Joint ICAO/ACI workshop
on certification of aerodromes

ICAO

The Regulator's Perspective on SMS

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ICAO Aerodrome Safety Management System Requirements

Regulatory framework

✈ **All States will be required to establish a regulatory framework specifying the criteria for the certification of aerodromes**

✈ **Guidance material on what the regulatory framework should comprise can be found in the *Manual on Certification of Aerodromes* (issued 2001)**

Safety Management Systems

What does SMS mean ?

WHAT IS REQUIRED

Policy

Principles

HOW IS IT ACHIEVED

WHO IS RESPONSIBLE

Accountabilities

Procedures

ACTIONS TO BE TAKEN

Why

Safety Management Systems?

History (1)

Old System

✈ **Audits and inspections on hardware**

- Equipment
- Lay-out
- Visual aids

✈ **No audits and inspections on software**

- Responsibilities
- Procedures
- Organisation
- Quality
- Competence

History (2)

New system

∗ **Movement form hardware to software with focus on Safety Management Systems (SMS)**

∗ **SMS: management, competence, facilities and equipment, procedures, safety policy**

Safety management systems

What Service providers should do ?

Service providers should take a proactive and systematic approach to managing safety.

Example of a SARP

Mandatory Instruction Sign with a Location Sign

- Sign according to ICAO Annex 14
- Systematic approach to managing safety.

Bad example of a SARP

Mandatory Instruction Sign

RWY ahead

- **Sign not according to ICAO provisions**
- **No systematic approach to managing safety.**

Safety management system

HOW?

✴ **Such an approach is best implemented by means of a formalised Safety Management System (SMS).**

✴ **The use by industry of SMS is an increasingly necessary basis for fulfilling service-providers' safety responsibilities.**
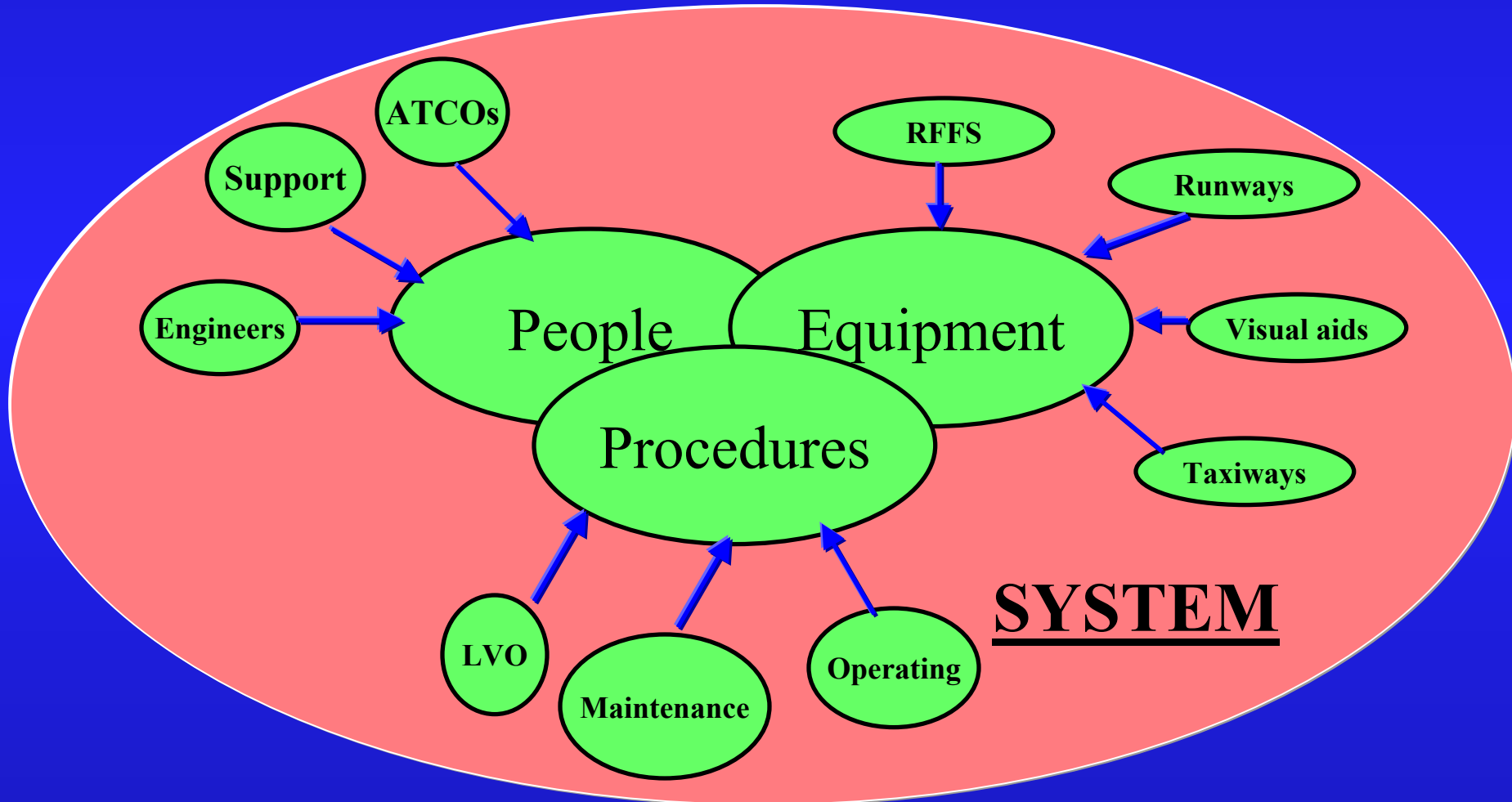
# *A Safety Management System*

