

Safety Management Systems

FAA Flight Standards and Industry Roles in the AVSSMS

Presented to: Air Charter Safety Foundation

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Federal Aviation
Administration



Four Important Words

- **Processes**
 - Things people do to...produce outputs
- **Systems**
 - SHELL – system components
 - Attributes – shaping the processes
- **Conditions**
 - Workplace conditions
 - Latent conditions
- **Confidence**
 - Objective of assurance

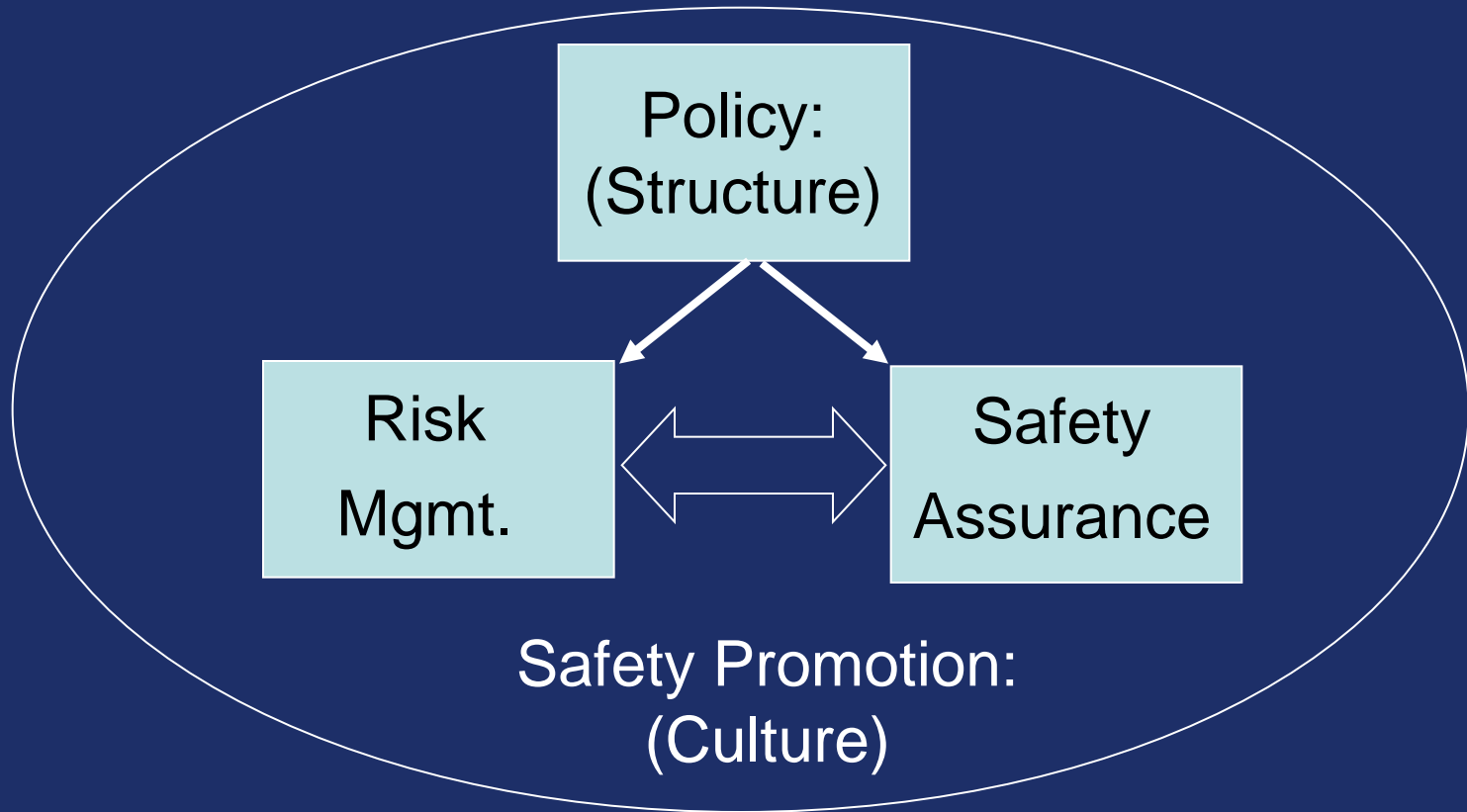


System Safety

- "The application of special **technical** and **managerial** skills in a systematic, forward looking manner to **identify and control hazards** throughout the life cycle of a project, program, or activity" (Roland & Moriarty, 1990)
- Traditional approach concentrates on **technical**
- SMS adds emphasis on **management** elements

