



ICAO

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



# Coordination and Implementation of contingency measures

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## Module 4

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## Module Objectives

Strengthen the skills of personnel involved in air navigation services management to respond effectively to emergency situations through:

1. Understanding and applying hierarchical response structures,
2. Defining operational roles and responsibilities,
3. Forming contingency committees, and
4. Implementing the Team Resource Management (TRM) approach.

This is to ensure service continuity and safety.

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# INTRODUCTION

- In the context of air navigation services, the occurrence of emergency or contingency situations requires a structured, coordinated, and efficient response from Air Navigation Service Providers (ANSPs).
- This module addresses the elements that enable such a response: the hierarchy of action during critical events, the clear definition of roles and responsibilities, the formation and operation of contingency committees, and the application of the Team Resource Management (TRM) model as a collaborative management tool.
- Through the study of these components, the aim is to provide operational, technical, and administrative staff with a comprehensive and practical vision to act promptly, safely, and cohesively in disruptive scenarios, helping to preserve service continuity and compliance with international standards.

# Modules Content

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**01** **Response Hierarchy**  
Strategic, tactical and operational levels  
for an effective response.

**02** **Functions and Responsibilities**  
Role of the ANSP and the contingency  
committee

**03** **Team Resource Management (TRM)**  
Managing team resources in critical  
situations

# Event Response Hierarchy

## Why a hierarchy?

It allows for clear organization and distribution of functions during an emergency situation, ensuring efficient and coordinated management.

Proposed hierarchical structure:

- **Strategic Level**
- **Tactical Level**
- **Operational Level**

Benefits of the hierarchical approach:

- Clarity in decision-making.
- Efficient use of human and technical resources.
- Avoids duplication of functions.
- Improves inter-institutional communication.

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# Event Response Hierarchy – Overview

## Strategic Level

### Strategic Level – General Management

- Has ultimate authority over institutional resources.
- Defines priority objectives and issues general guidelines.

#### Duties:

- Evaluate organizational impact.
- Coordinate with high-level external entities.
- Make decisions regarding business continuity and institutional relations.



STRATEGIC  
LEVEL

# Event Response Hierarchy – Overview

## Tactical Level

### Tactical Level – Intermediate Coordination

- Acts as a bridge between strategy and execution.
- Supervises operational personnel without directly intervening in the field.
- Must maintain active communication with tactical personnel from other involved entities.

#### Duties:

- Develop operational plans based on the strategy.
- Manage logistical and human resources required by the operational team.
- Monitor the development of the incident in real time.





# Event Response Hierarchy – Overview

## Operational Level

### Operational Level – Direct Execution

- Responsible for implementing actions at the incident scene.
- Has direct contact with technical resources and frontline personnel.

### Duties:

- Execute tactical instructions in the field.
- Make immediate decisions regarding operational safety.
- Report developments and provide feedback to higher levels.



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# Event Response Hierarchy – Overview

## Leadership

### **Assigned Leadership:**

- Each level must have a clearly defined leader:
  - Strategic Leader: CEO or highest institutional authority.
  - Tactical Leader: Designated crisis manager or manager on duty.
  - Operational Leader: Head of operations assigned to the incident.

### **Importance of Leadership:**




- Defines a clear line of command.
- Facilitates vertical and horizontal coordination.
- Allows for swift and consistent action in critical situations.

## Functions and Responsibilities

- An ANSP must clearly define and document the roles and responsibilities of key personnel in contingency situations.
- This requires establishing a multidisciplinary team to coordinate and execute all necessary activities for timely decision-making.
- This team is called a "contingency committee."