=

SAFE OPERATIONS

=

Good Business

Safety management systems

SMS = A total system approach

People

Equipment

Procedures

ATCOs

Support

Engineers

RFFS

Runways

Visual aids

Taxiways

LVO

Maintenance

Operating

SYSTEM

Safety management systems and processes

An SMS describes how an organisation manages safety, interacts with external organisations and ensures that its policies and procedures remain fit for purpose.
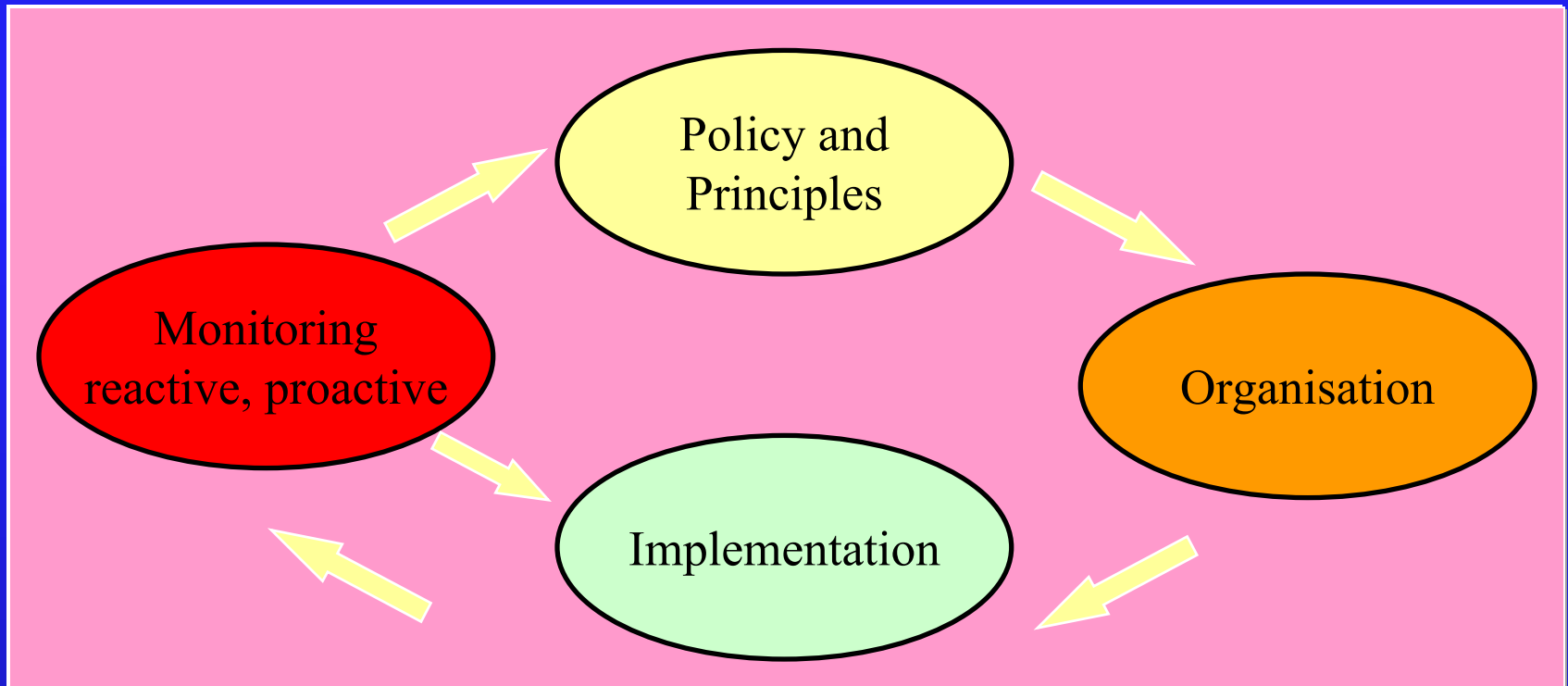
Quality means safety

