

Safety Management Systems (SMS) in the United States

4th MID Region Safety Summit

Presented By: Mr. Van Kerns
Deputy Director
Safety Standards
FAA Flight Standards
Service

Date: 2-3 October 2018

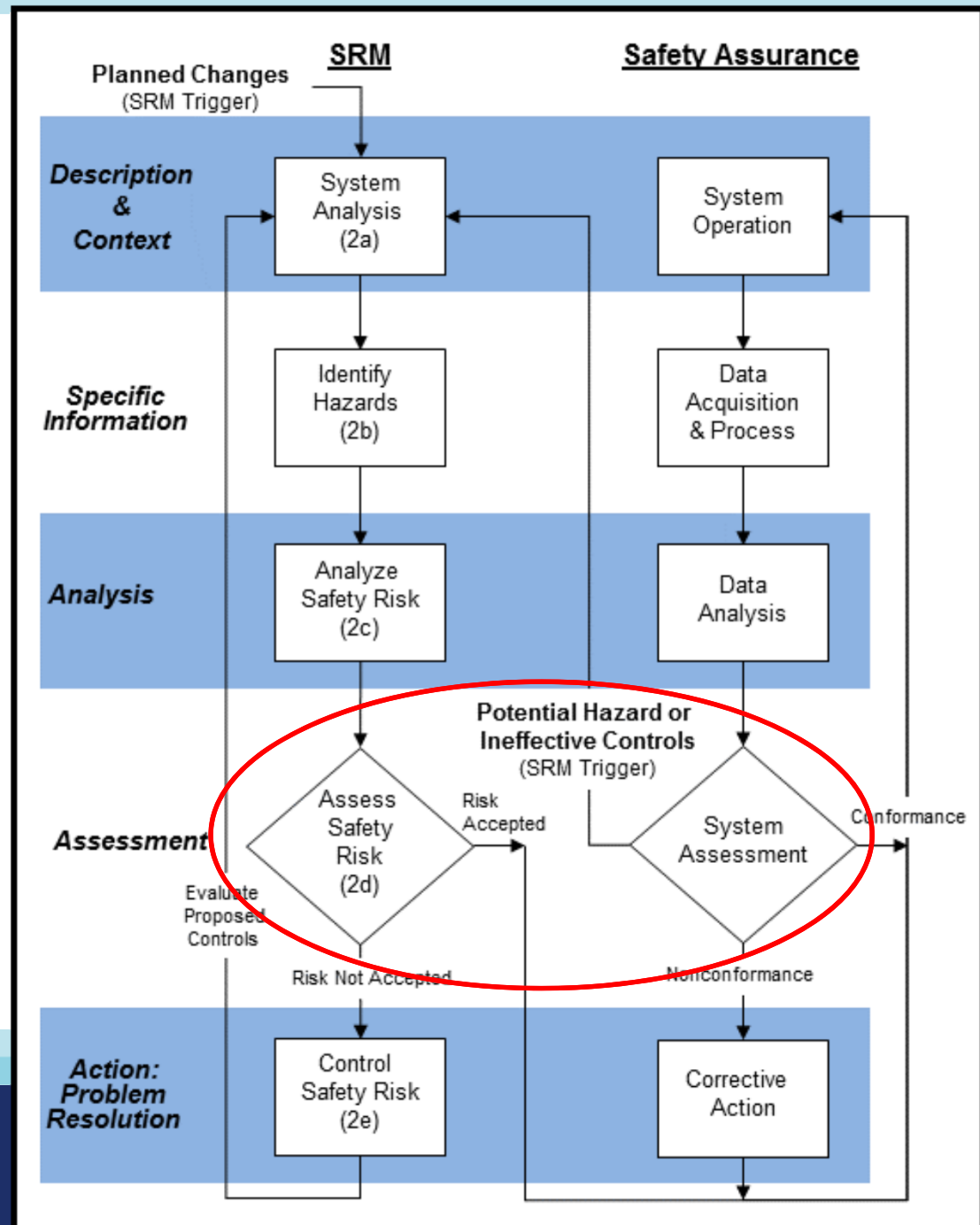


Briefing Overview

- Risk Based Decision Making
- Review ICAO Standards
- Discuss ICAO Recommendations
- FAA/AVS Policy
- SMS Implementation
- SMSVP
- SMS Oversight (SAS)
- Challenges



