



THE ICAO PERSPECTIVE ON SWIM

Roberta Luccioli

TO/AIM

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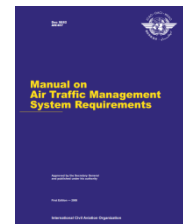
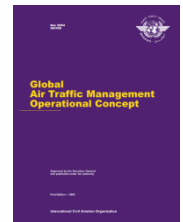
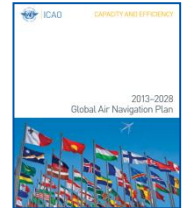
Outline

- SWIM Vision
- The Problem
- SWIM Concept
- Updates to the SWIM Concept
- A multidisciplinary approach



System Wide Information Management (SWIM) Vision

- SWIM is an integral part of the Global Air Navigation Plan (GANP) (Doc 9750) and is covered in a number of the aviation system block upgrades (ASBU) modules
- The Global Air Traffic Management Operational Concept (Doc 9854) presents ICAO's vision to achieve an **interoperable global air traffic management system for all users** during all phases of flight, that meets agreed levels of safety, provides for optimum economic operations, is environmentally sustainable and meets national security requirements.
- The Manual on Air Traffic Management System Requirements (Doc 9882) explicitly identifies the implementation of SWIM as a **requirement for the future ATM System**
- The Manual on SWIM Concept (Doc 10039) provides a vision for **interoperable global information management** while addresses the transition to a mixed operational environment





Overview of Status of work

- Work done so far by ATMRPP:
 - SWIM operational concept developed (advance copy Doc 10039 available)
 - A/G components to be added to the concept
- Information Management Panel established (ANC 194th session)
 - Building Global SWIM
 - Assisting Secretariat as focal point for integration of all its components
- SWIM enablers being worked out by various Panels (Flight and Flow, COM, AIM and MET)
- Initial workshops, mini global demonstrations taking place in the Regions

