SWIM Concept, Scope and Benefits

SWIM Seminar / Workshop

Lima, October 31st - November 3rd - 2017

Environment

Standards

Services

Infrastructure

SWIM

Qualified parties

Governance

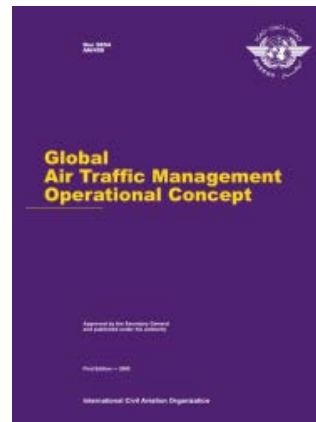ATM Information
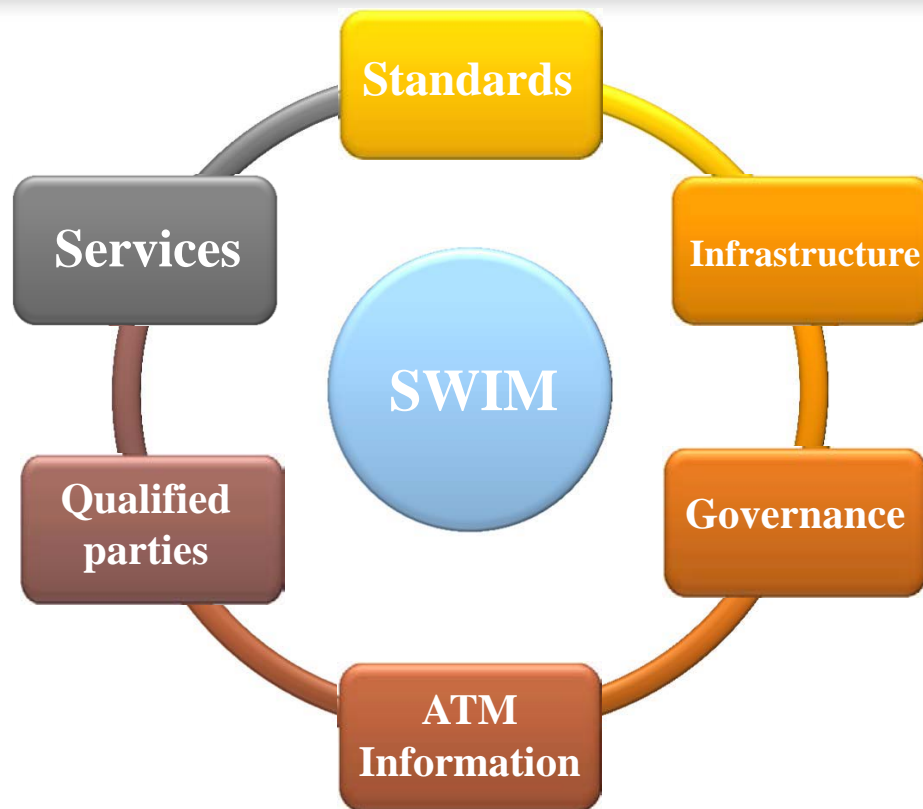
SWIM

- **SWIM Vision**

- **The problem**

- **SWIM Concept**

- **SWIM Concept updates**

- **A multidisciplinary approach**

Gestión de la Información de todo el Sistema (SWIM)

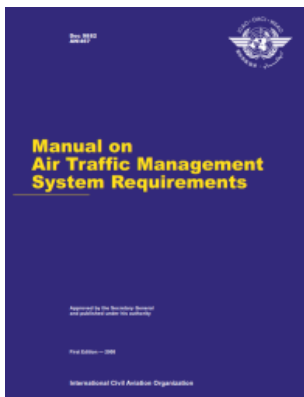SWIM, is an integral parts of Global Air Navigation Plan (Doc 9750).

GATMOC (Doc 9854) provides the ICAO vision of a globally interoperable ATM system.

Gestión de la Información de todo el Sistema (SWIM)

