

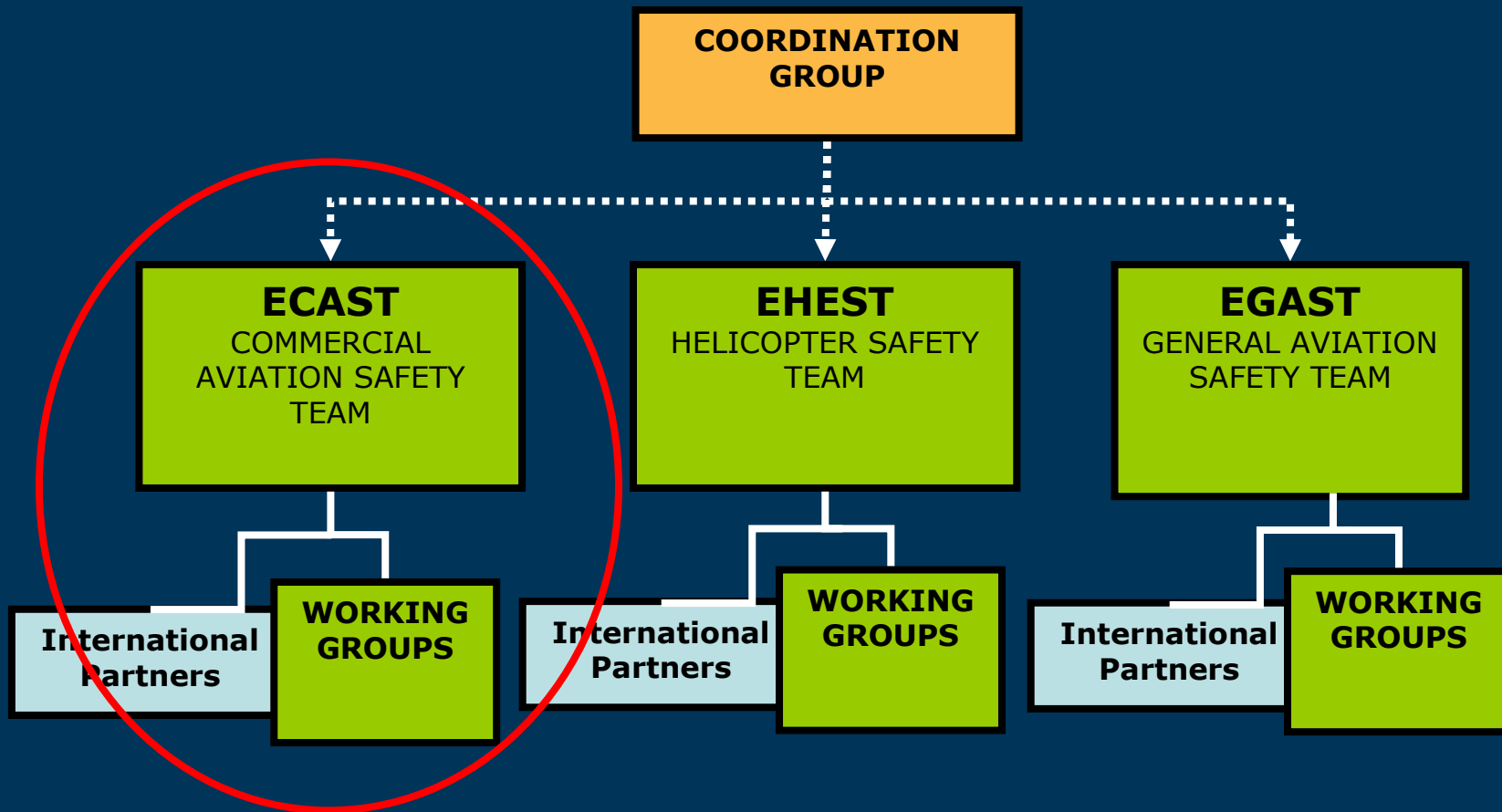


**CAST Meeting of 5 Feb 2009  
ALPA Headquarters, Herndon, VA**

## **SMS Guidance by ECAST**

**Presented by G. Guyot, Airbus**  
**[gguyot.sfo@aeroconseil.com](mailto:gguyot.sfo@aeroconseil.com)**

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# ECAST

## Priorities 2008-2009



1. Ground Safety
2. Runway Safety
<b>3. SMS &amp; Safety Culture</b>
4. Flight Crew Performance
5. Loss of Control (General)
6. Approach & Landing
7. Aviation System Complexity
8. Fire, Smoke and Fumes
9. Air-Ground Communications
10. Mid Air Collision
11. CFIT
12. Icing
13. Bird Strike
14. Loss of Control (Weight & Balance)
15. Air Navigation
16. Airworthiness (Maintenance & Design)
17. Maintenance (HF)
18. Automation

### 1. ECAST Ground Safety WG

- KO meeting 10 Feb 2009

### 2. Runway Safety

- Through coordination with the Flight Safety Foundation Runway Safety Initiative (RSI)