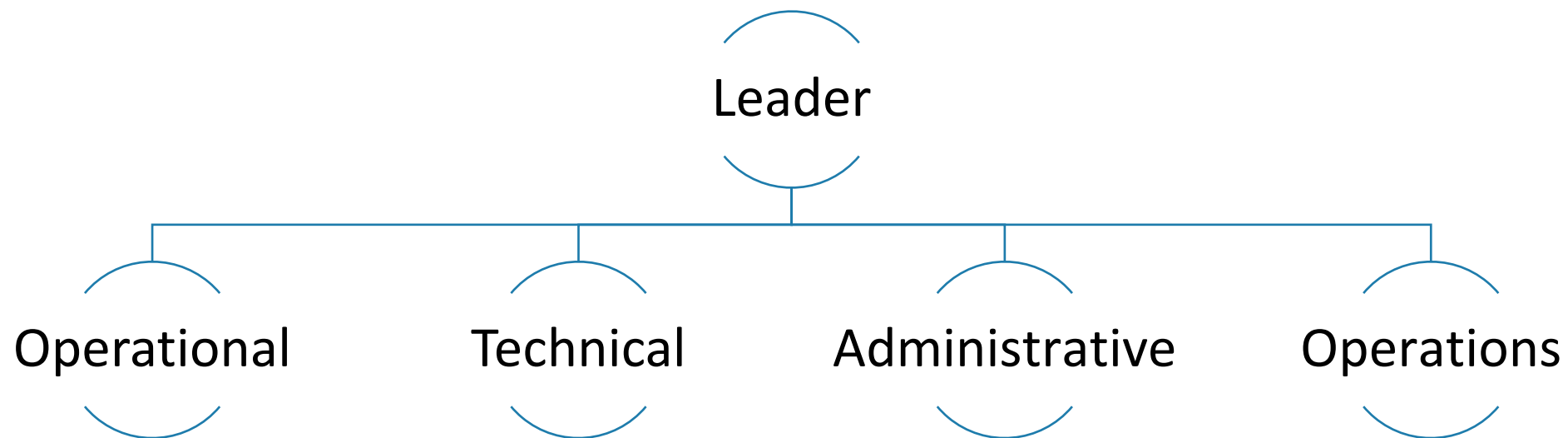
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## Functions and Responsibilities

- An ANSP must clearly **define and document the roles and responsibilities of key personnel** in contingency situations.
- *This requires **establishing** a multidisciplinary team to coordinate and execute all necessary activities for timely decision-making.*
- This team is called a "contingency committee."
- Effective contingency management requires clarity in the roles and responsibilities of the personnel involved.
- Each Air Navigation Service Provider (ANSP) must:
  -  Formally define the key roles.
  -  Establish Coordination and decision-making mechanisms.
  -  Form a multidisciplinary team from activation to event closure.