The Air Traffic Management Requirements Manual (Doc 9882) explicitly identifies the implementation of SWIM as a requirement for the future ATM system
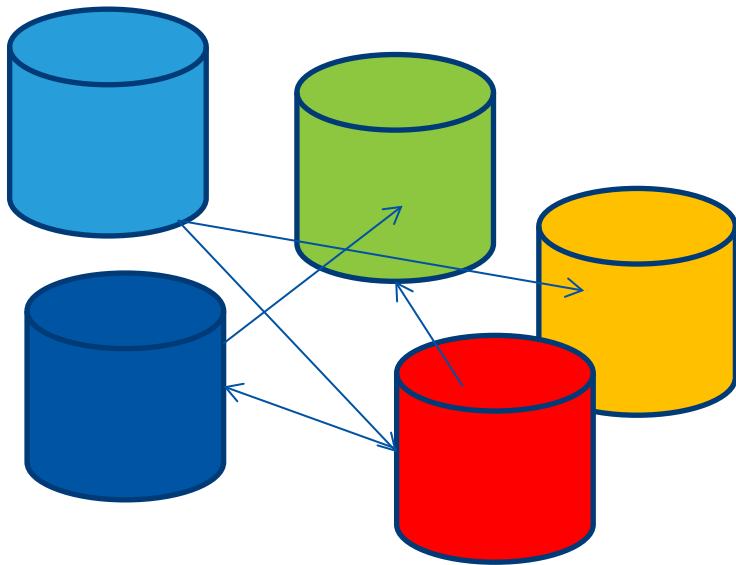
The Manual on SWIM Concept (Doc 10039) provides a vision for globally interoperable information management while addressing transition and mixed operating environment
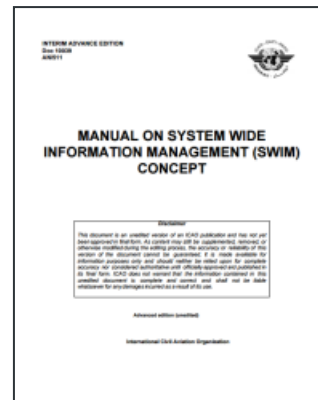
What is the current problem of the aviation system in relation to information?
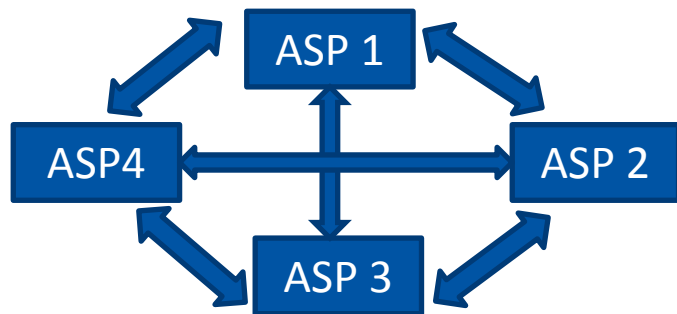

Aeronautical information currently are:
- Isolated
- Duplicate
- Updated inconsistently

Message exchanges

Currently
- Exchange of messages is adapted locally.
- Relevant information flow between two ASPs is not visible to a third party.
- Does not facilitate collaboration.
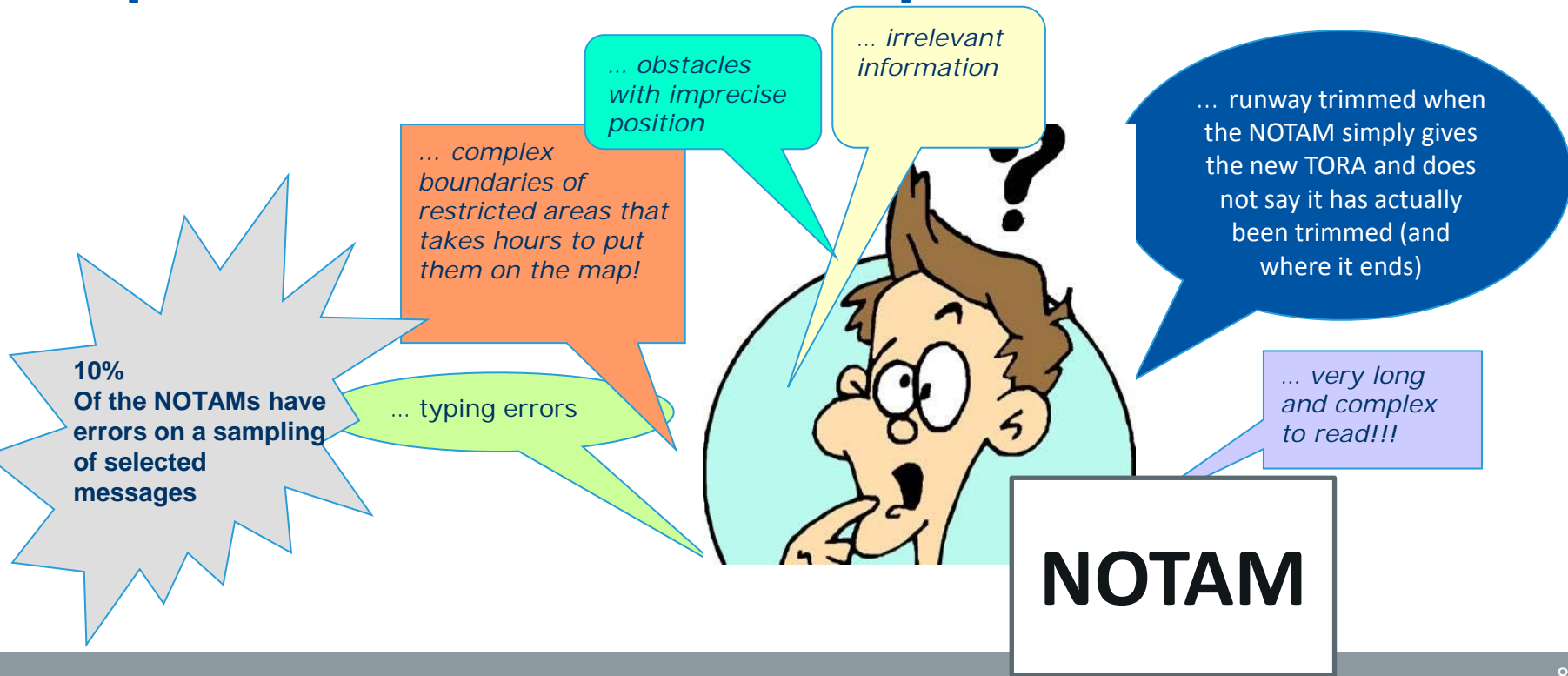- Changes affect some interfaces.
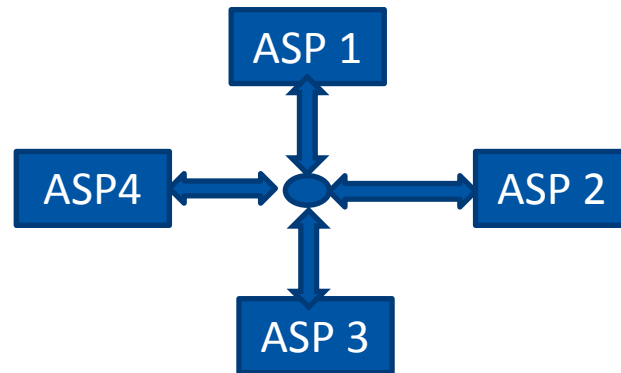
Future
- Information is available throughout the system.
- The system is collaboration-friendly.
- Consistent information is visible to all interested parties and authorized third parties.
- Changes affect a few interfaces.