The need for SWIM

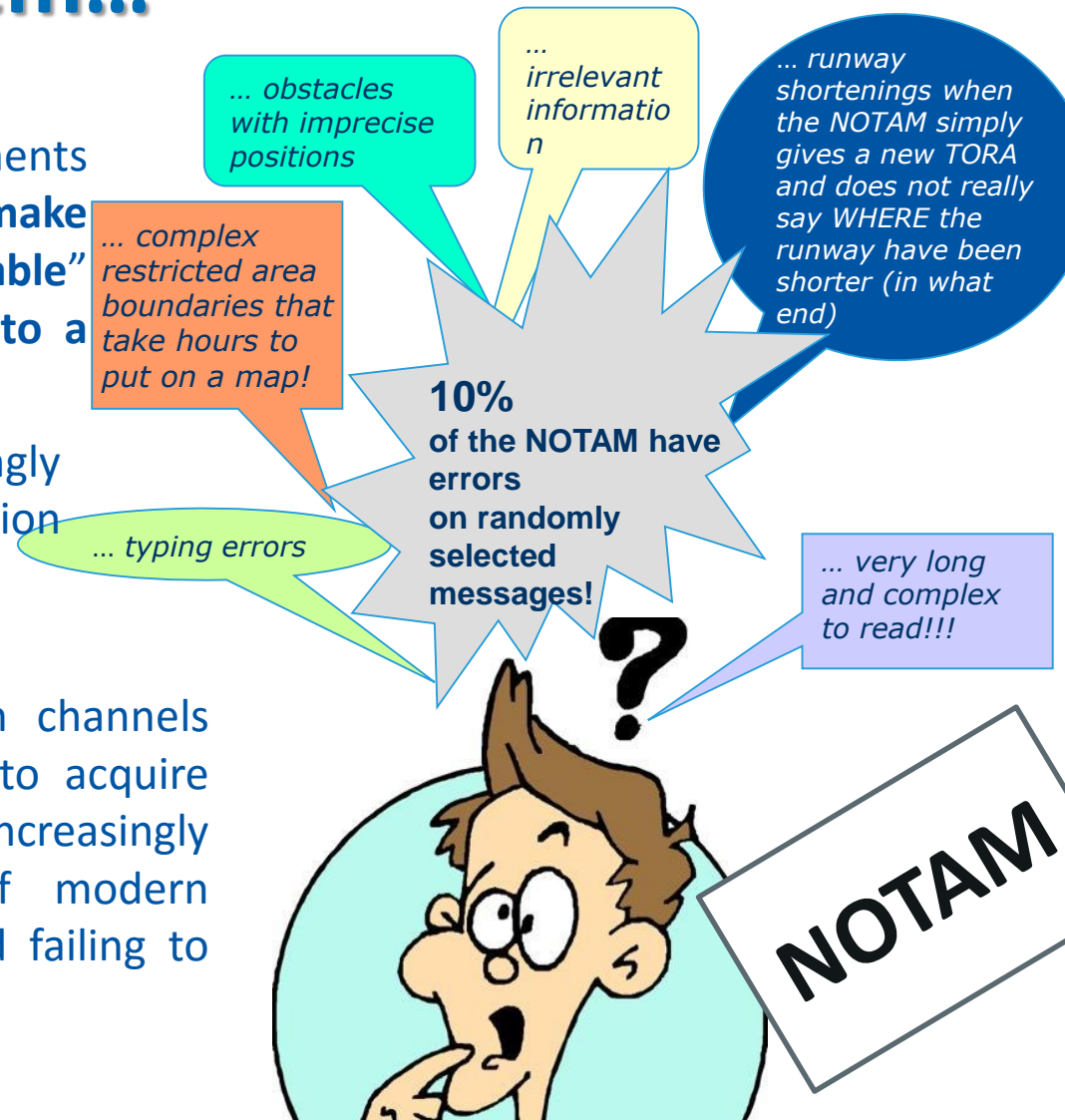
Shortcomings

- Systems are not globally interoperable
- “Point to point” or “application to application” exchanges
- Message size limitations
- Costly access to information
- ATM information is managed in isolation
- Duplication of information
- Inconsistencies



A well known problem...

- Emerging information requirements demonstrate that there is a need to make information available which is “discoverable” as well as information that is directed to a specific recipient (“addressable”);
- The evolving ATM system is increasingly integrated and requiring information management which meets the needs of **all ATM actors and users**;
- There are a multitude of information channels which must be integrated by the user to acquire awareness of **flight-critical conditions**. Increasingly this is failing to take advantage of modern information management techniques and failing to provide optimum situational awareness





SWIM Concept (Doc10039)