### 3. ECAST SMS / Safety Culture WG

- Launched in 2008  
*Focus of this presentation*

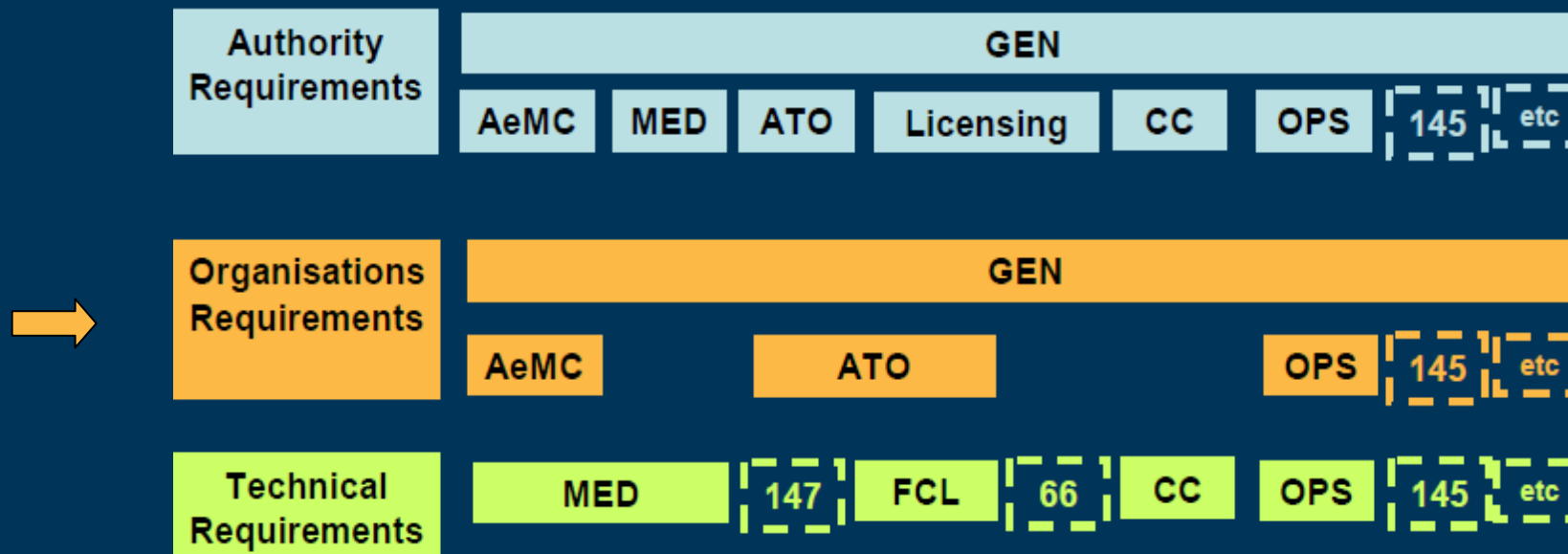
# **Review of draft SMS requirements**

**Ivan-David Nicolas**  
**Flight Standards Rulemaking**  
**EASA**

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# The Community requirements

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- **Organisation Requirements (NPA 22-2008) will provide legal grounds for the Safety Management Systems**

# Planning



**AR/OR  
Gen+FCL+MED**

**AR/OR  
OPS**

<b>Nov 08-Feb 09</b>	<b>Feb 09-May 09</b>
<b>Mar-May 2009</b>	<b>Jun-Aug 2009</b>
<b>Jun-Jul 2009</b>	<b>Sep-Oct 2009</b>

Then: “Comitology” Process (for the Implementing rules)

**Publication expected from May 2010**

# Requirements for management systems (OR.GEN.200a)

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- **An organisation shall establish and maintain a management system that includes:**
  - ★ **a safety policy;**
  - ★ **a process for identifying safety hazards and for evaluating and managing the associated risks;**
  - ★ **clearly defined lines of safety accountability throughout the organisation, including a direct accountability for safety on the part of senior management;**
  - ★ **personnel trained and competent to perform their tasks;**
  - ★ **a process for reporting and analysing hazards, incidents and accidents and for taking corrective actions to prevent their recurrence;**

# Requirements for management systems (OR.GEN.200a)

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- **An organisation shall establish and maintain a management system that includes:**
  - ★ **an organisation manual containing all management system processes, including a process for making personnel aware of their responsibilities and an amendment procedure;.**
  - ★ **a function to monitor compliance of the management system with the relevant requirements and adequacy of the procedures. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure corrective action as necessary; and**
  - ★ **any additional requirements that are prescribed in this Part.**

## **Requirements for management systems (OR.GEN.200b)**

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- The management system shall correspond to the size, nature and complexity of the activities, and the hazards and associated risks inherent in these activities.**

