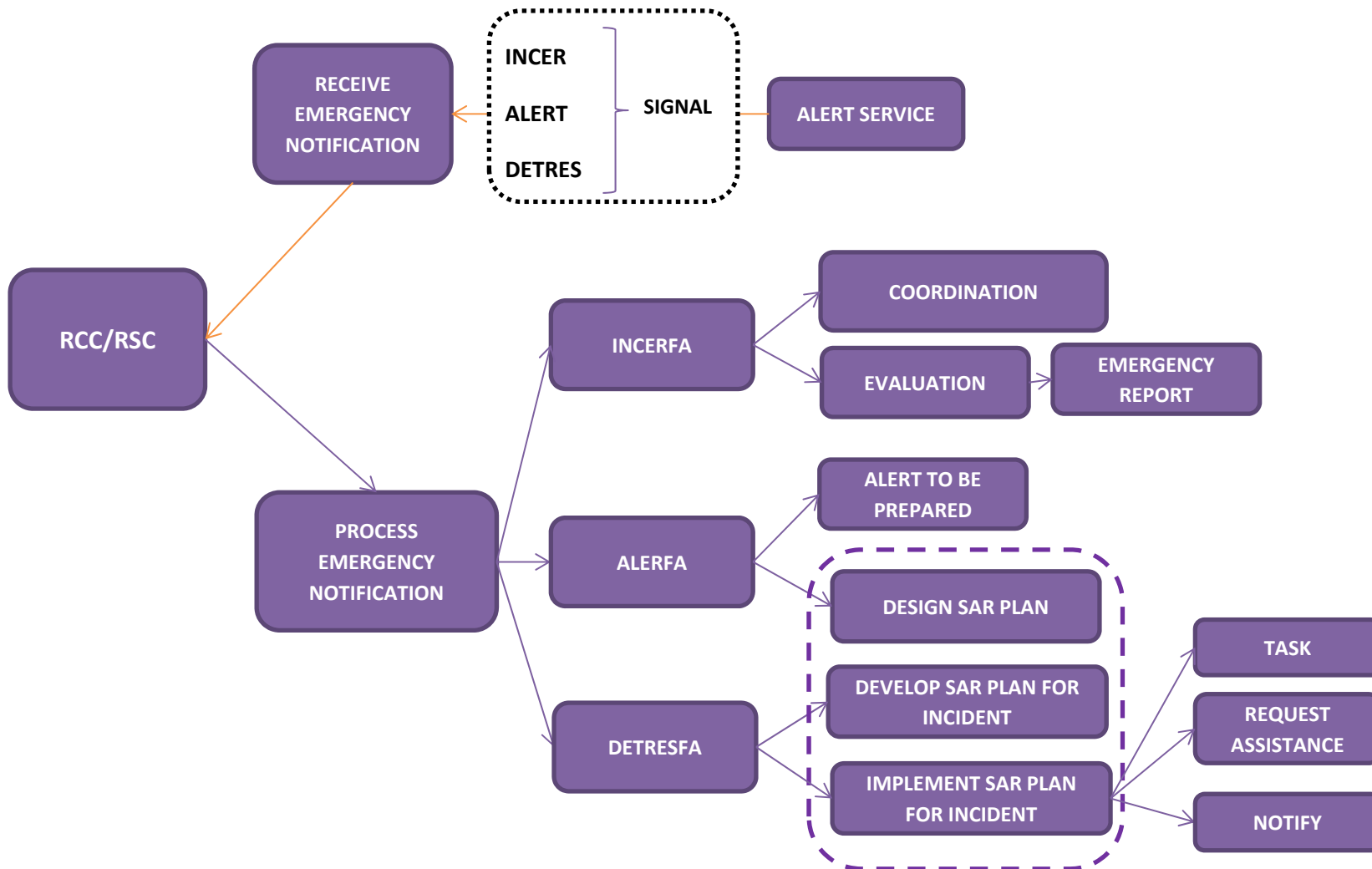
- Annex 15: Aeronautical Information Services
- Annex 4: Aeronautical Charts
- PANS-AIM (Doc 10066): Aeronautical Information Management
- PANS-OPS (Doc 8168): Aircraft Operations
- Doc 8126: Aeronautical Information Services Manual



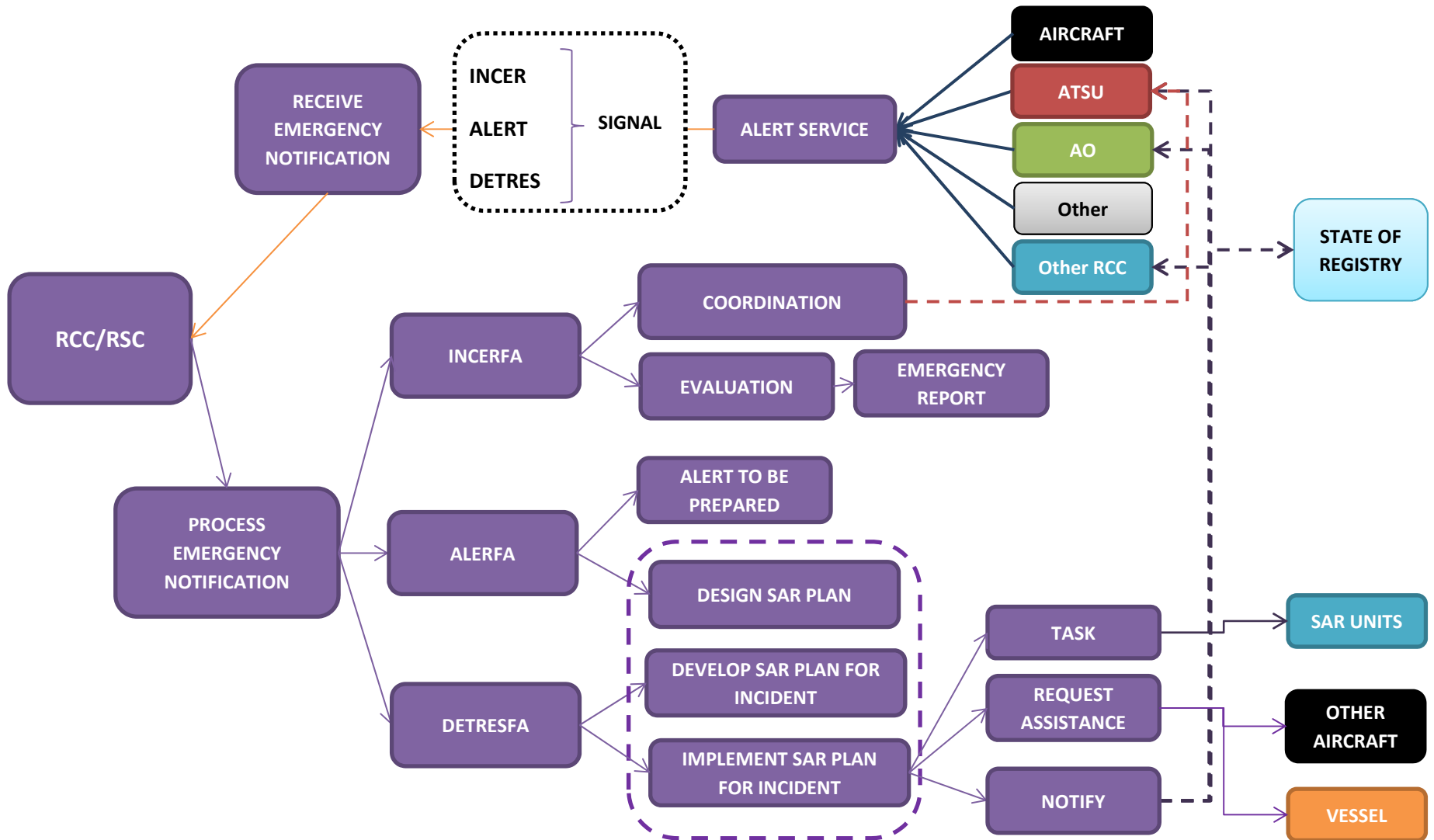
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# SEARCH AND RESCUE SERVICES