# Functions and Responsibilities

## Contingency Committee



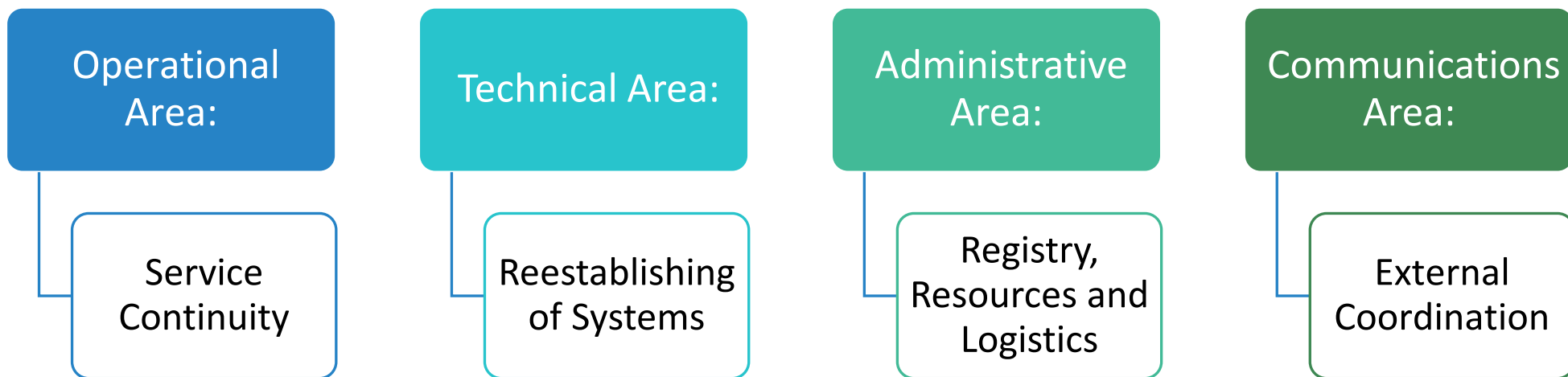
# Contingency Committee

## Leadership

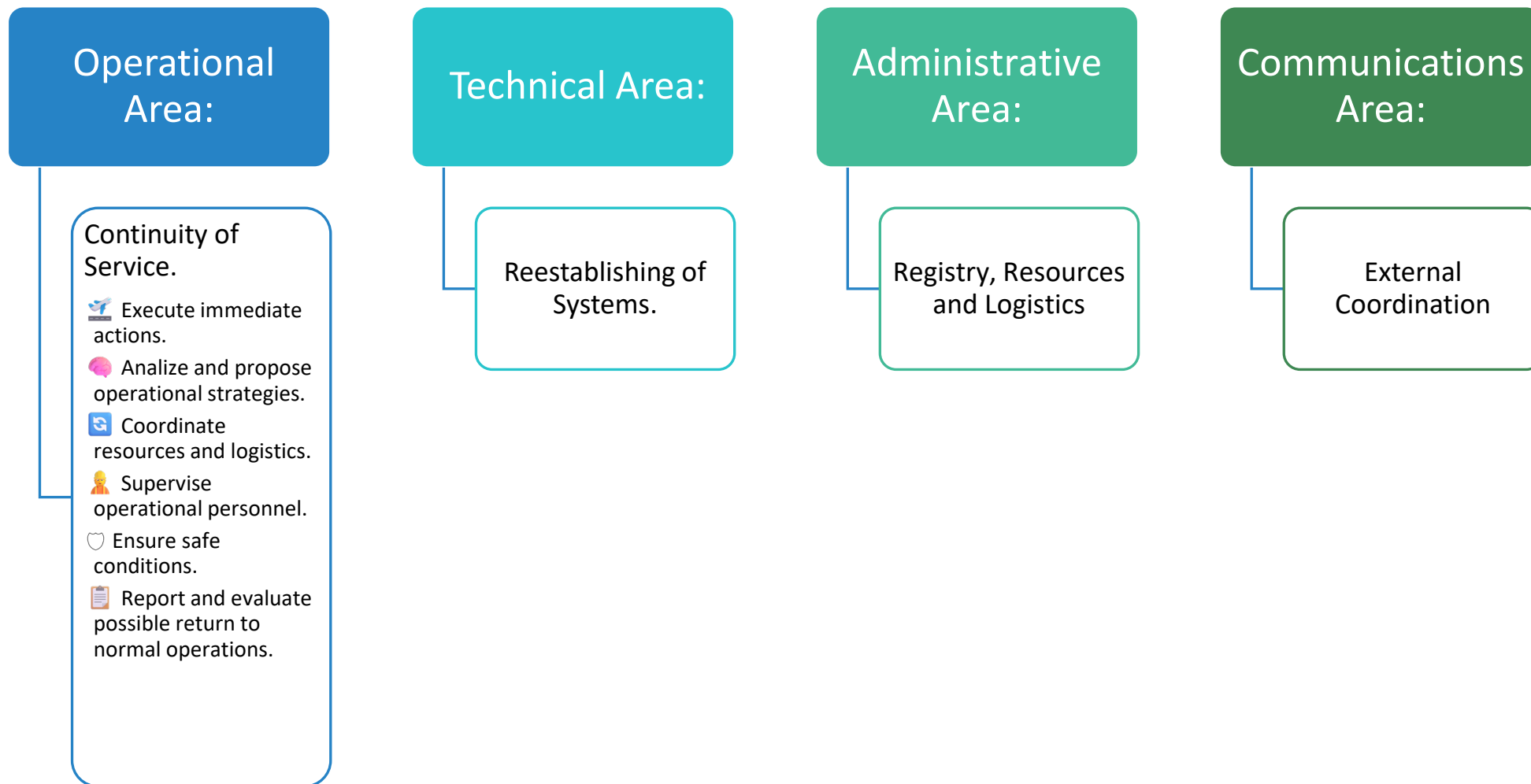
- Responsible for the ANSP Executive, with the following powers:
  - ✓ Authorize decisions.
  - 💰 Manage resources.
  - 🏛️ Provide institutional representation.
- Duties:
  - 🔔 Activate and deactivate the Contingency Plan.
  - 🔍 Assess the situation.
  - 🧩 Approve operational, technical, and administrative measures.
  - 🔧 Form specialized teams.
  - 🛡️ Ensure staff safety.
  - 📊 Supervise teams and the coordination center.
  - 🤝 Coordinate the institutional response.