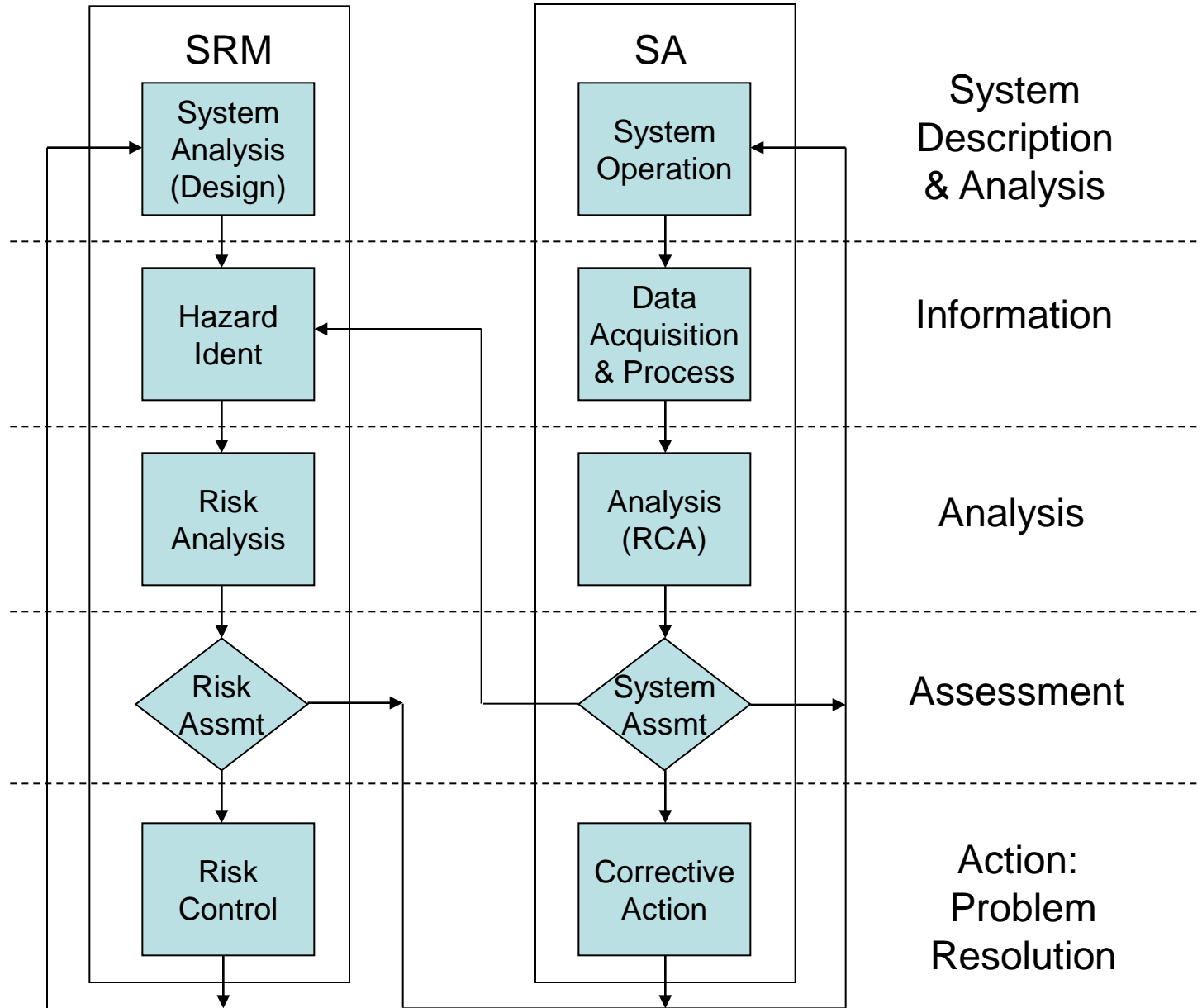


SMS Components (“Four Pillars”)