Risk Based Decision Making in SMS



ICAO Standards

CE-6: Licensing, Certification, Authorization, and Approval – Design Assurance/Assessment (SAS) using Data Collection Tools with standardized observation items

CE-7: Surveillance obligations – Performance Assurance/Assessment of Continuing Operational Safety (SAS) using Data Collection Tools with standardized observation items and ability to build custom DCTs



Slide 4

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Wyrick, James (FAA), 4/2/2018

ICAO Standards

- *CE-8: Resolution of safety issues - Analysis, Assessment, and Action (AAA) provides a decision process based on collected data to guide and record Principal Inspector decisions*
- *Compliance Philosophy/Policy - Solving problems by the most effective means, using root cause analysis, preferably through collaborative exchange of information and development of compliance actions but applying strong enforcement to those CHs that are unwilling or unable*



Slide 5

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Wyrick, James (FAA), 4/2/2018

SMS and Compliance Philosophy

The FAA Compliance Philosophy is one of the first steps in the agency's culture shift

- Uses **safety management principles** to proactively address emerging safety risks

The overarching goal of the **compliance philosophy** is universal across the spectrum of scenarios and situations – to foster an open, problem-solving approach to allow safety problems to be understood through proactive exchange of information and effective compliance.



RBDM: Resource Allocation

- Annex 19 Recommends that *oversight resources* be allocated according to *areas of greatest, “safety concern or need” (risk)*. SAS Certificate Holder Assessment Tool (CHAT) bases the Comprehensive Assessment Plan (CAP) on a set of risk factors.
- Annex 19 Recommends that *surveillance, “takes into consideration the safety performance and complexity of [the service provider’s] products or services”*
- SAS Features provide for these (MLF, CHAT, CAP)



FAA AVSSMS and RBDM

- AVS Policy requires oversight organizations to consider ***CHs' application of SRM*** when making ***decisions regarding certification, acceptance, or approval*** of CH's proposed changes (Order VS 8000.367B)
- AVS Policy requires consideration of ***CHs' safety assurance*** in decisions regarding ***continuing operational safety*** (performance assessment (Order VS 8000.367B))



Implementation

- **All 14 CFR Part 121 Operators were required to have an SMS implemented and accepted by March 9, 2018.**
- **14 CFR Part 5 is the SMS Standard.**
- **All current part 121 Operators complied.**
- **All have been accepted by the FAA.**



Challenges in Implementation

- **Understanding of SMS vs, “Safety Program”**
- **Understanding of risk management principles**
- **Workloads of sustaining operations and oversight during development and implementation**
- **“Work as done vs work as imagined”**
- ***Practical* training – regulator and service provider**
- **Mutual involvement of SP and FAA management is essential**
- **Top through front line management involvement**



SMS Voluntary Program

Based on the ***same standard*** as part 121 operators (14 CFR part 5).

Open to ***all certificated Service providers***

Successful continued participation leads to formal recognition as being, “***acceptable to the State.***”

Discussions ongoing about joint
***Design/Manufacturing and Maintenance
Organization SMS Pilot Project.***



Transition from Implementation to Continual Operational Safety (COS)

- Previously, Flight Standards Inspectors had been focusing on SMS Implementation efforts and use of specialized tools to assess design of the SMS and demonstration of performance capability.

The transition to Continual Operational Safety:

- ✓ After an SMS is accepted, the manner in which the FAA conducts on-going continued operational safety (COS), and the tools required to conduct that oversight, have evolved.
- ✓ The FAA workforce is being provided new tools to help them assess the effectiveness of a certificate holder's SMS processes.
- ✓ This will now allow the workforce to assess and evaluate the technical and the safety management processes designed into the Certificate holder's processes.