A problem well known to operators

… obstacles with imprecise position

… irrelevant information

… runway trimmed when the NOTAM simply gives the new TORA and does not say it has actually been trimmed (and where it ends)

… complex boundaries of restricted areas that takes hours to put them on the map!

**10%
Of the NOTAMs have errors on a sampling of selected messages**

… typing errors

… very long and complex to read!!!

**NOTAM**

What SWIM is NOT!

- A giant database

- A specific technology

- A new application

- A big system requiring new facilities or large space requirements

- A telecommunications replacement

- It is not a sand-box where everyone can 'play' with operational information

The solution

Manage information

- Publish the SWIM information
- Manage SWIM information.
- Access to SWIM information
- Update the SWIM information
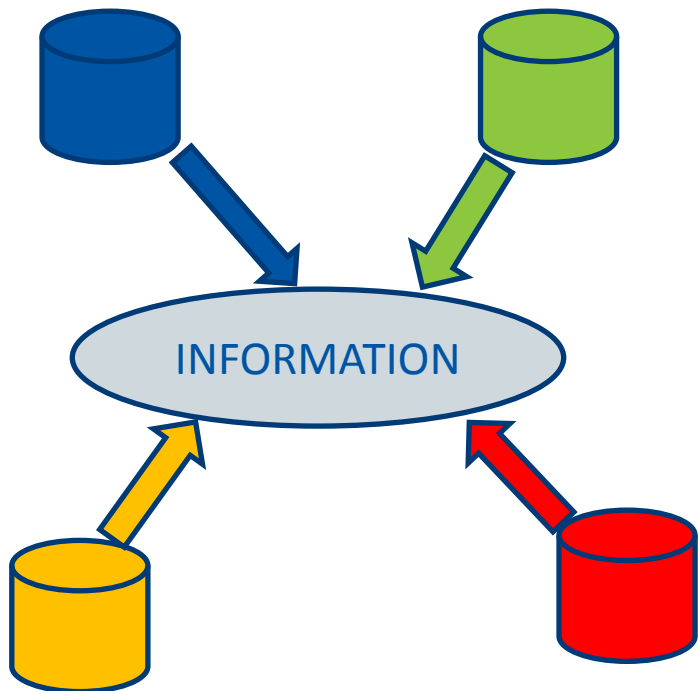
The need for SWIM

- Lack of common understanding of global IM.
- Exchanges "point to point" or "application to application".
- Legacy information products are limited in functionality and usability due to their textual nature.
- Limitation of message sizes.

The need for SWIM

- Expensive access to information.

- Challenge to devise security framework for all systems and stakeholders to support the need for open and timely data exchange.