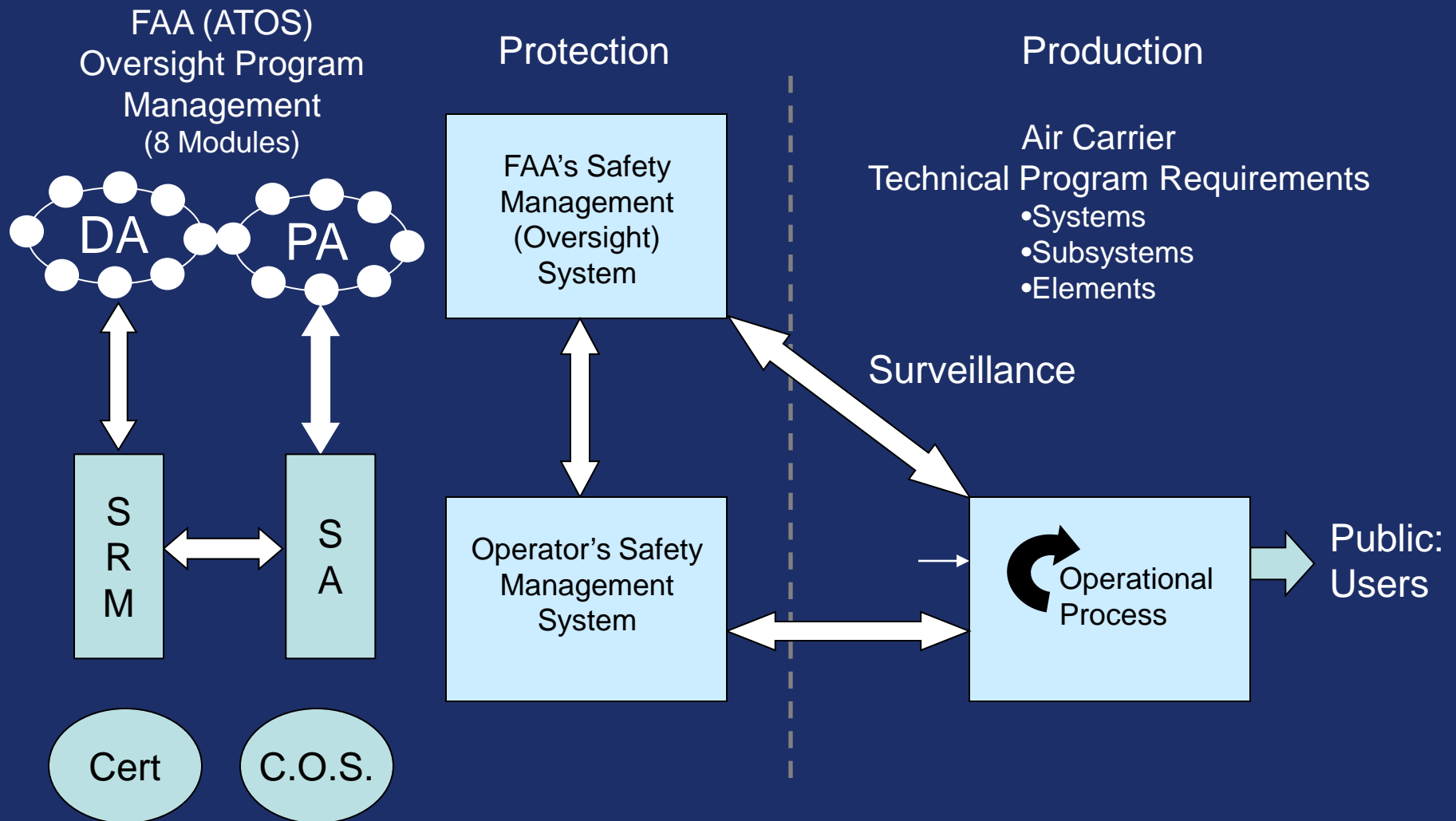


Design

Performance



Oversight and SMS