# Acceptable Means of Compliance to Management system requirements

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- **Adapted to size of organisations**
- **Based on ICAO documentation**
- **Covering**
  - ✦ **Safety policy**
  - ✦ **Safety risk management**
  - ✦ **Safety assurance**
  - ✦ **Organisation and accountabilities**
  - ✦ **Training and communication on safety**
  - ✦ **Occurrence reporting scheme**
  - ✦ **Organisation manual**
  - ✦ **Compliance monitoring system**

# The Safety Manager

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- **SMS Focal Point**

- **FUNCTIONS:**

- ★ **i. manage the implementation plan on behalf of the accountable manager;**
- ★ **ii. facilitate hazard identification, risk analysis and management;**
- ★ **iii. monitor corrective action to ensure their accomplishment;**
- ★ **iv. provide periodic reports on safety performance;**
- ★ **v. maintain safety documentation;**
- ★ **vi. plan and organise staff safety training;**
- ★ **vii. provide independent advice on safety matters;**
- ★ **viii. advise senior managers on safety matters;**
- ★ **ix. assist line managers;**
- ★ **x. oversee hazard identification systems;**
- ★ **xi. be involved in occurrence / accident investigations;**
- ★ **xii. monitor compliance**

# **ECAST SMS WG**

**Michel Masson**  
**Safety Analysis and Research**  
**EASA**

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# Mission

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- Develop support materials for topics where guidance was mostly needed by the industry and the NAAs
- Best practice materials, no legal status
- All deliverables to be published on 31 March on:
  - ★ [www.easa.europa.eu/essi](http://www.easa.europa.eu/essi)
  - ★ [www.skybrary.aero](http://www.skybrary.aero)

# Topics

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- Support materials for the following NPA 2008-22c **AMCs**:
  - ★ AMC 1 MS.B.001(a)(2) Safety Risk Management – Large and Small Organisations
  - ★ AMC 1 MS.B.001(a)(4) Management System – Safety Management System – Organisation and accountabilities – Large and Small Organisations

# 4 Work Packages

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WPs	WP Leaders
WP 1 - Review current SMS/Safety Culture initiatives and materials	J. Beaufays, EUROCONTROL, and M. Piers, NLR
WP 2 - Identify best practices and examples of organisations	S. Clark NATS, with support from P. Sorensen, IATA, and V. Gray, UK CAA
WP 3 - Hazard Identification	I. Maragakis, EASA and D. Prior, easyJet
WP 4 - Risk Assessment	J. Nisula, AIRBUS, <i>Chair of ARMS</i>

# ECAST SMS WP 1 – Review of SMS and Safety Culture materials

➤ References to existing Regulations and Materials related to (Safety) Management Systems

➤ Safety Management Best Practices in ATM, Airline and Airport Operations

➤ Published on SKYbrary

➤ Safety Management page:

[http://www.skybrary.aero/index.php/Category:Safety\\_Management](http://www.skybrary.aero/index.php/Category:Safety_Management)

➤ Contact: [jacques.beaufays@eurocontrol.int](mailto:jacques.beaufays@eurocontrol.int)



# ECAST SMS WP 1 – Review of SMS and Safety Culture materials

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- **Consolidated Safety Culture definition and framework developed by NLR**
  - ★ **Framework of frameworks**
  - ★ **6 mutually exclusive components, expressed in measurable indicators:**

- 1. Commitment to safety**
- 2. Behaviour with respect to safety**
- 3. Awareness**
- 4. Adaptability**
- 5. Information**
- 6. Justness**

- **Contact: [mpiers@nlr-atsi.nl](mailto:mpiers@nlr-atsi.nl)**
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# ECAST SMS WP 2 – Best practices and examples of organisations

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- Practical guidance on organisation for safety
  - Method:
    - ✦ Questionnaire to airlines
    - ✦ Literature review
  - Deliverables:
    - ✦ Golden Rules
    - ✦ Example of organisational charts for small, medium and large organisations
  - Contacts: [stephen.clark2@nats.co.uk](mailto:stephen.clark2@nats.co.uk)  
[sorensenp@iata.org](mailto:sorensenp@iata.org)
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# Results of the questionnaire