Change in role and position

CAA:

∗ **Responsible for regulations**

∗ **Responsible for periodic or special on-site audits of the aerodrome SMS including verification of the aerodrome equipment and procedures**

Change in role and position

Aerodrome operator:

∗   **Responsible for ensuring safety**

∗   **Responsible for complying with SARPS**

∗   **Responsible for showing to the CAA that they are managing safety**

Technical analyses (1)

Doc 9774 App 3:

Technical analysis will provide justification for a deviation on the grounds that an equivalent level of safety can be attained by other means. It is generally applicable in situations where the cost of correcting a problem that violates a standard is excessive but where the unsafe effects of the problem can be overcome by some procedural means which offer both practical and reasonable solutions.

Safety is everybody's responsibility

Word of caution !!!!

* A Safety Management System is a tool with which to manage safety.

* It is not a substitute for compliance with regulation and having the necessary infrastructure, facilities, working procedures and competent personnel.

The Aerodrome Manual

The aerodrome manual (ADM)

∗   **One of the main requirements for certification is the production of an Aerodrome Manual**

∗   **The Aerodrome Manual is required to contain details of the operator's safety management programme**

Purpose ADM (1)

∗   **The aerodrome manual is a fundamental requirement of the certification process.**

∗   **It contains all the pertinent information concerning the aerodrome site, facilities, services, equipment, operating procedures, organization and management including the safety management system.**

Purpose ADM (2)

* **The information presented in the aerodrome manual should demonstrate that the aerodrome conforms to the certification standards and practices and that there are no apparent shortcomings which would adversely affect the safety of aircraft operations.**

* **The manual is a reference document and provides a checklist of aerodrome certification standards to be maintained and the level of airside services at the aerodrome.**

Purpose ADM (3)

* **Information provided in the aerodrome manual will enable the CAA to assess the suitability of the aerodrome for the aircraft operations proposed and to judge an applicant's fitness to hold a certificate.**

* **It is a basic reference guide for conducting site inspections for granting an aerodrome certificate and for subsequent safety inspections.**

Purpose ADM (4)