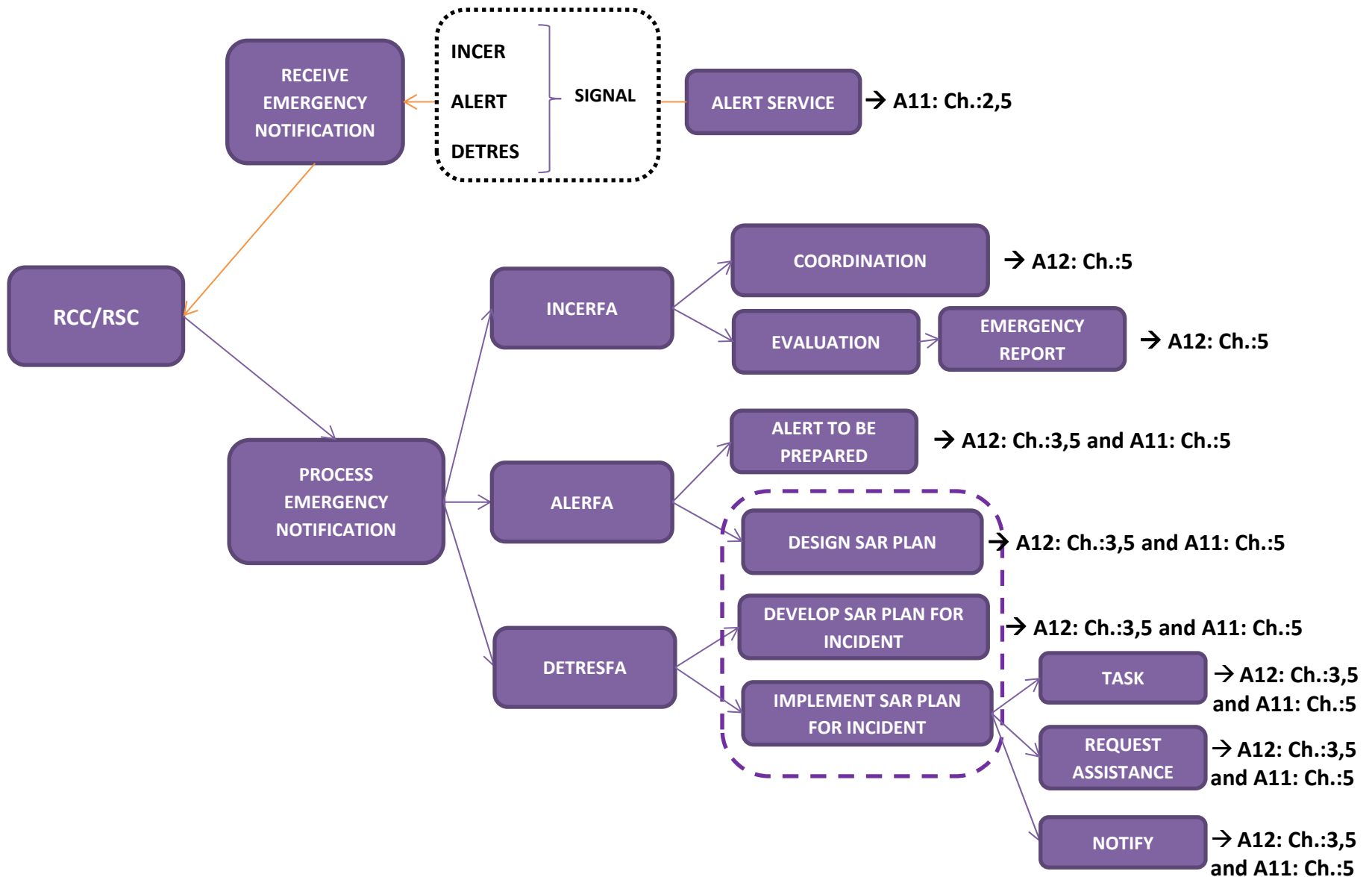
# SAR BASIC MODULES AND ELEMENTS



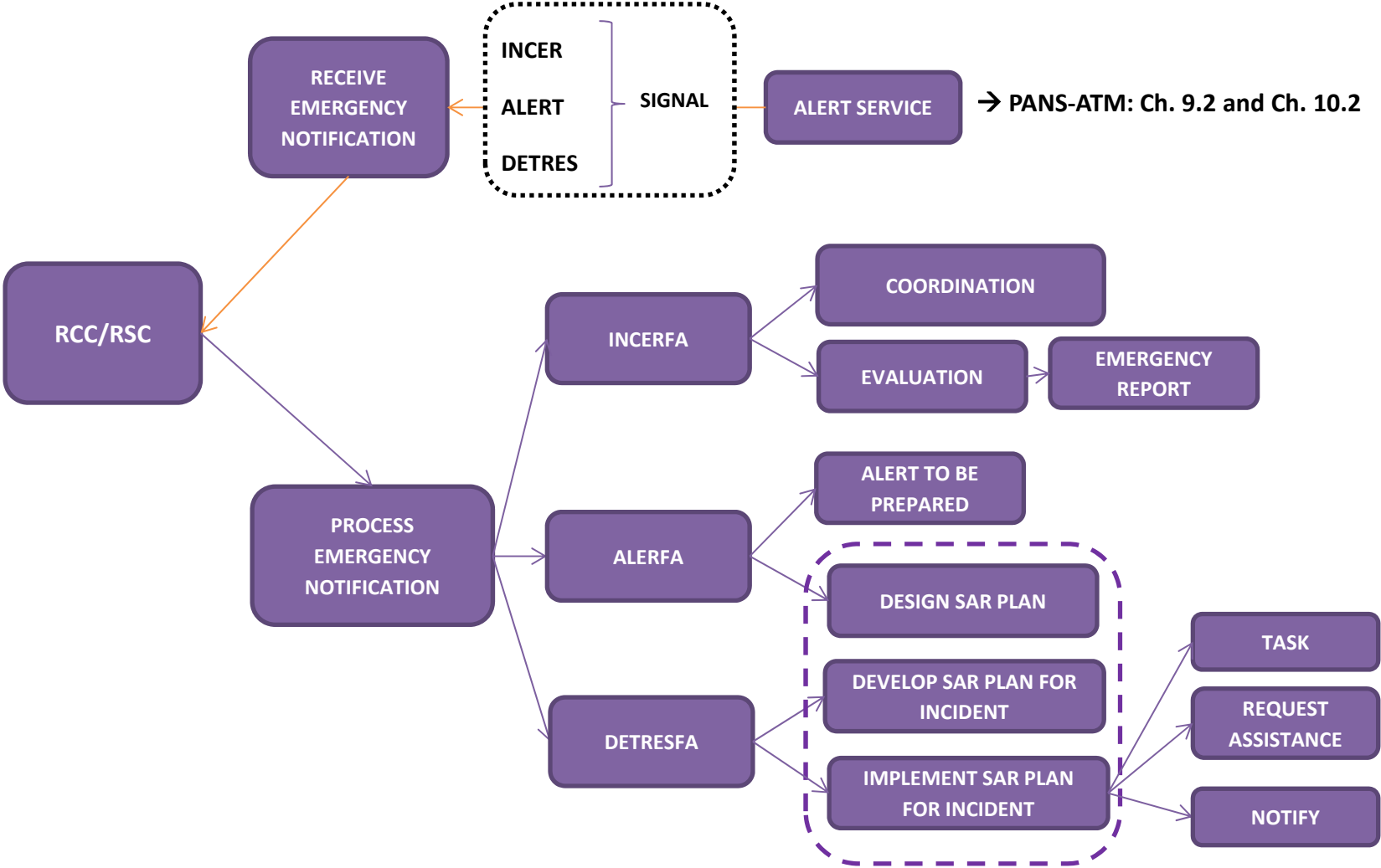