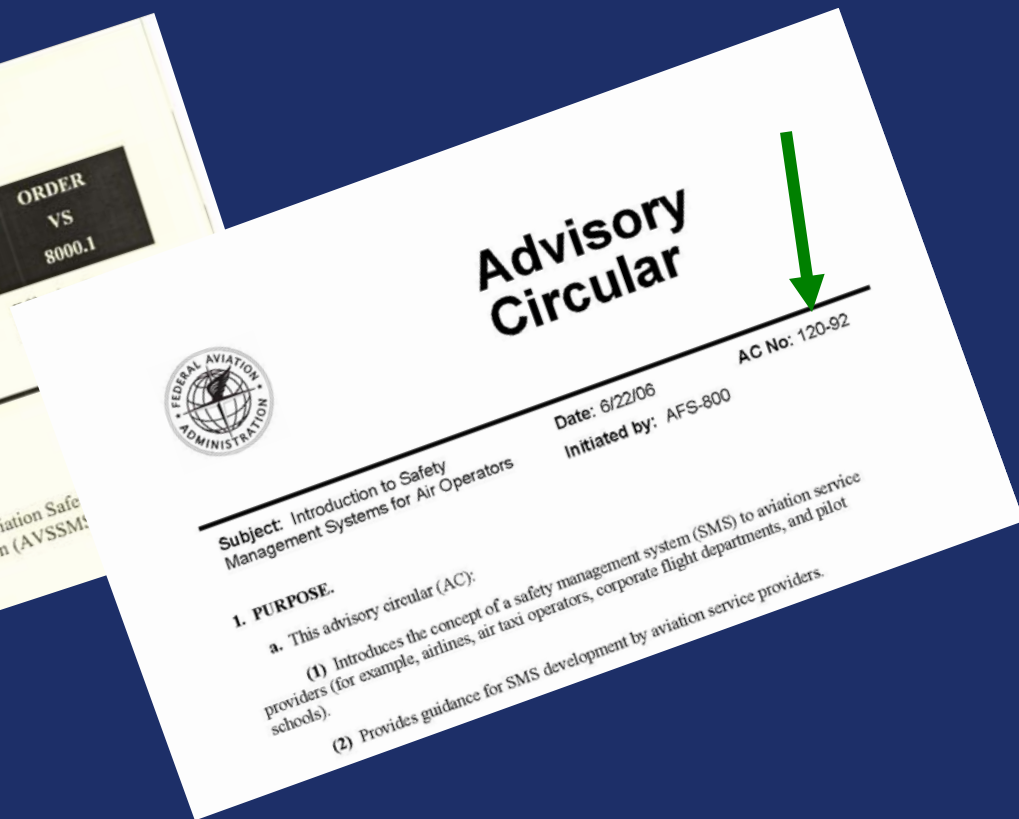
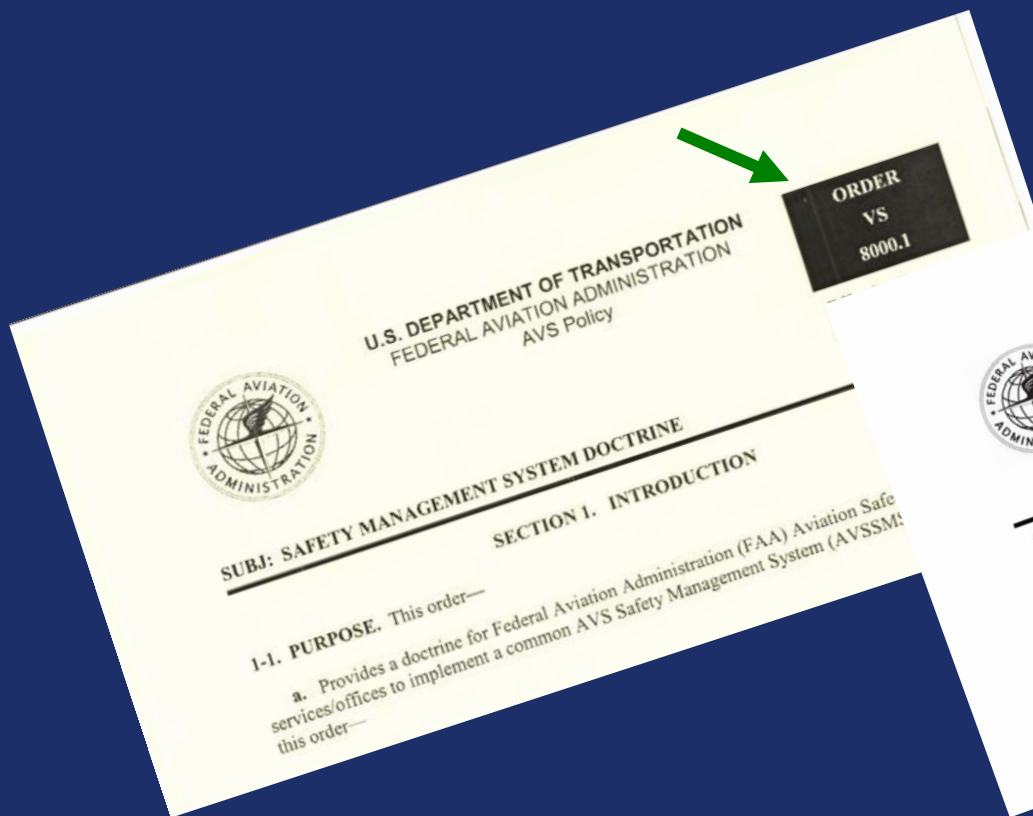