Safety Assurance System

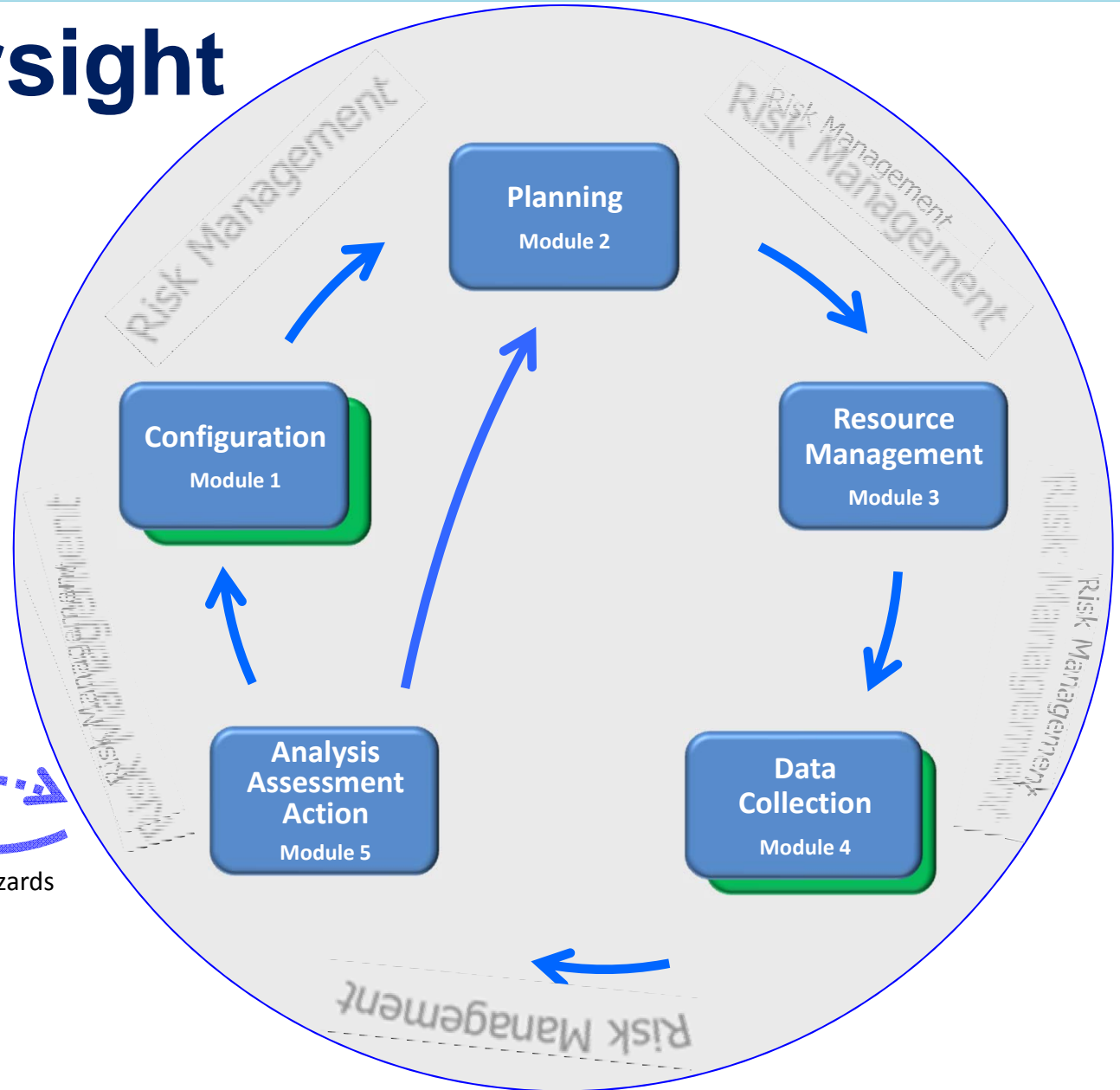
- System Safety approach to oversight for AFS.
- Risk-based, data-supported
- Prioritize inspection tasks based on highest risk.
- More efficient use of resources.



SAS Oversight Model

Legend

-  SAS Internal (FAA)
-  SAS External (CH/A)
-  Process Flow
-  Feedback/Communication



SMS Is Not a Separate Process

- Integrated COS Oversight concept: the application of integrated **technical and managerial assessment** to determine the certificate holder's ability effectively manage the safety of their operational processes.
- One system, two aspects:
 - **Assessment of Technical, Operational processes**
 - **Assessment of the management system as applied to technical processes**



Technical: Master List of Functions (MLF)

SAS

- Operational Mgmt
- Flight Operations
- Operational Control
- Tech Operations
- Onboard Operations
 - Cabin Operations
- Grnd & Station Ops
 - Ground Handling
 - Cargo Handling