# SAR SUPPORT & END USERS



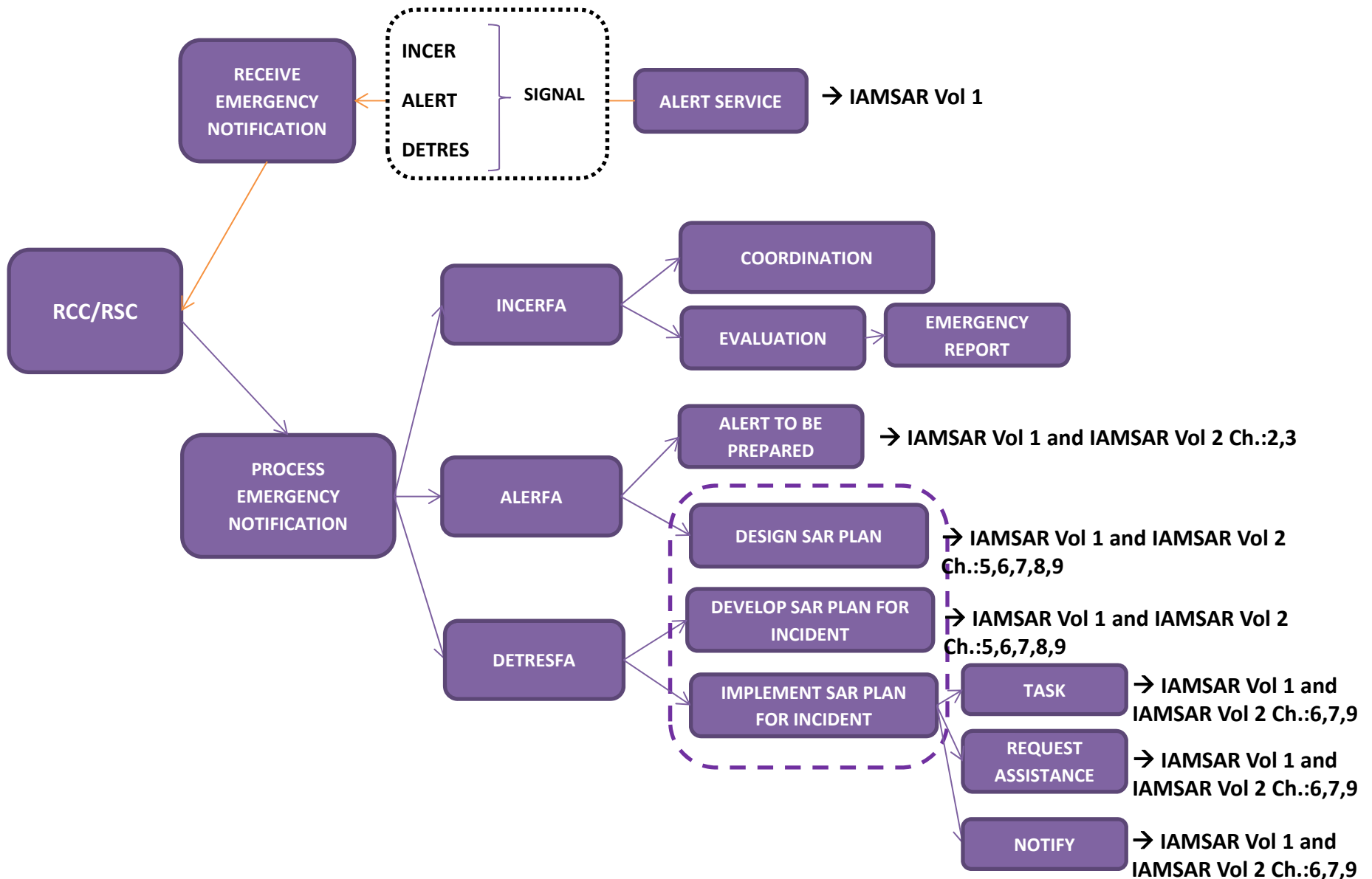
# SAR BASIC ELEMENTS/REFERENCES ICAO SARPs