Role of Regulations as Risk Controls

- **Rulemaking (FAA SRM)**
 - Identified **Hazard** in the Aviation System
 - Assessment of risk
 - **Risk Control**: Regulation = limits of acceptability
- **Compliance (Operator's SRM)**
 - Operator's Program **Design**: Risk Acceptance
 - **Design Assessment** (FAA)
 - Certification functions: Administrative action
- **Continuing Operational Safety:**
 - **Performance Assessment:**
 - Safety Assurance (Operator)
 - Surveillance (FAA)



SMS Documents and Standards



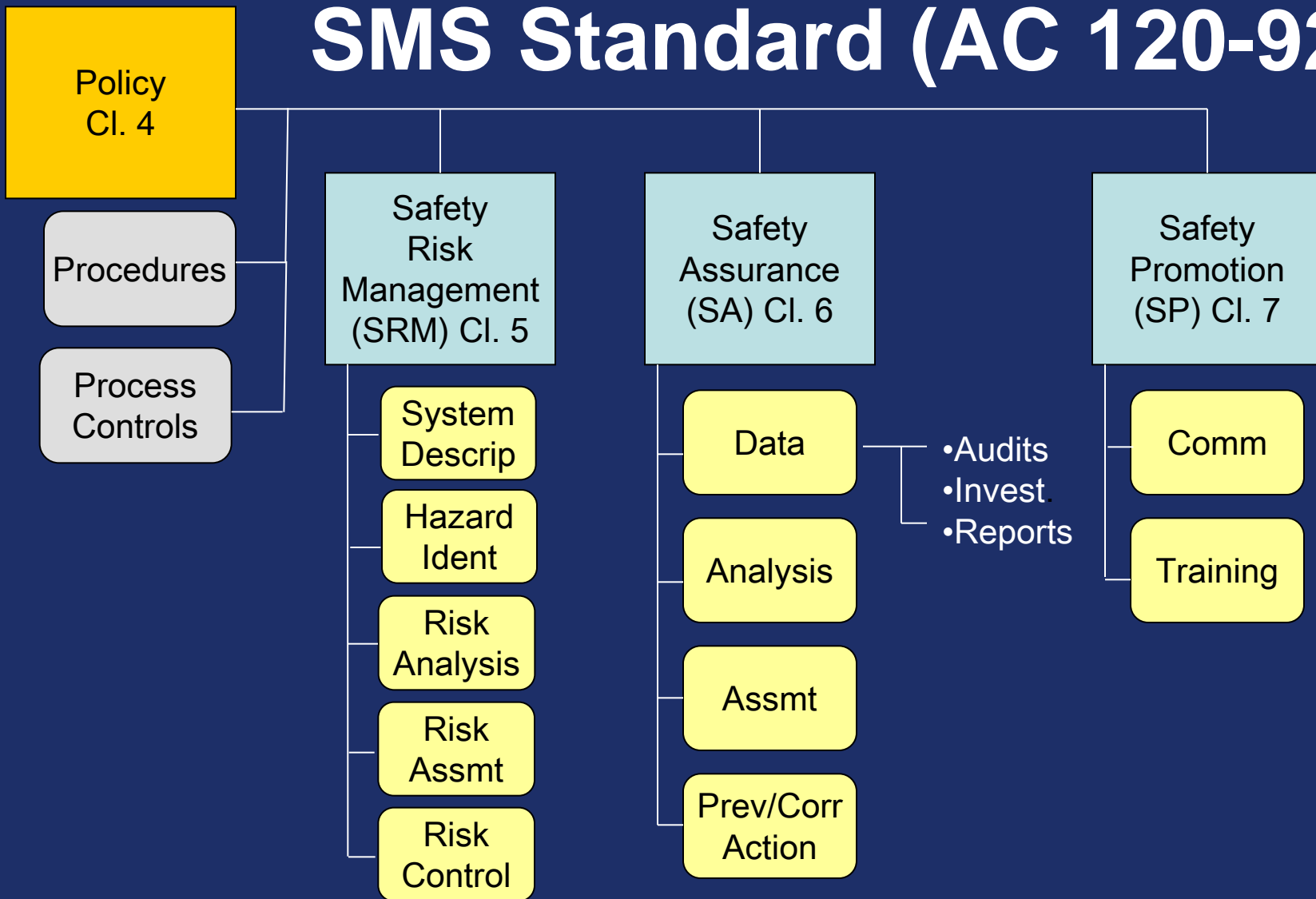
VS 8000.1 & AC 120-92

SMS Guidance and Tools

- **SMS Standard: AC 120-92 Appendix 1**
 - ISO 9001/14001 Format
- **Gap Analysis/Audit Summary Tool**
 - Specific objectives for each subclause of the standard
- **Detailed assessment tools**
 - Format of ATOS SAIs
- **SMS Guidebooks**
 - Format of ISO 9004
- **AC 120-XX (Draft) Voluntary Implementation**



SMS Standard (AC 120-92)



The International Picture

Current ICAO safety management requirements

- Annex 11 - Air Traffic Services
- Annex 11 - Aerodromes
- Annex 6 - Operation of Aircraft
- Annex 6 - Maintenance of Aircraft



The International Picture

Additional Proposed ICAO safety management requirements

- Annex 1 – Aircrew licensing (aeromedical and flight training)
- Annex 8 - Manufacturers
- State Safety Program
- Frameworks and additional detail for both CAAs and service providers



ICAO Compliance