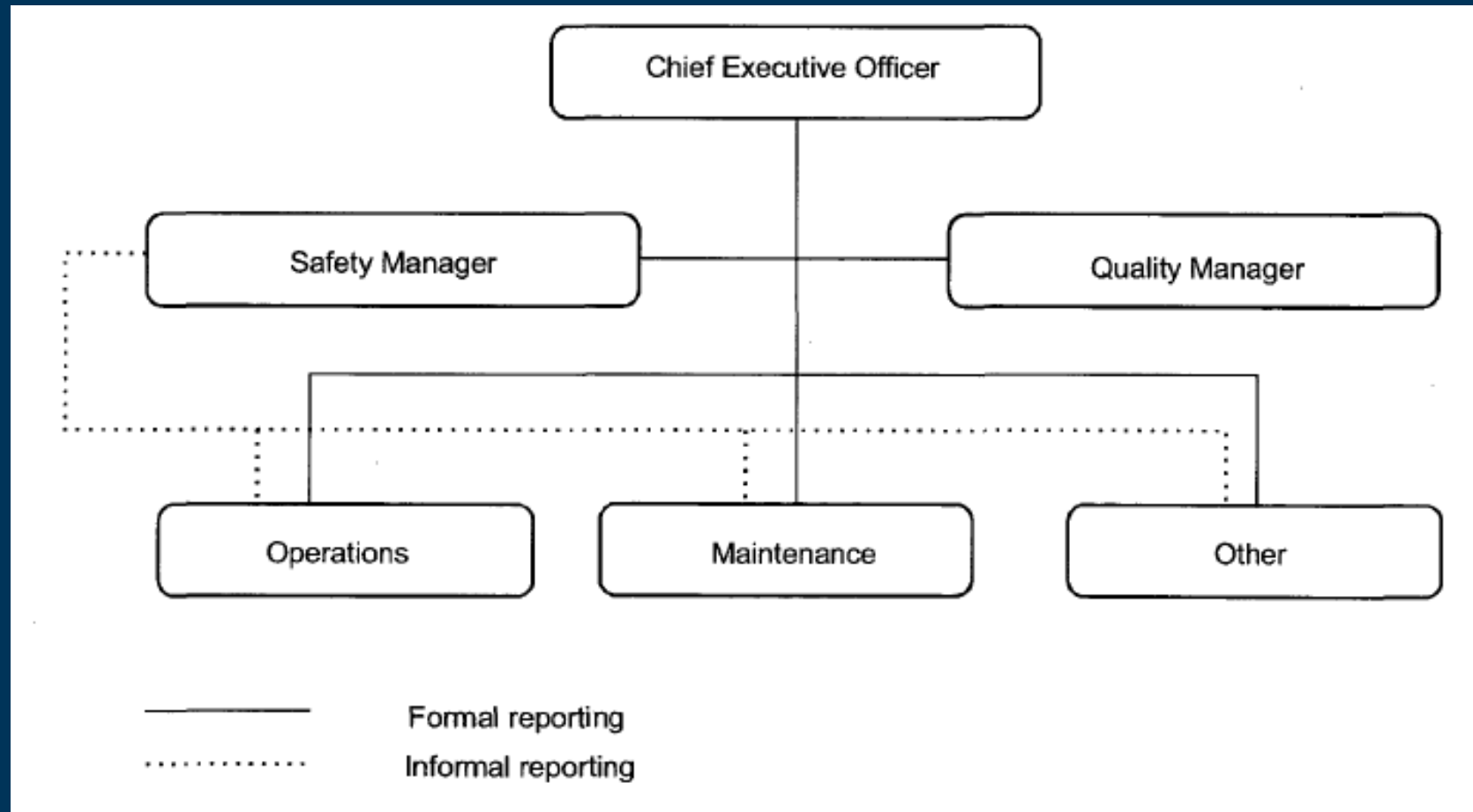
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- The role of the **Accountable Manager** as the person ultimately responsible for safety appears to be the norm. In some cases the Accountable Manager is also the Chief Operating Officer or Chief Executive Officer.
- The **Safety Departments**, where they exist, all appear to be organised to be separate from operational delivery.
- There appeared to be a general lack of any formal arrangements for **communications** between the Safety Department and the Accountable Manager.
- No respondent appeared to have a fully functional **Risk Management Programme**.

# Literature review

## ICAO SMM First edition 2006

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# Literature review

## ICAO SMM Second Edition (Draft)



# Literature review

## IATA Integrated Management System

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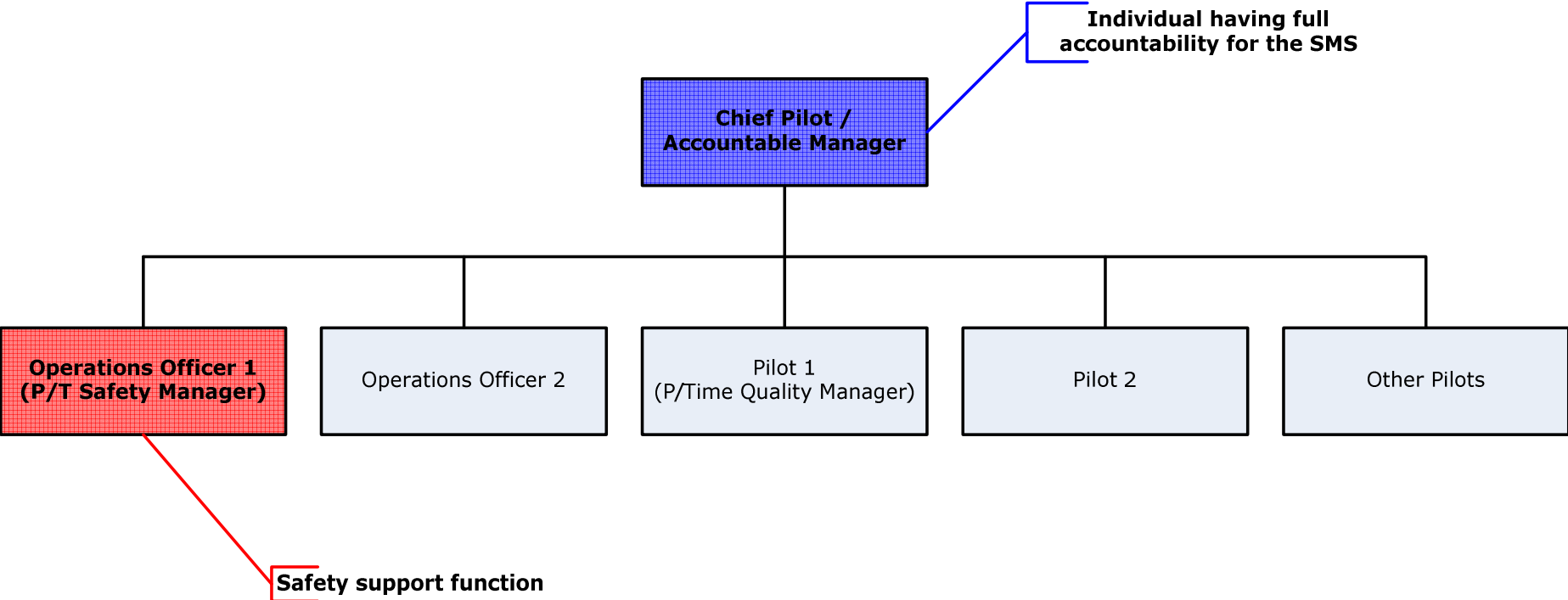