# SAR BASIC ELEMENTS/REFERENCES ICAO PANS



# SAR BASIC ELEMENTS/REFERENCES ICAO GUIDANCE







## SAR References

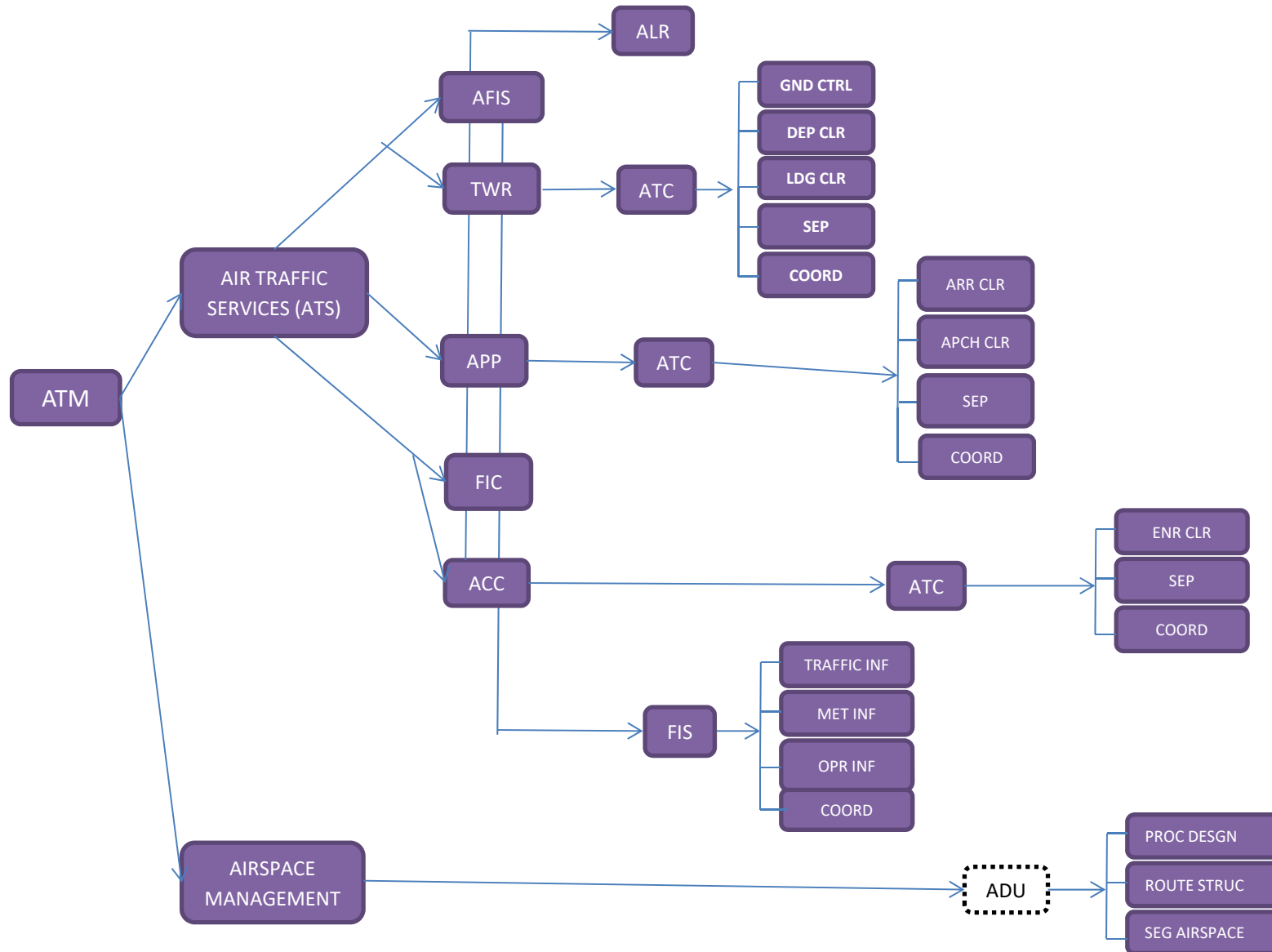
- Annex 11: Air Traffic Services
- Annex 12: Search and Rescue
- PANS-ATM (Doc 4444): Air Traffic Management
- Doc 9731: IAMSAR Manual - International Aeronautical and Maritime Search and Rescue Manual



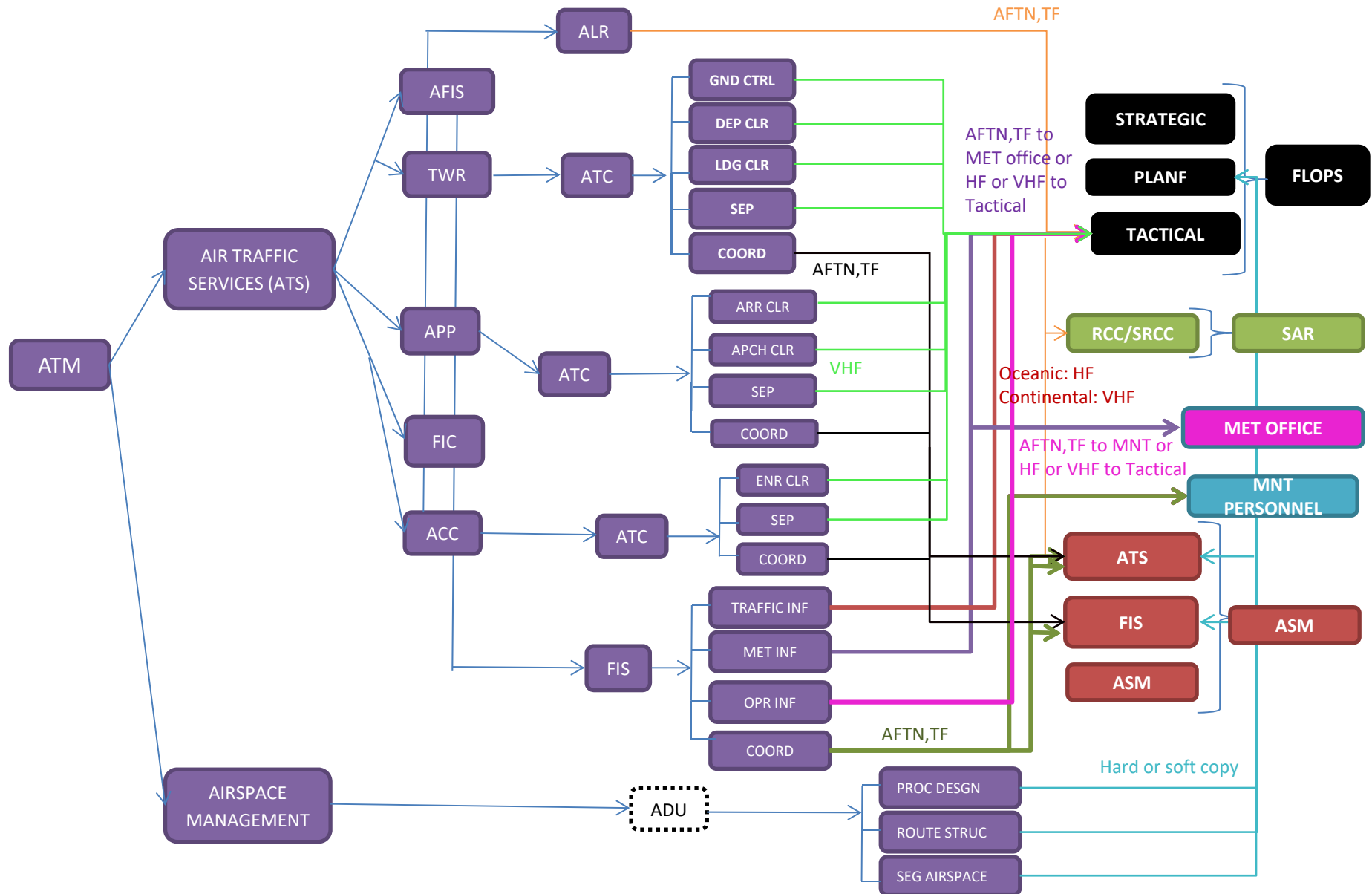
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# AIR TRAFFIC MANAGEMENT SERVICES