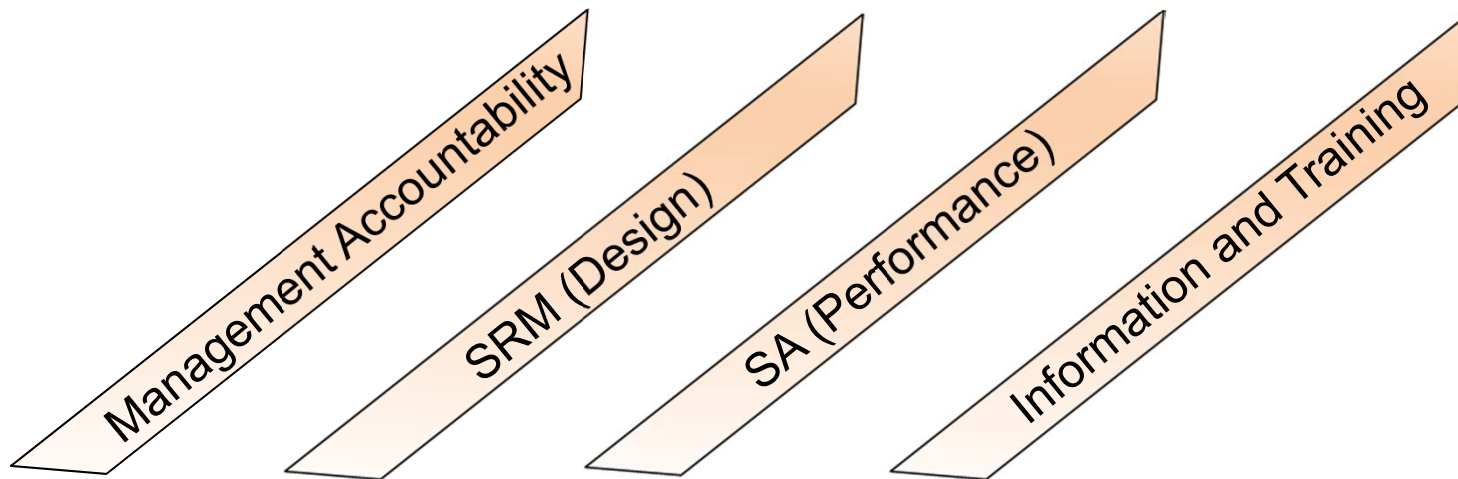
IOSA

- Org and Mgmt (ORG)
- Flight Opns (FLT)
- Opnl Control (DSP)
- A/C Engr/MX (MNT)
- Cabin Opns (CAB)
- Grnd Handling (GRH)
- Cargo Opns (CGO)