## Functions by Area – Overview

Each committee member has specific functions:

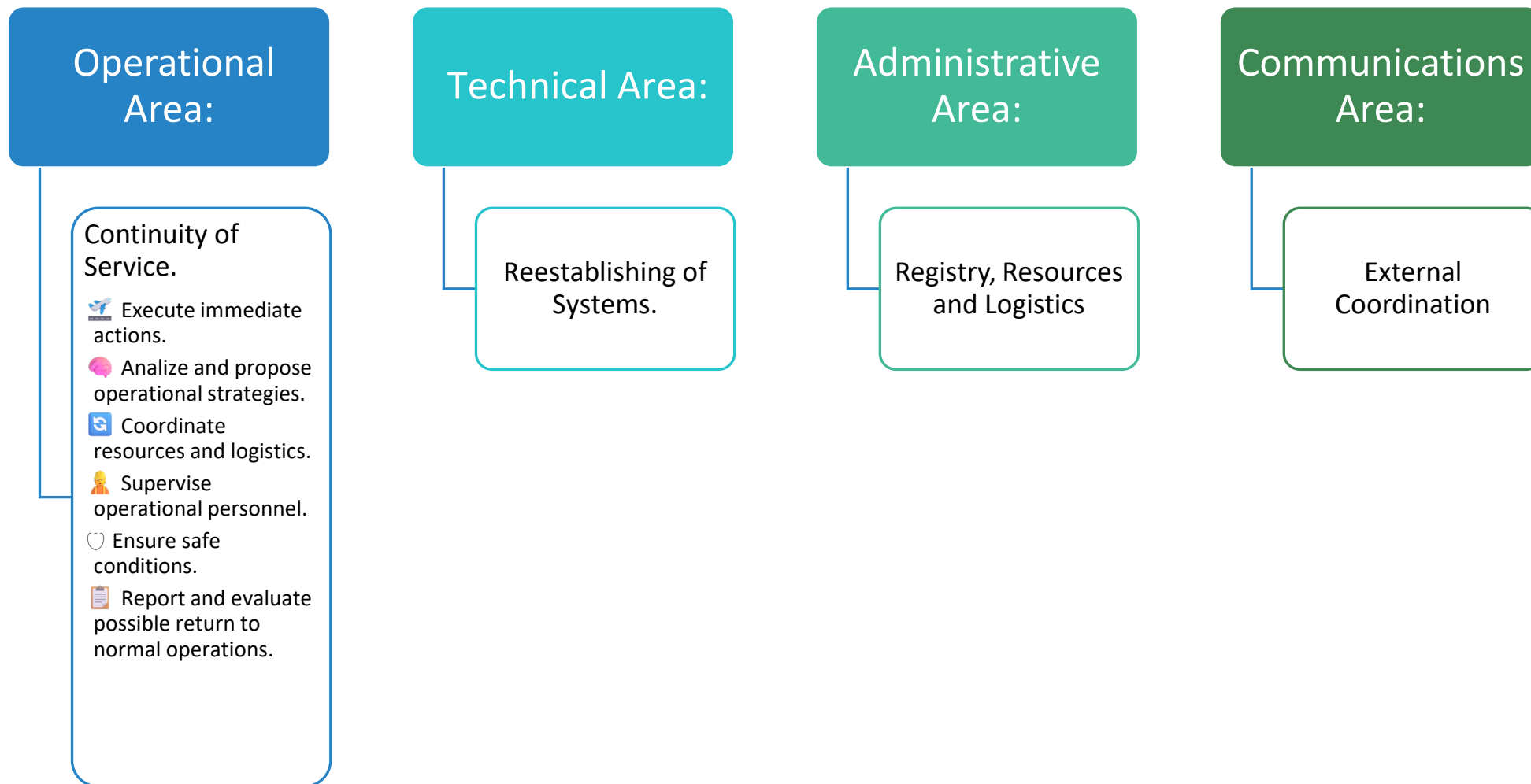


# Head of the Operations Area

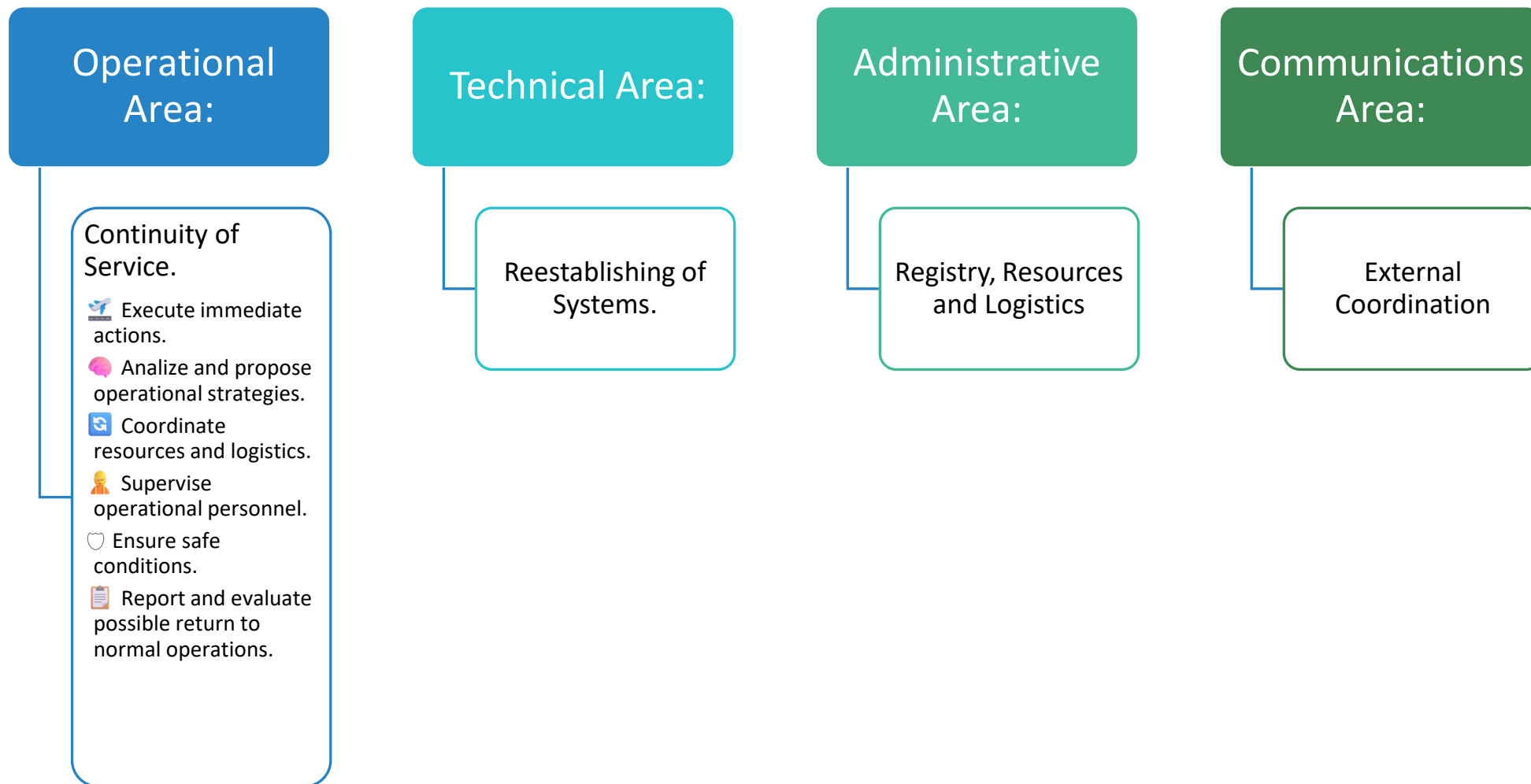




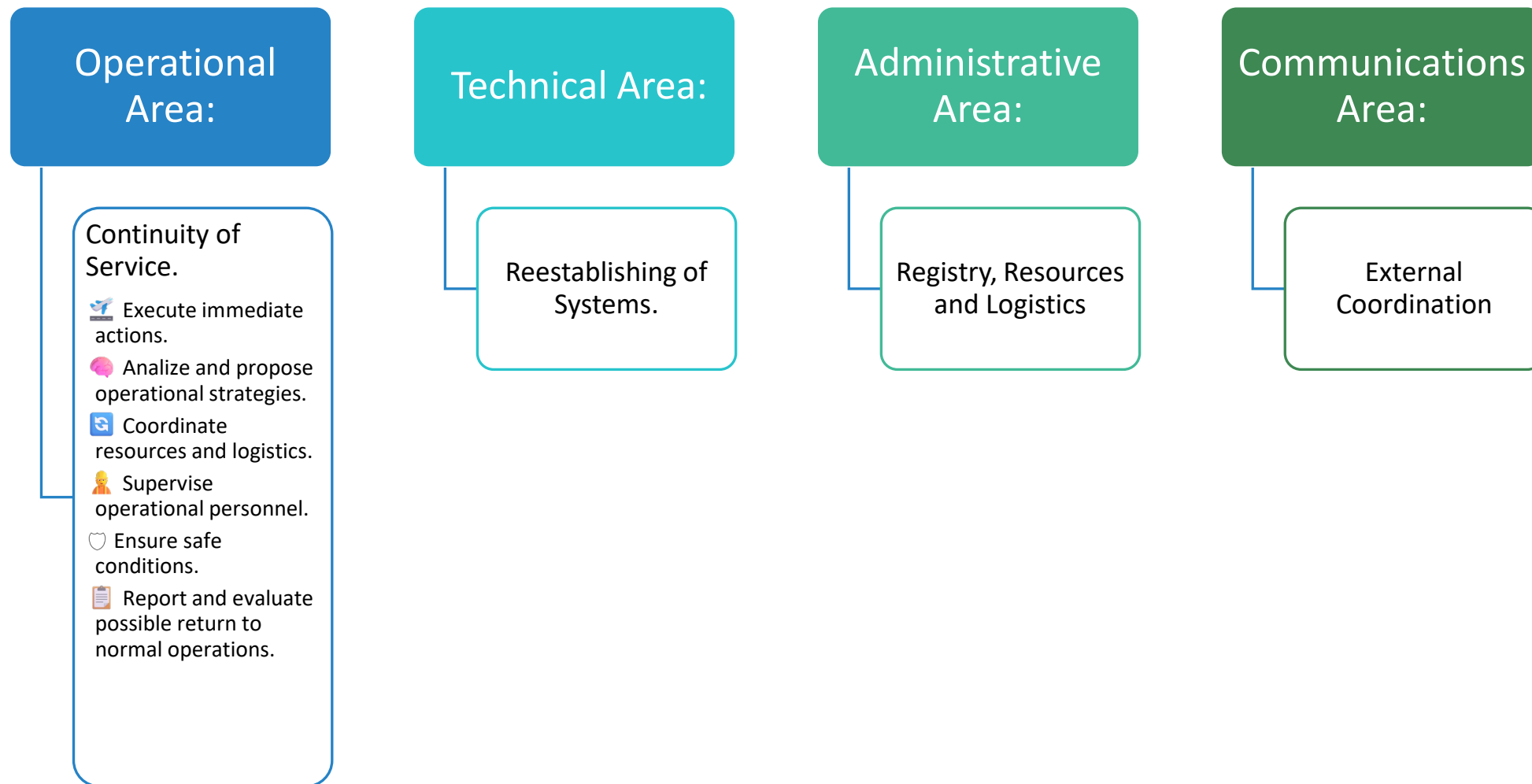
# Head of the Technical Area



# Head of the Administrative Area



# Head of the Communications Area



## Team Resource Management (TRM)

- It is a management and training approach that seeks to optimize the performance of operational teams in complex environments such as air traffic services.
- It is based on the principle that collective team effectiveness is as important as individual competence.

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# Team Resource Management

## TRM

### **Application in the ATS Environment**

In the context of an ANSP, TRM promotes effective coordination between air traffic controllers, supervisors, technical staff, managers, and other key stakeholders.