# ATM BASIC MODULES AND ELEMENTS

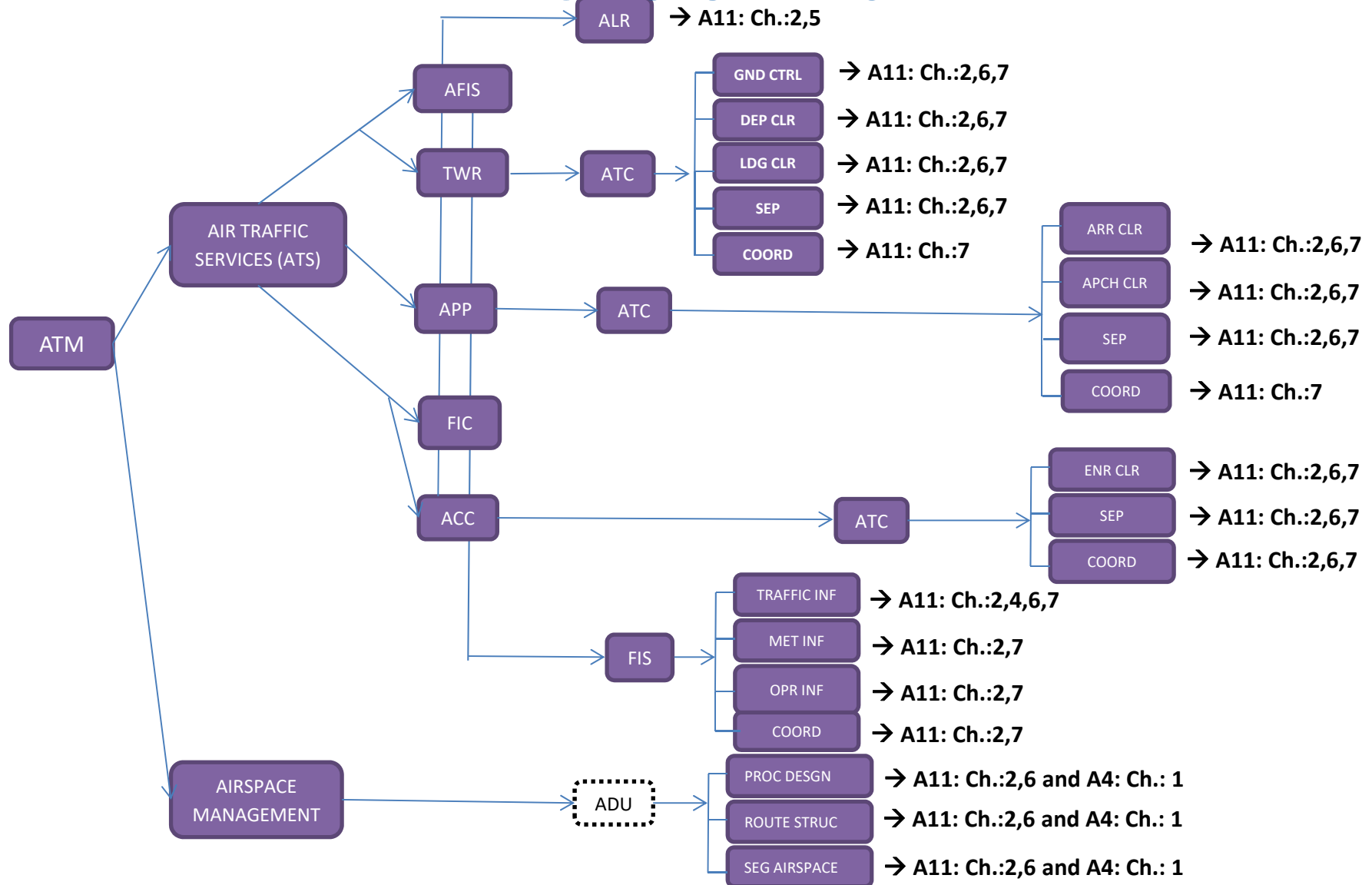


# ATM SUPPORT & END USERS



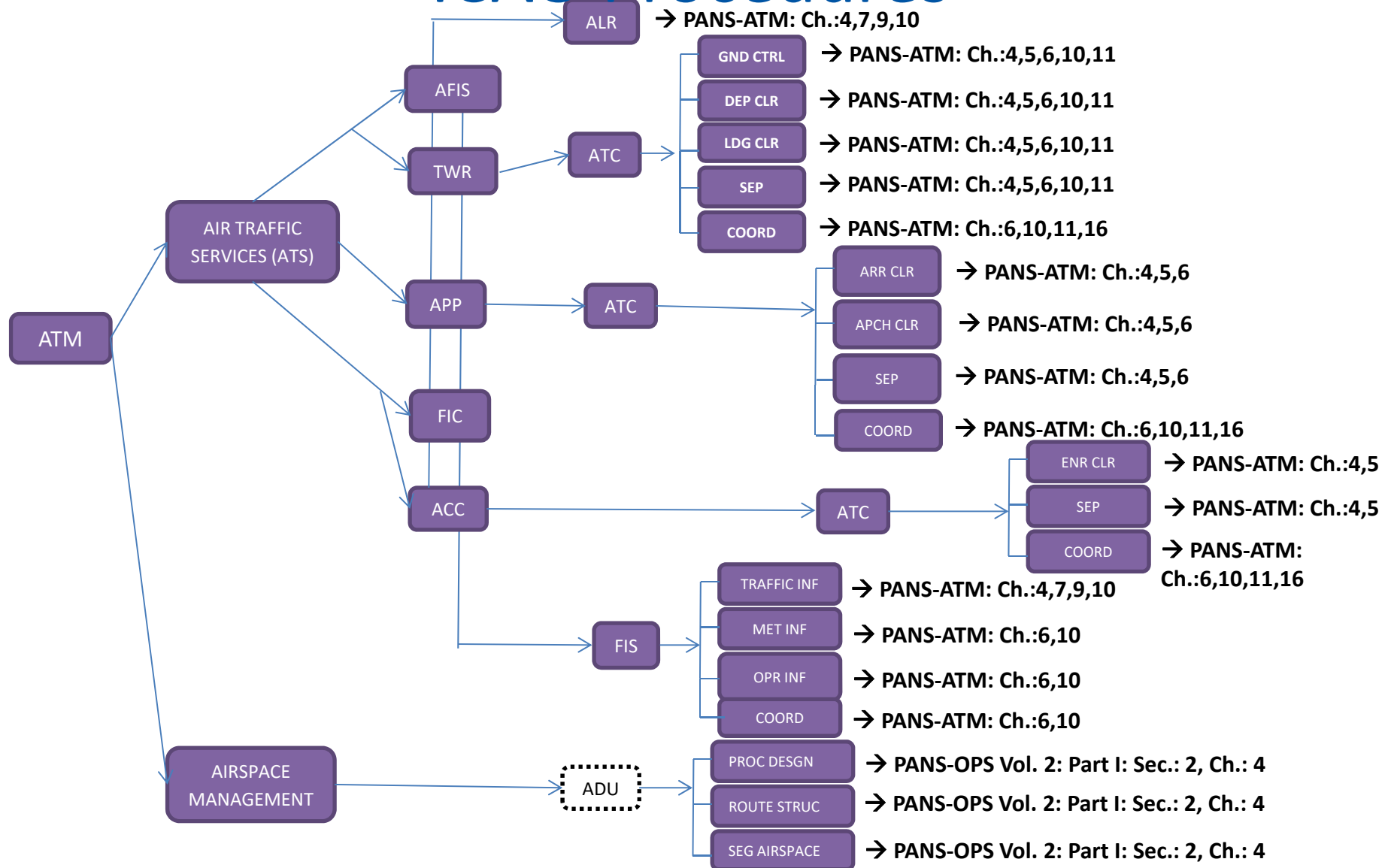
# ATM BASIC ELEMENTS/REFERENCES

## ICAO SARP<sub>s</sub>



# ATM BASIC ELEMENTS/REFERENCES

## ICAO Procedures





## ATM References

- Annex 11: Air Traffic Services
- Annex 4: Aeronautical Charts
- PANS-ATM (Doc 4444): Air Traffic Management
- PANS-OPS (Doc 8168): Aircraft Operations