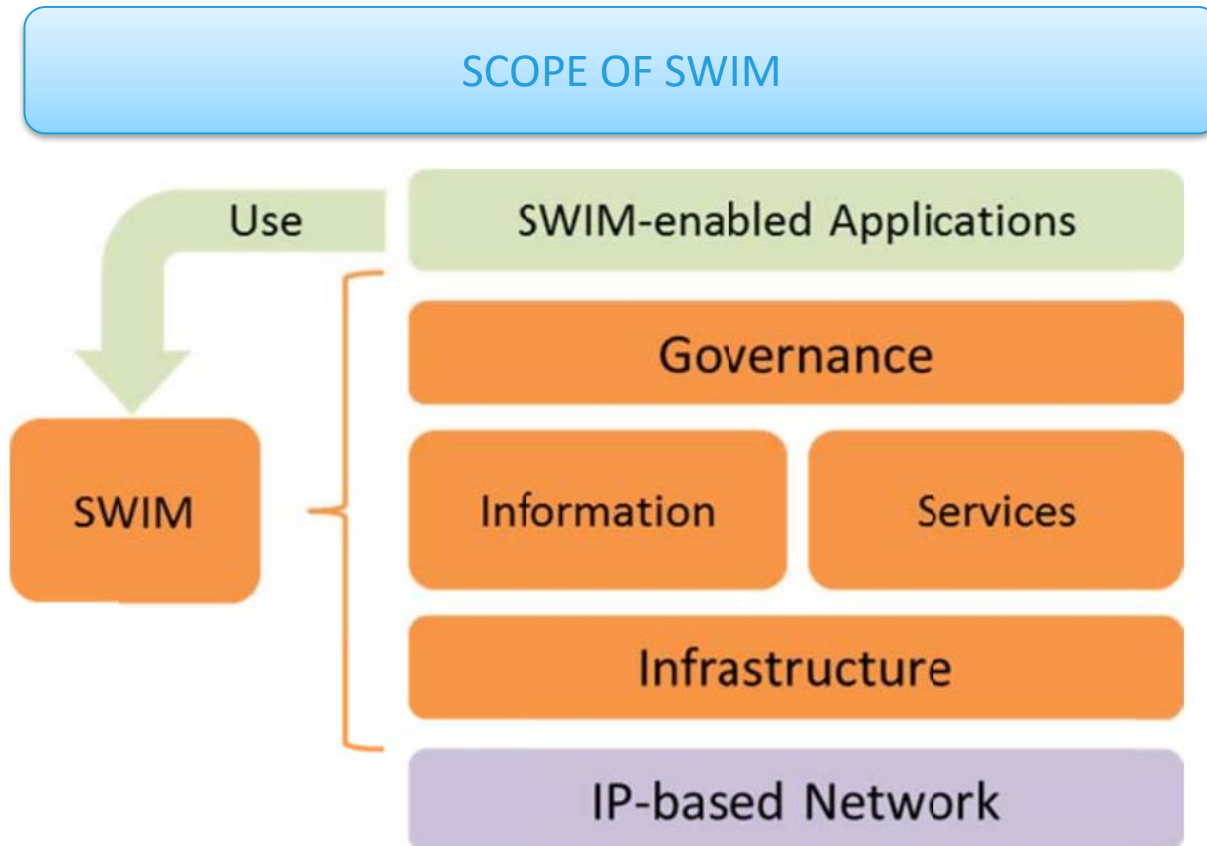
Basic Principles

- Separation of information provision and information consumption
- Every participant is a producer or a consumer of information
- Decoupling producers of information from the possible consumers
- Loose system coupling
- Use of open standards
- Use of interoperable services

Global Interoperability

SWIM Definition

SWIM consists of Standards, Infrastructure and Governance enabling the management of the ATM-related information and its exchange between qualified parties via interoperable services.