It becomes particularly relevant during:

- Normal operations with high traffic density
- Contingency situations or service degradation
- Operational disruption events (system failures, ATC-ZERO, etc.)

### **Final Objective**

Ensure operational continuity and safety through the team's synergistic work, utilizing all available resources: human, technological, and procedural.

# Team Resource Management

## TRM







Principles established by ICAO:

- TRM seeks to minimize errors by forming the team as an operational unit.
- It is an integral part of the Human Factors and Safety Management (SMS) approach.

ICAO promotes training on:

- Multidisciplinary Teams
- Periodic training with an emphasis on real-world operations
- Collective competency assessment

Non-Technical Competencies Developed by the TRM:

-  Clear and Effective Communication
-  Shared Situational Awareness
-  Team Decision-Making
-  Shared Leadership and Follow-up
-  Stress and Workload Management
-  Error Management and Operational Resiliency

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# Team Resource Management

## TRM

### **Benefits for ANSPs:**

- Improves collective response to contingencies
- Reduces ambiguities and errors in critical operations
- Promotes a culture of safety and open communication

### **Recommendations**

- Include TRM in ongoing training programs for HTM staff
- Conduct workshops and simulate real-life situations
- Evaluate team performance

## Summary

- ✓ Adopt a clear hierarchical structure for emergency response, establishing strategic, tactical, and operational levels, with clearly defined functions at each level.
- ✓ Formalize roles and responsibilities within a contingency committee, integrating personnel from operational, technical, administrative, and communications areas to facilitate coordination and timely decision-making.
- ✓ Incorporate the Team Resource Management (TRM) approach into staff training and ongoing development programs, with an emphasis on non-technical skills such as leadership, communication, decision-making, and stress management.
- ✓ Develop practical exercises and simulations to validate the effectiveness of contingency plans and team performance in real or simulated situations.
- ✓ Strengthen the organizational culture of preparedness and response, promoting inter-institutional cooperation, the evaluation of lessons learned, and the continuous improvement of emergency management processes.





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Thank You!