# 'Golden Rules'

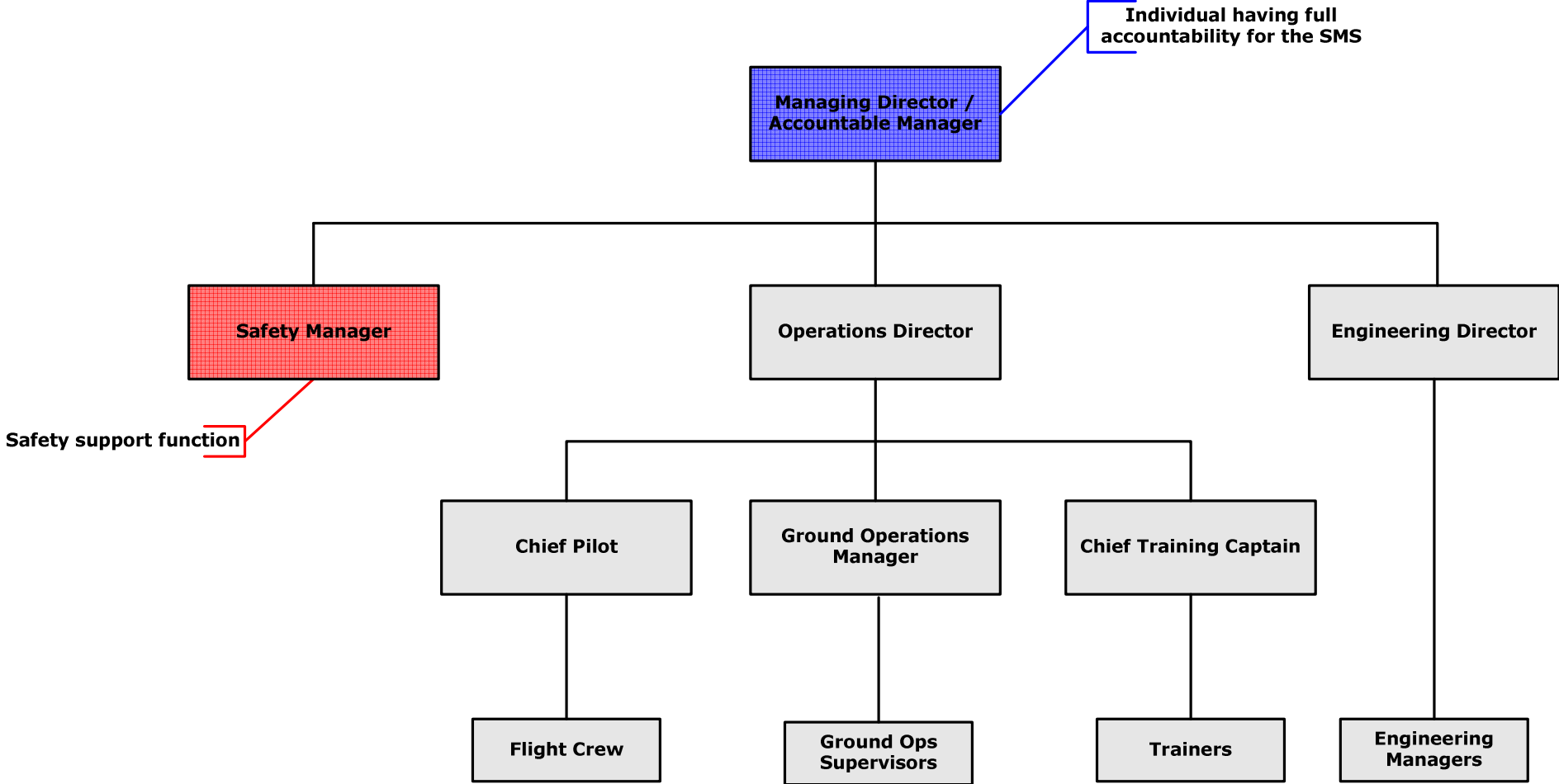
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- **1. Full Safety Accountability at the Top (the Accountable Executive – e.g. Chief Executive Officer)**
  - **2. Supported by independent Safety Support Function with full authority from the Top**
  - **3. Individuals within the Safety Support Function should have respect and influence**
  - **4. Formal communications from the Top to the Safety Support Function**