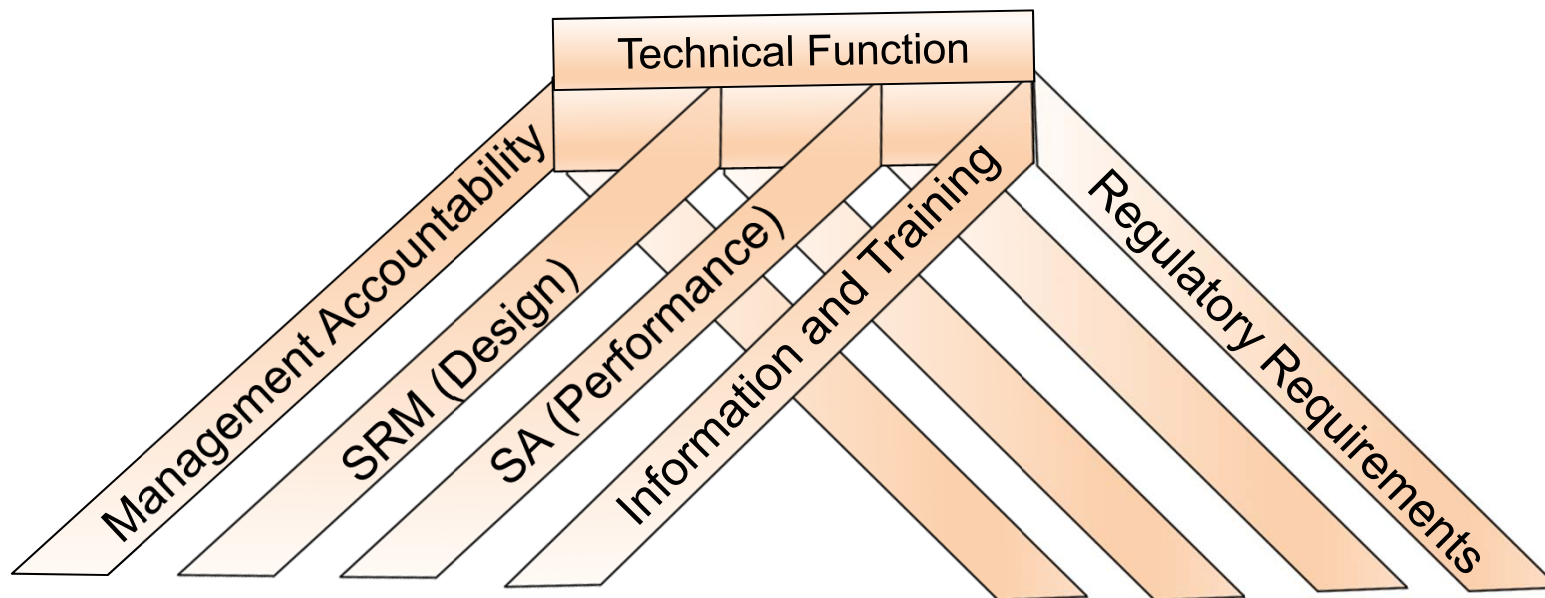
SMS Processes Act as Supports

SMS processes have no exclusive purpose except to support the organization's technical processes
The provide the building materials to support technical processes.



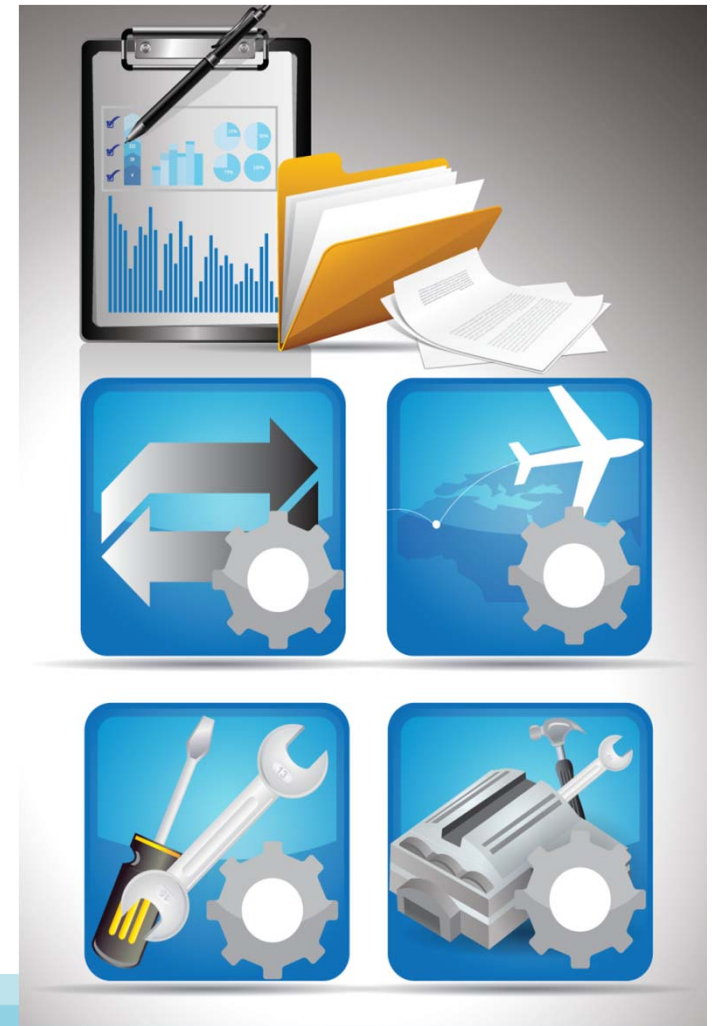
Integrated Systemic Oversight

Technical/Operation Functions, Regulatory Requirements, Management Processes



Types of Data Collection Tools

- Element Design DCTs (ED DCTs) (CE-6)
- System/Subsystem Performance DCTs (SP DCTs) (CE-7 – System/function)
- Element Performance DCTs (EP DCTs) (CE-7 - Detailed)
- Custom DCTs (Special purpose, structured)
- Dynamic Observation Reports (DORs) (Special purpose, unstructured)



Challenges: Moving Forward

- **Integrating existing voluntary and regulatory programs into comprehensive Safety Management Systems.**
- **Measurement of safety management effectiveness – beyond counting accidents.**
- **Becoming more interactive with service providers – focusing combined energy on effective problem solving.**
- **Further SMS rulemaking.**



Questions?