* **The aerodrome manual is a reference document agreed between the aerodrome operator and the CAA with respect to the standards, conditions and the level of service to be maintained at the aerodrome.**
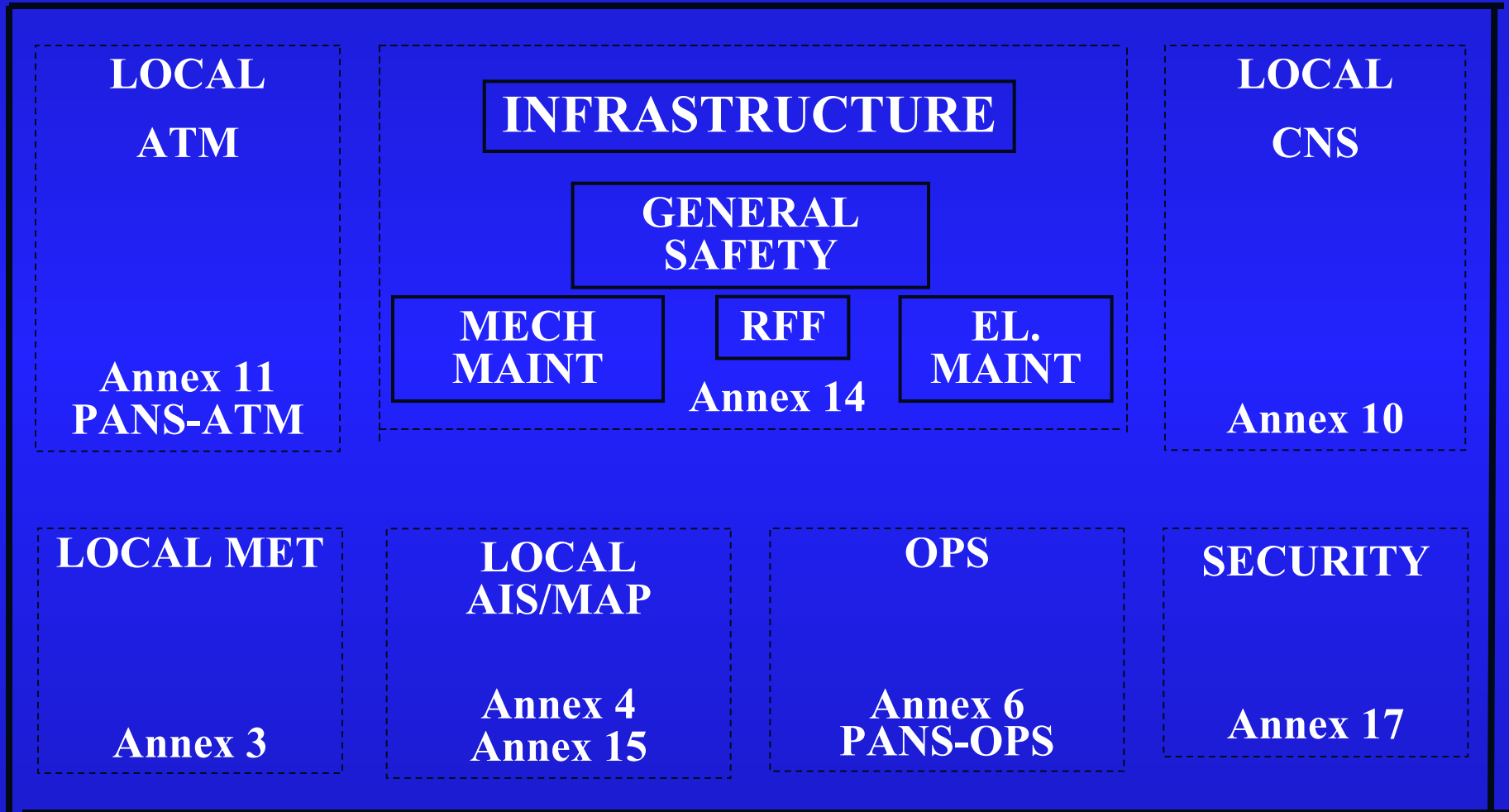
Oversight of Aerodrome Safety ADM

→ **The Manual on Aerodrome Certification recommends that States establish a Directorate of Aerodrome Safety to:**

  - Assess applications for aerodrome certification

  - Conduct periodic inspections and audits to ensure that safe operating conditions continue to exist

A living document ADM

➔ **Must be used by staff**

➔ **Feed-back necessary to improve**

➔ **Changes due to input from several sources**

  - SMS

  - Regulatory changes, CAA

  - Changes to Infrastructure or Procedures

➔ **Changes to be appoved/accepted by CAA**

The aerodrome within a total system concept

The aerodrome

LOCAL ATM

Annex 11
PANS-ATM

INFRASTRUCTURE

GENERAL SAFETY

MECH MAINT

RFF

Annex 14

EL. MAINT

LOCAL CNS

Annex 10

LOCAL MET

Annex 3

LOCAL AIS/MAP

Annex 4
Annex 15

OPS

Annex 6
PANS-OPS

SECURITY

Annex 17

CAA actions ADM

* The CAA must be satisfied that the aerodrome operator has the necessary competence and experience to comply with the relevant regulatory provisions, orders and directives of the CAA.