  - **5. Actions necessary to support the SMS should be managed throughout the organisation**
  - **6. Safety accountabilities and responsibilities should be documented and understood by the incumbents**
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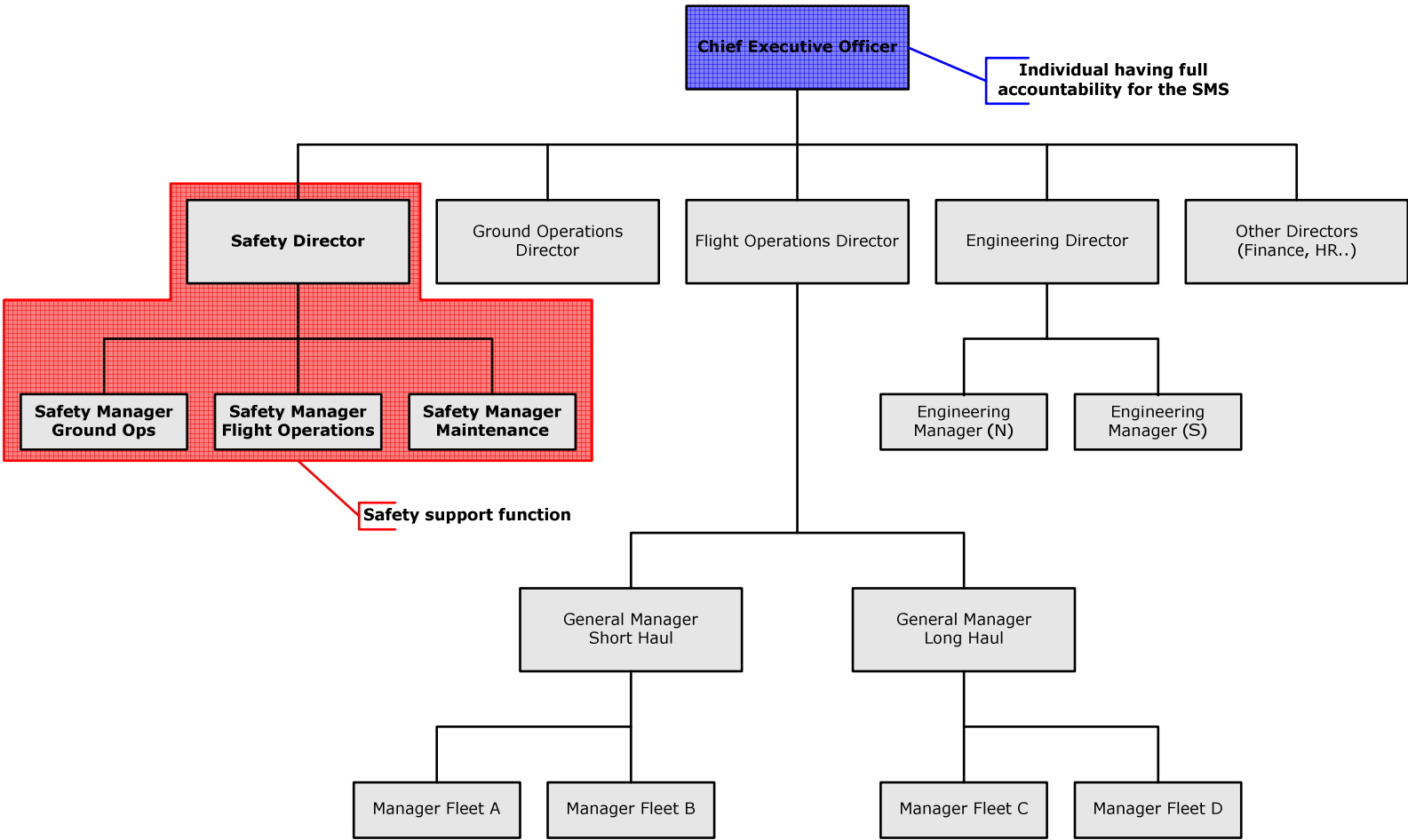
# Example – Small organisation



# Example – Medium organisation



# Example – Large organisation



# ECAST SMS WP 3 – Hazards Identification

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*Where guidance is probably most needed (Part 1)*