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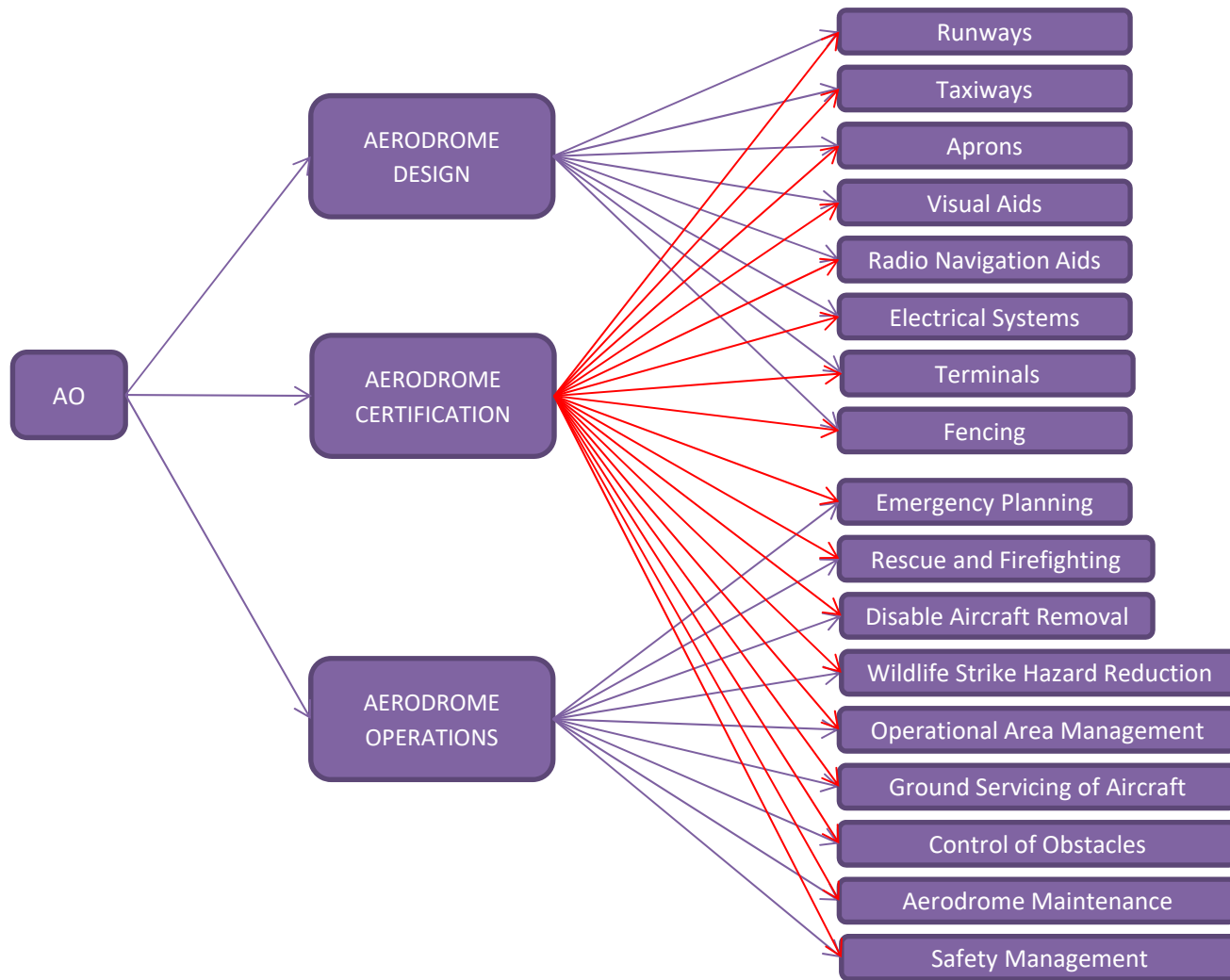
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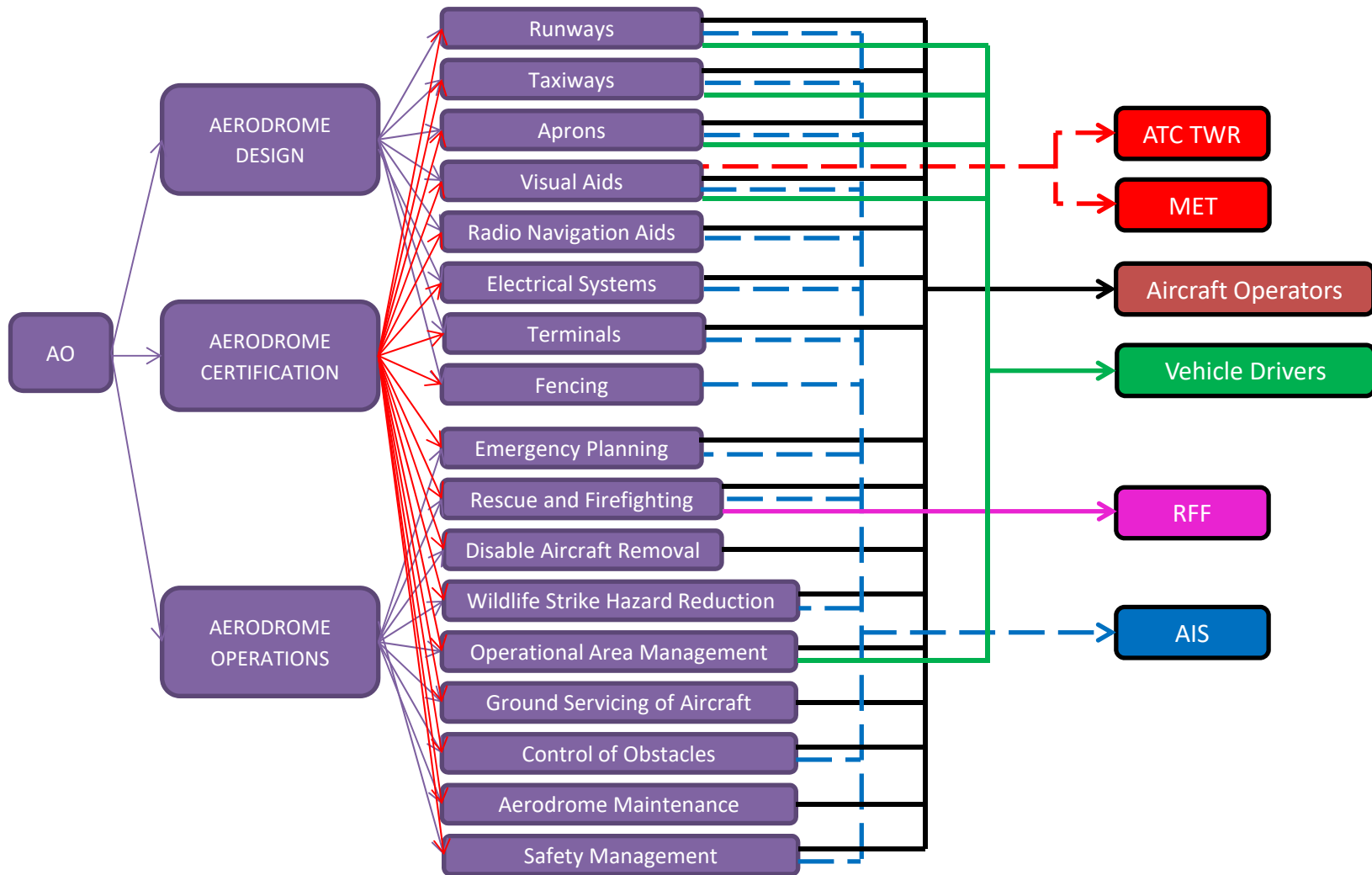
# AERODROMES/ AERODROMES OPERATIONS SERVICES