* The Manual is ONE key tool

CAA questions ADM (1)

* Does the Manual fulfil formal requirements?
* Does the table of content conform with Doc 9774 Appendix 1?
* What sections are not applicable (ex Cat II/III operations)
* Is the management properly described?
* Are all systems described in a convincing way?
* Are safety related procedures described convincingly?

CAA questions ADM (2)

* **Does the procedures reflect both the infrastructure and the competence of personnel?**

* **Are competence requirements and training plans described?**

* **Is it likely that the Aerodrome is capable to operate according to the manual?**
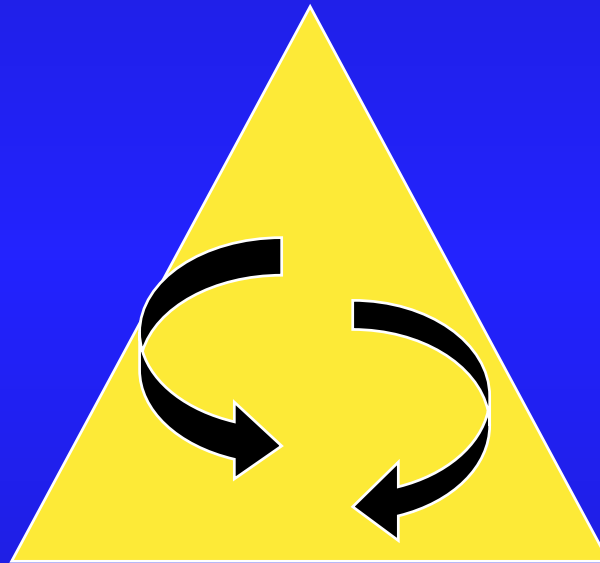
Roles and responsibilities

Terms

✈ **Service Provider:**

- Aerodrome, ATM unit, CNS unit, etc.