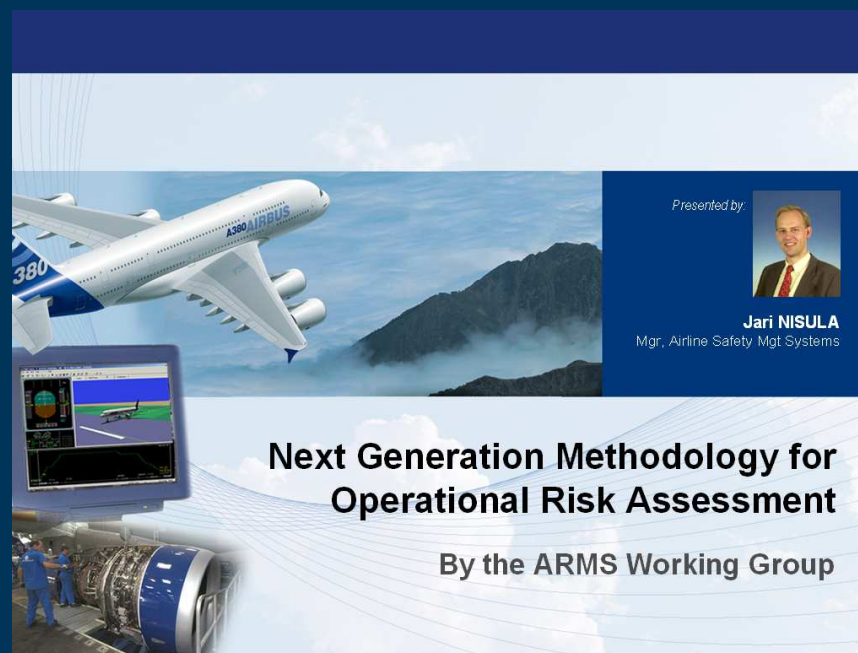
- **Guidance on Hazards Identification**
  - **Simple, concise and useful material and references on:**
    - ★ **Definitions (hazard, risk, etc.);**
    - ★ **Bow Tie representation used as concepts organiser**
    - ★ **Hazards identification process**
    - ★ **Methods for hazards identification**
    - ★ **Tools and Techniques: Brainstorming, HAZOP, checklist, FMEA, SWIFT, Dynamic methods, and the FAST method for identification of future hazards**
    - ★ **Compatible with ARMS (*next slide*) and other Risk Assessment methodologies**
  - **Contact: [ilias.maragakis@easa.europa.eu](mailto:ilias.maragakis@easa.europa.eu)**
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# ECAST SMS WP 4 – Risk Assessment

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## *Where guidance is probably most needed (Part 2)*

- ECAST SMS WG adopted the work of ARMS on Risk Mgt
- New methodology
  - ✦ Developed by the industry
  - ✦ Compatible with ICAO
  - ✦ Publicly available
- Presented in EASS 09: [EASS 09 pre-agenda](#)
- Contact: [jari.nisula@airbus.com](mailto:jari.nisula@airbus.com)



# European Commercial Aviation Safety Team



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# ***Annex***

# Requirements for personnel (OR.GEN.210)

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- The organisation shall appoint an **accountable manager**, who has the corporate authority for ensuring that all activities can be financed and carried out in accordance with the applicable requirements.
- A person or group of persons shall be nominated with the responsibility of ensuring that the organisation is always in compliance with the applicable requirements. Such person(s) shall be ultimately responsible to the accountable manager.
- The organisation shall have sufficient appropriately qualified staff for the planned tasks and activities.
- The organisation shall maintain appropriate experience, qualification and training records to show compliance with paragraph (c) above.
- The organisation shall ensure that all staff is aware of the rules and procedures relevant to the exercise of their duties.