- Annex 6, 11, 13, 14: Expected: 19 November 2009
- Annex 1, 8: Expected: 18 November 2010
- States shall establish a **safety programme**, in order to achieve an **acceptable level of safety** in:
 - The operation of aircraft
 - The maintenance of aircraft
 - The provision of air traffic services
 - Aerodrome operations



ICAO: The components of SMS

- ① Safety policy and objectives
- ② Safety risk management
- ③ Safety assurance
- ④ Safety promotion



The ICAO Framework: elements of SMS

① Safety policy and objectives

1.1 – Management commitment and responsibility

1.2 – Safety accountabilities of managers

1.3 – Appointment of key safety personnel

1.4 – SMS implementation plan

1.5 – Coordination of emergency response planning

1.6 – Documentation

② Safety risk management

2.1 – Hazard identification processes

2.2 – Risk assessment and mitigation processes

The elements of SMS

3 Safety assurance

3.1 – Safety performance monitoring and measurement

3.2 – The management of change

3.3 – Continuous improvement of the SMS

4 Safety promotion

4.1 – Training and education

4.2 – Safety communication

FAA Rulemaking Effort

- **Part 121 Rulemaking Project Record (RPR) opened Nov. 2006**
- **Project cancelled Jan. 2008**
- **Project team commissioned to create integrated SMS Rule for all CFR parts**
 - Objective: harmonization of requirements
 - Strategy is being formulated
 - ARC is a possibility