✈ **Operator:**

- Airline or other organisation operating aircraft

✈ **CAA:**

- The State entity vested with the necessary authority to ensure compliance with regulations
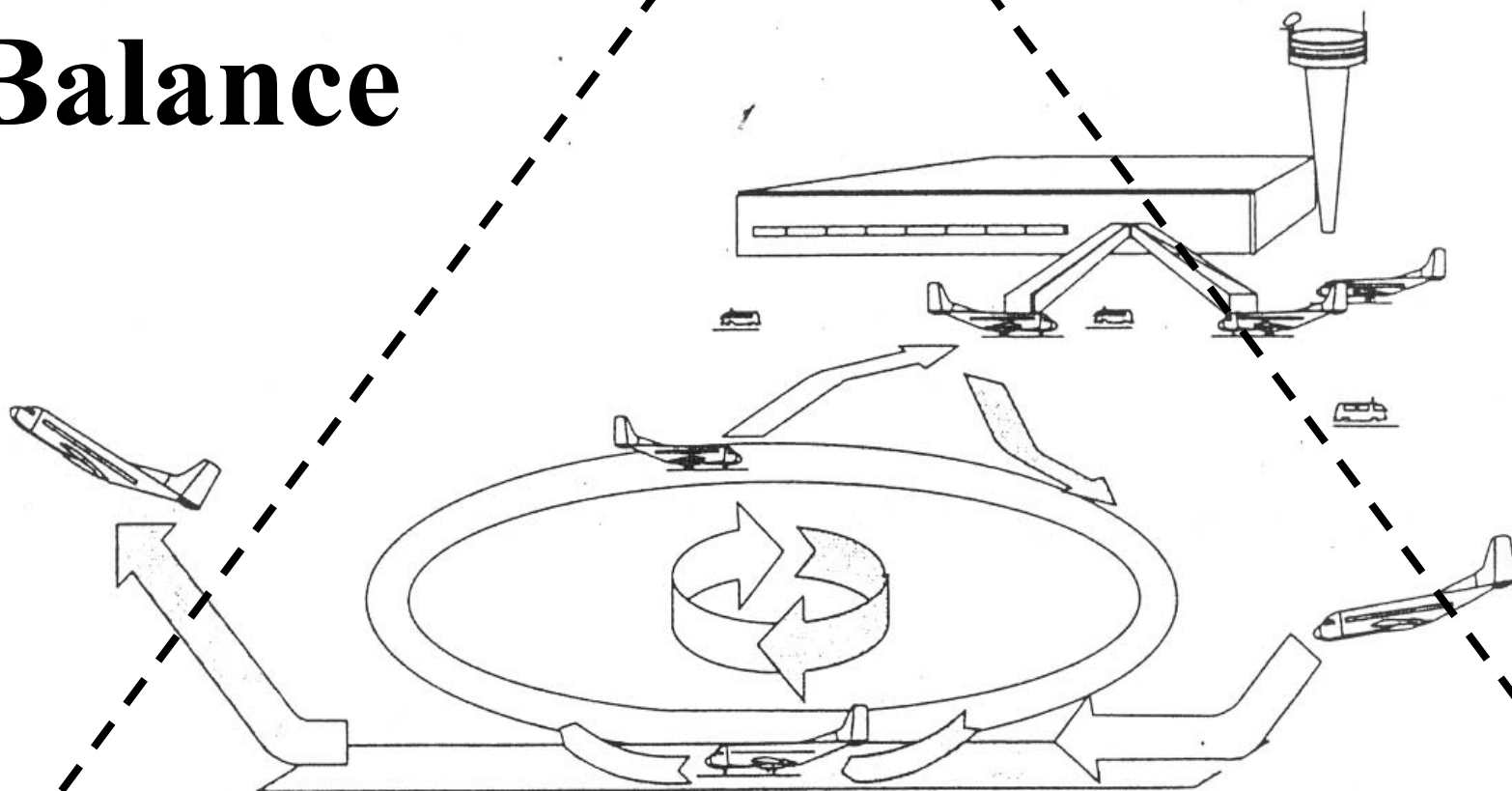
Golden triangle

The CAA

Service providers

Operators

Safety

Balance

ASMGCS

Basic tasks of the CAA

* Provide national regulations

* License objects, organisations or individuals

* Monitor licensed subjects for continued compliance

Task CAA: provide national regulations

* **ICAO Annexes directed to the State**

* **The contents of ICAO Annexes must be transferred into national regulations**

Safety regulations at national level

The National Safety Regulatory Authority :

→ Defines safety objectives and national regulatory policies

→ Sets regulations, in the form of requirements

→ Establishes procedures for :

- their uniform national application

- signifying compliance by regulated bodies/personnel

- exercising appropriate action in cases of non-compliance

→ Ensures consistency with international standards

The basis for regulation

Pyramid diagram (top to bottom): NATIONAL REGULATIONS / NAT. REQ. / INT'L STDs & REQ. / ICAO SARPs

Roles of the regulator

For national Aerodromes:

✈   **To agree key safety standards and principles**

✈   **To ensure national standards meet international**

✈   **To resist unacceptable shortcuts to safety**

✈   **To ensure service providers have appropriate safety measures in place (including SMS)**

✈   **To monitor overall safety performance**

✈   **To ensure implementation of remedial actions**

Roles of the regulated organisation

➢ **To have a safety policy and organisation**

➢ **To ensure staff safety-awareness**

➢ **To ensure adequate training and competence**

➢ **To verify externally-provided goods and services**

➢ **To have effective monitoring systems**

➢ **To detect changes which could affect safety, including deviations from standards**

➢ **To respond to changes in requirements**

Responsibilities of the aerodrome operator

∗ **To comply with ICAO Standards and Recommended Practices (SARPS)**

∗ **To have competent operational and maintenance personnel**

∗ **To execute proper maintenance**

∗ **To instruct vehicle drivers**

∗ **To have a Safety Management System (SMS)**

∗ **To ensure that ATC receive all relevant information about the status of systems**