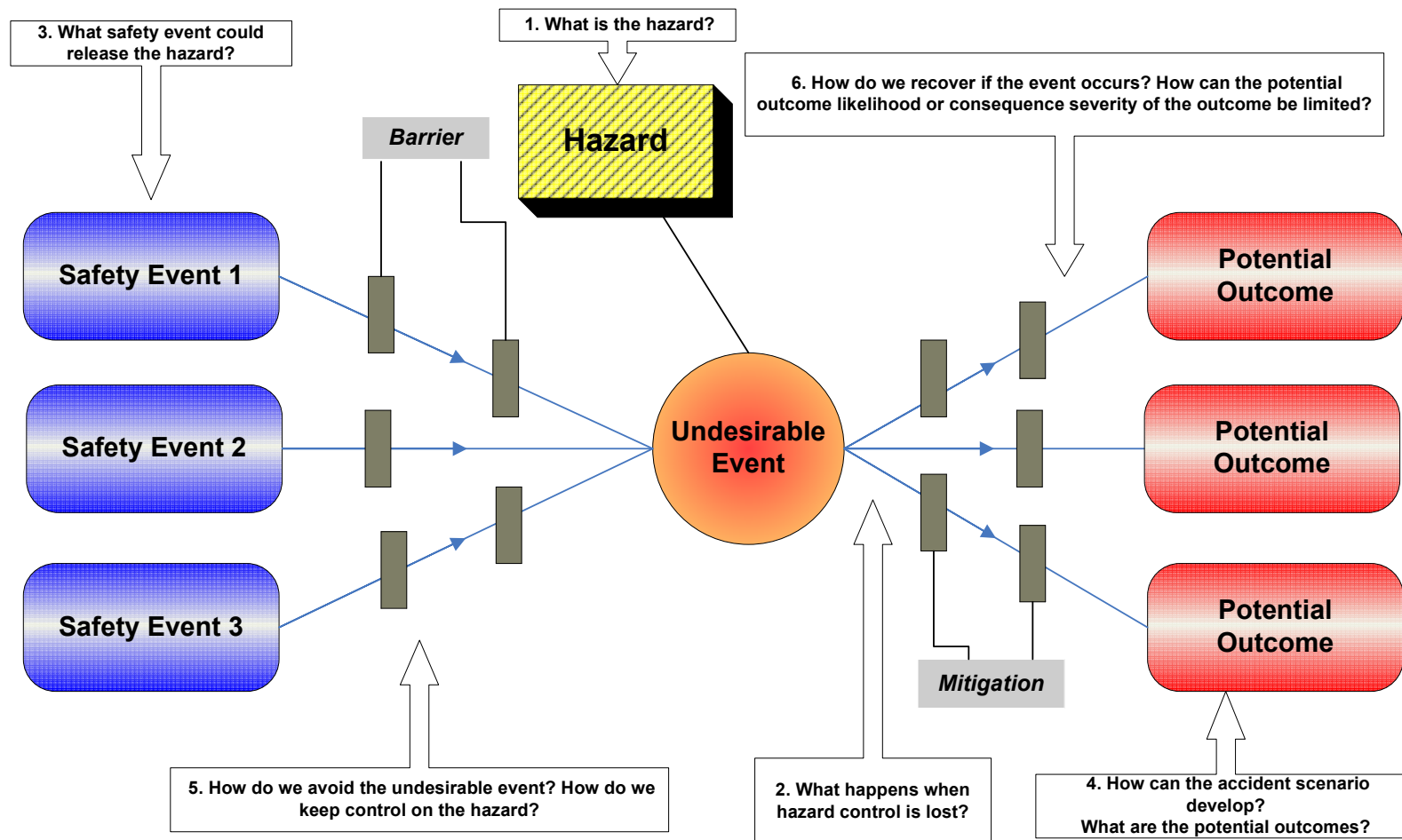
# ECAST Definition of Safety Culture

## - WP1

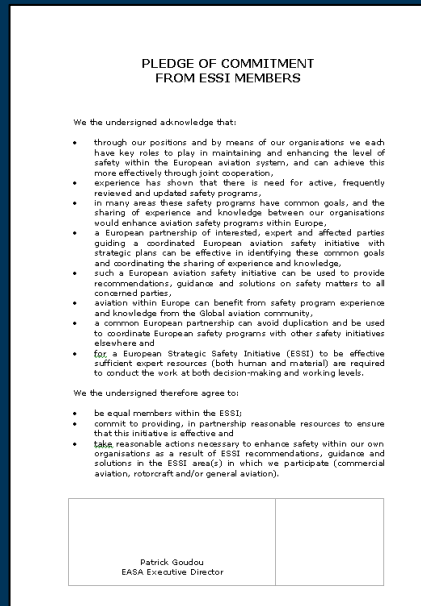
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- **Safety Culture** is the set of enduring values and attitudes regarding safety, shared by every member of every level of an organisation.
  - **Extended definition: Safety Culture** is the set of enduring values and attitudes regarding safety issues, shared by every member of every level of an organisation. Safety Culture refers to the extent to which every individual and every group of the organisation is aware of the risks and unknown hazards induced by its activities; is continuously behaving so as to preserve and enhance safety; is willing and able to adapt itself when facing safety issues; is willing to communicate safety issues; and consistently evaluates safety related behaviour.
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# Bow Tie representation Used in WP3 as 'concepts organiser'



# ESSI/ECAST Pledge Signatories



- **Airbus S.A.S.**
- **Aircraft Engineers International (AEI)**
- **Alenia Aeronautic S.p.A.**
- **Boeing Commercial Airplanes**
- **Civil Aviation Authority UK**
- **DGAC France**
- **Dutch Ministry of Transport, Public Works and Water Management**
- **Embraer - Empresa Brasileira de Aeronáutica**
- **Ente Nazionale Aviazione Civile Italy**
- **European Transport Safety Council**
- **European Aviation Safety Agency (EASA)**
- **Federal Office of Civil Aviation Switzerland**
- **Fokker**
- **International Air Transport Association (IATA)**
- **International Federation of Airworthiness (IFA)**
- **National Aerospace Laboratory (NLR)**
- **Rolls-Royce plc**
- *More than 50 member and partner organisations*