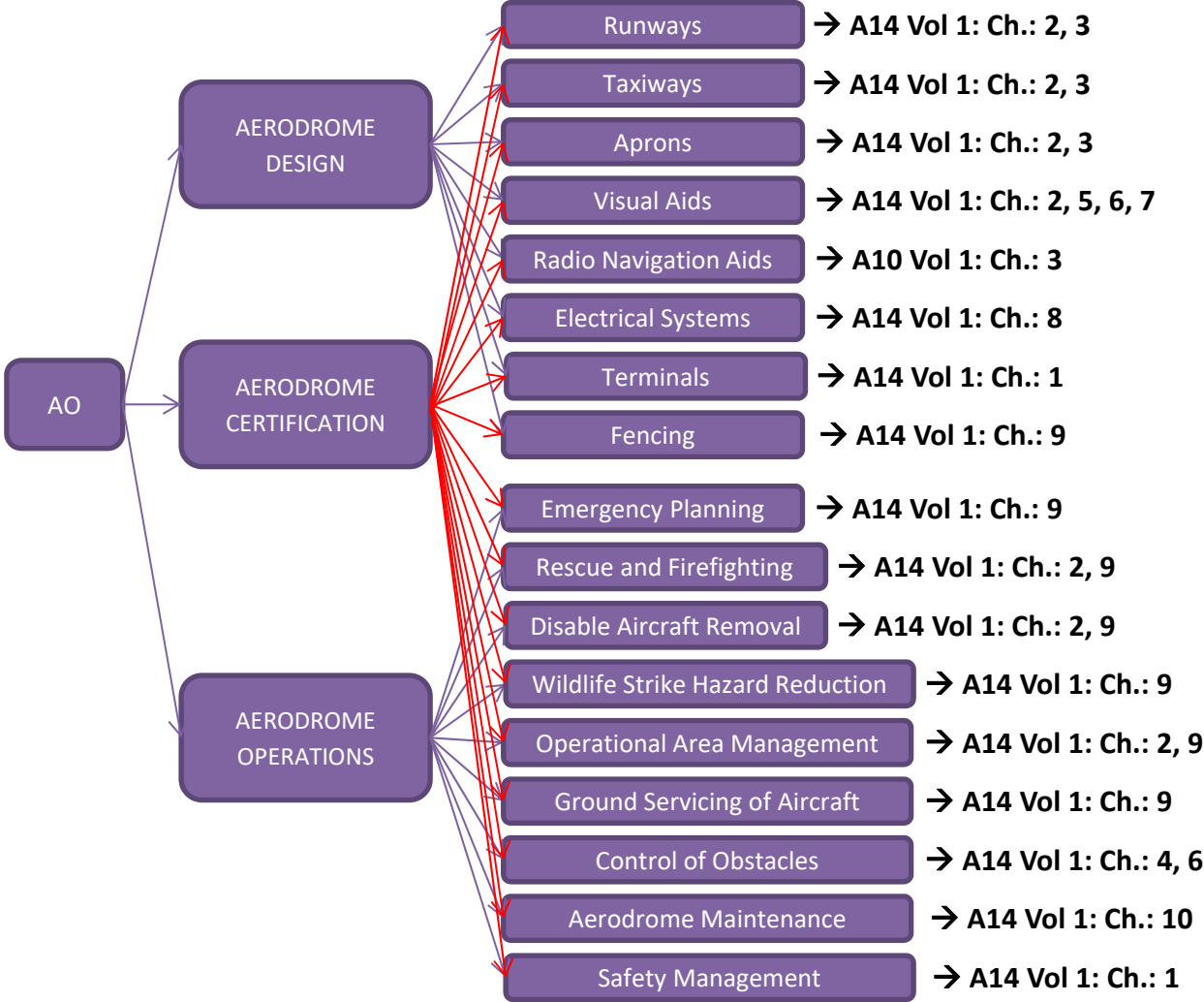
# AO BASIC MODULES AND ELEMENTS



# AO SUPPORT & END USERS

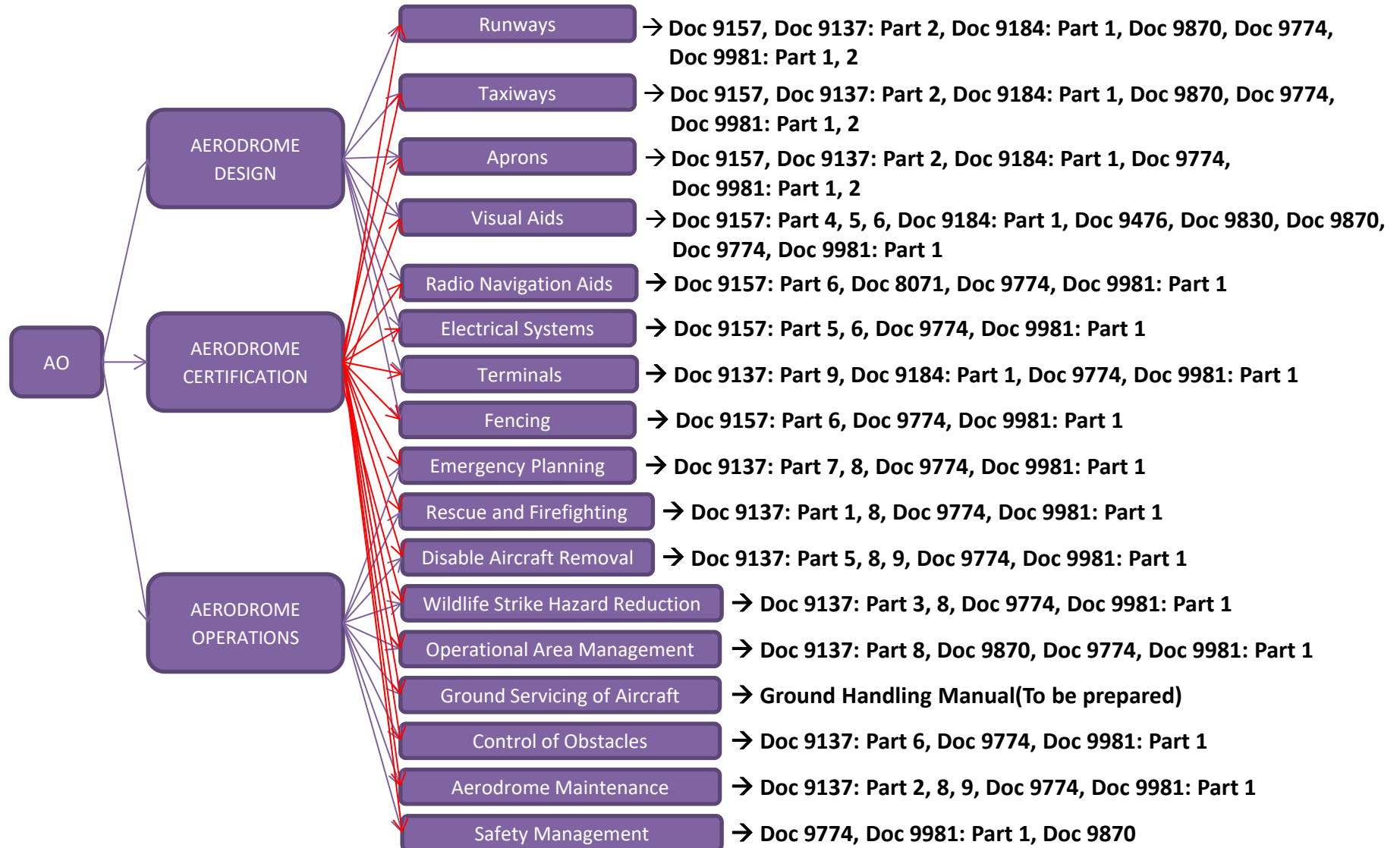


# AO BASIC ELEMENTS/REFERENCES ICAO SARP<sub>s</sub>



# AO BASIC ELEMENTS/REFERENCES ICAO

## Guidance & Procedures





## AO References

- Annex 14: Aerodromes Volume I — Aerodrome Design and Operations
- Annex 10: Aeronautical Telecommunications Volume I — Radio Navigation Aids
- Doc 9157: Aerodromes Design Manual
- Doc 9184: Airport Planning Manual
- Doc 9137: Airport Services Manual
- Doc 9476: Manual of Surface Movement Guidance and Control Systems (SMGCS)
- Doc 9830: Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual
- Doc 9870: Manual on the Prevention of Runway Incursions
- Doc 8071: Manual on Testing of Radio Navigation Aids
- Doc 9774: Manual on Certification of Aerodromes
- PANS-Aerodromes(Doc 9981): Aerodromes