SMS Voluntary Implementation & Pilot Project

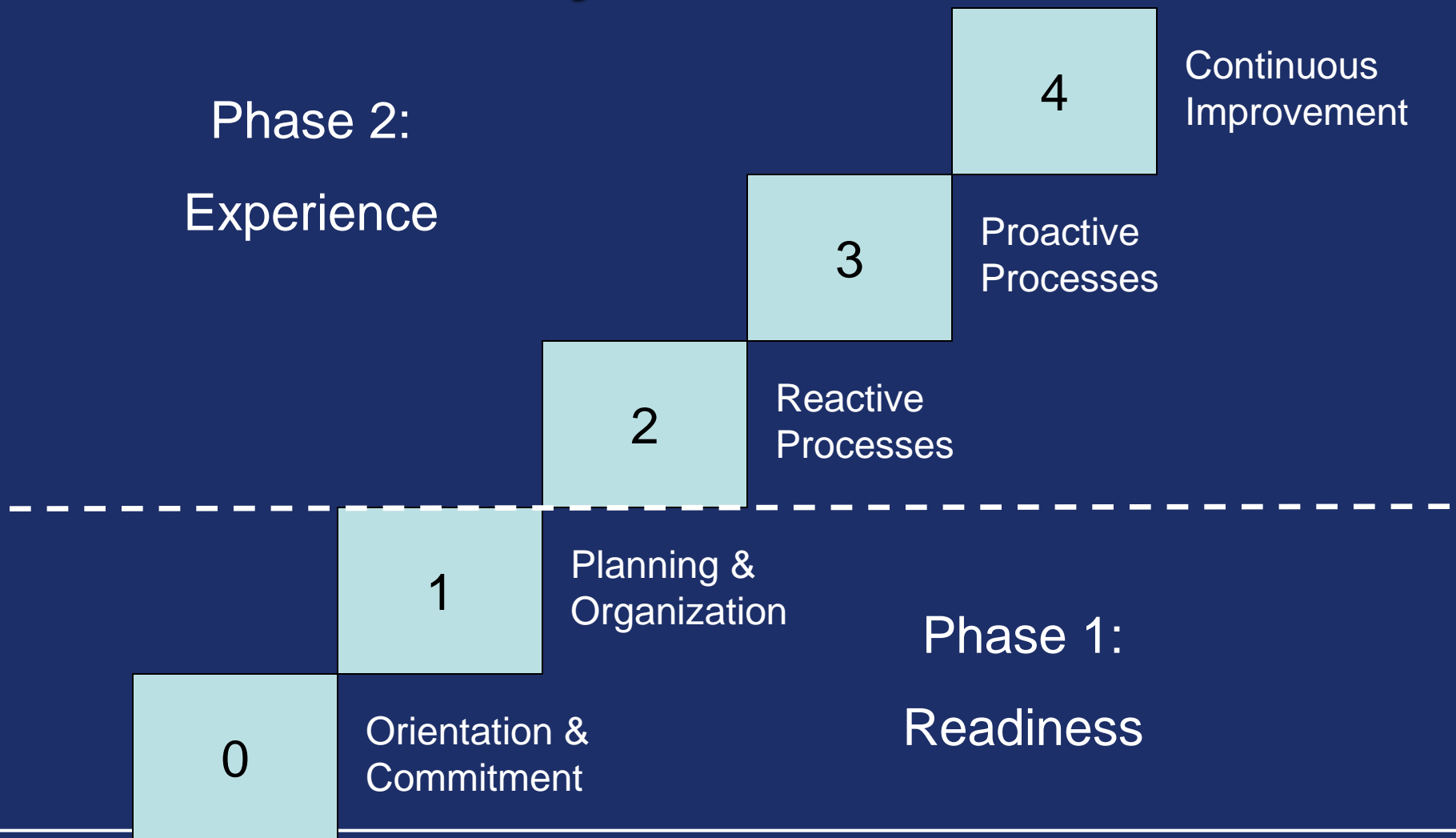
- **Pilot Project activities commenced in 2007**
- **Voluntary SMS development and interface with oversight systems**
- **AFS combined effort**
- **Objectives:**
 - Development of guidance material,
 - Implementation strategies, and
 - Oversight systems
 - Provide experience for FAA and operators



SMS Implementation Process



SMS Pilot Projects



Safety Management Focus Group (SMFG)

- **Voluntary implementation user's group**
- **Provides a two-way communications mechanism between SMS PMO and participants in voluntary implementation**
- **Provides a forum for knowledge sharing among participants**



“Carelessness and overconfidence are more dangerous than deliberately accepted risk”
Wilbur Wright, 1901

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Wilbur Wright gliding, 1901
Photographs: Library of Congress