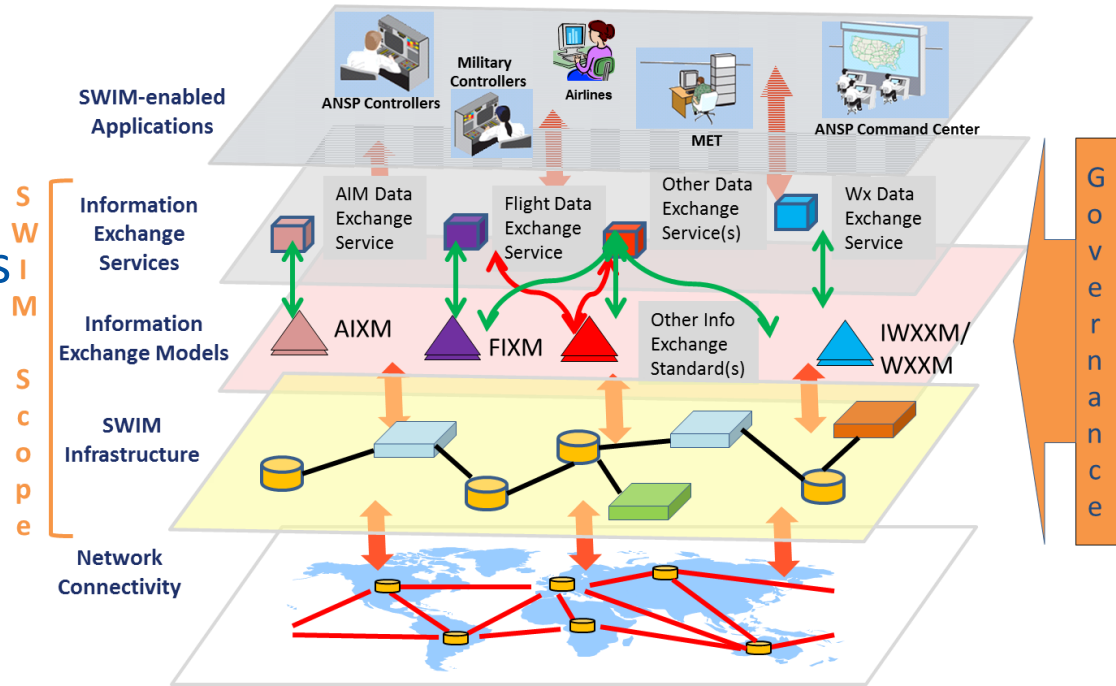
SWIM Benefits

- **Airspace user**
 - greater equity
 - greater access
 - greater autonomy
 - greater business
 - greater safety
- **Service provider**
 - real-time data
 - trend analysis and predictive data
 - range of automated decision-making tools
 - optimize services
- **Regulator**
 - Improved safety



SWIM Global Interoperability Framework

- SWIM-enabled applications
- Information Exchange Services
- Information Exchange Models
- SWIM infrastructure
- Network Connectivity



SWIM Global Interoperability Framework



Update of SWIM Concept

The IMP has identified foundational components in need of deeper coverage:

GROUND TO GROUND SEGMENT

- Reference interoperability architecture (ATM Information Reference Model - AIRM);
- SWIM Controlled Vocabulary;
- Descriptive information (metadata) to facilitate trust and info quality practices;
- SWIM information services for interoperable exchange of Global ATM information;
- SWIM Registries to enable discovery of SWIM information services

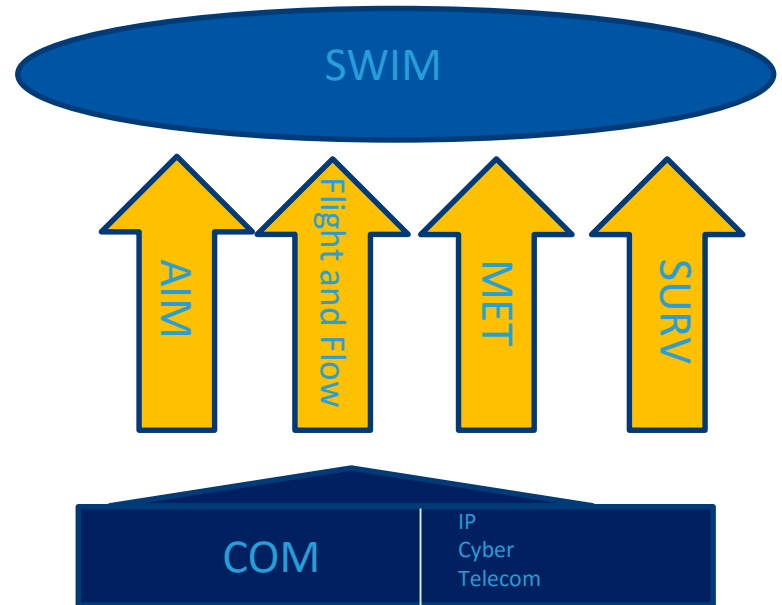
AIR TO GROUND SEGMENT: To be developed

SWIM: A multidisciplinary approach

- All enablers need to be developed with greater SWIM goal in mind:
 - SWIM is multidisciplinary effort, needs to be treated like a programme



- ICAO SWIM programme office being established to coordinate efforts





SWIM Programme office

- Develop the long term vision
- Develop intermediate and short term goals
- Establish concrete usage for different scenarios
- Ensure harmonized implementation
 - Mitigate current proliferation
 - Establish RO focal points for coordinated roll-out

SWIM Program Near Term Task List

Task Name	2015				2016				2017				2018			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Air Navigation Conference 2018																I
Information Management Symposium												I				
SWIM Fine Tuning																
SWIM Governance																
SWIM Architecture																
SWIM Services																
Information Management Awareness																
Information Management Task List																
Gap Analysis																
Milestones																

Near term task list determines:

- a) Any necessary adjustments to work programmes on AIM, MET, Flight and Flow
- b) Sets the basis for global implementation strategy

Conclusions

- Define a core set of requirements for SWIM global interoperability and harmonization.
 - Identify the **minimum SWIM Infrastructure requirements** for sharing information
 - Identify the **minimum governance rules** to properly access the information
 - Identify a **core set of services** to be provided at the global level.
- The main goal is to help ensure that SWIM implementation is harmonized globally





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THANK YOU