- ATM information in partial isolation leading to duplication and inconsistencies.

Migration towards SWIM Information Services

- Identifying digital data sets for aeronautical information to be provided by States.

- Annex 15, PANS-AIM, Annex 3 identify the information to be digitalized.

Two key activities towards modernization

- Become data centric
- Become network centric

Together, these activities contribute to the unlocking of information in support of ATM operations.

SWIM Concept

Definition : SWIM consists of standards, <u>infrastructure</u> & <u>governance</u> enabling the management of ATM information and its exchange between qualified parties via <u>interoperable</u> services
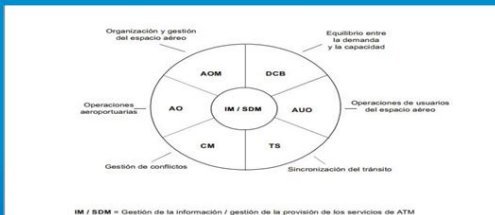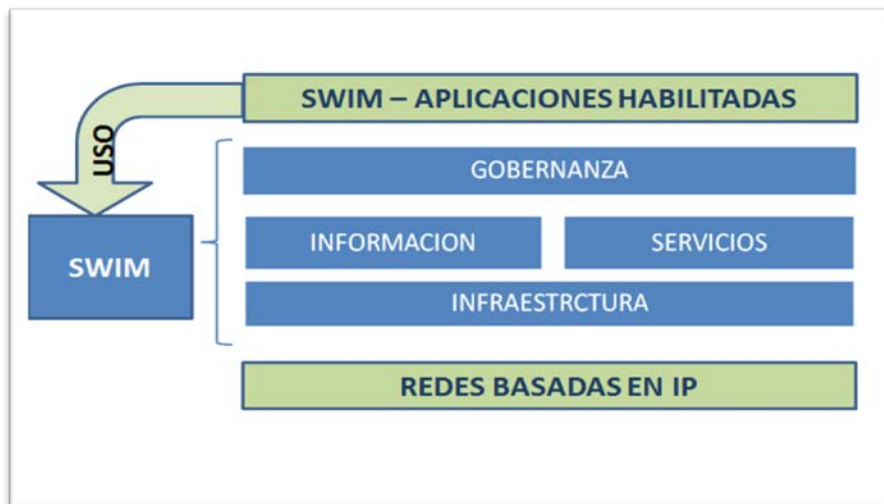

CONCEPTO OPERACIONAL ATM MUNDIAL

Figura 1.   Gestión de la información como componente del futuro concepto operacional de ATM mundial

SWIM Scope

SWIM – APLICACIONES HABILITADAS

GOBERNANZA

INFORMACION   SERVICIOS

INFRAESTRCTURA

REDES BASADAS EN IP
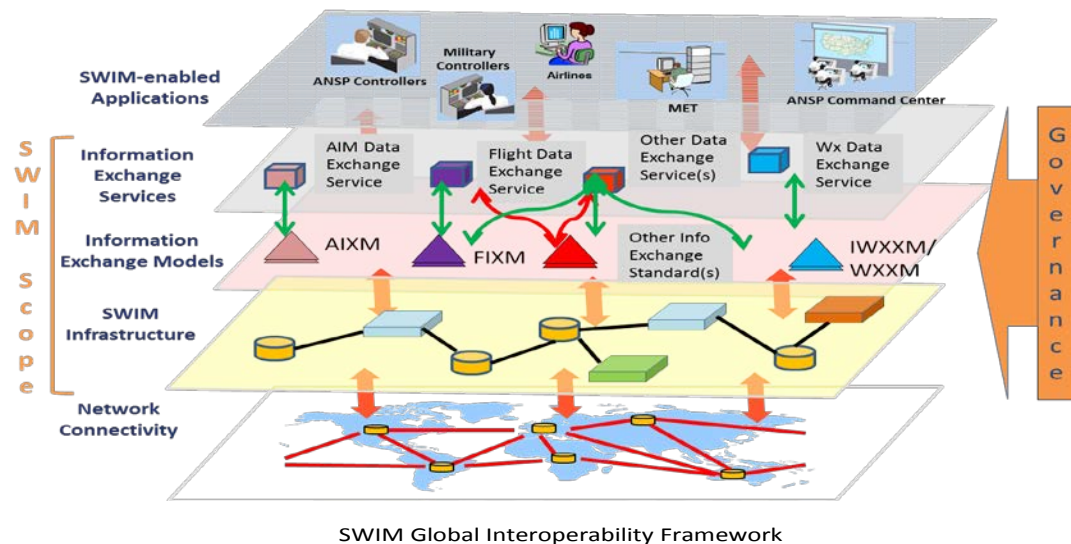
SWIM Concept

Basic Principles

- Separating the provision of information from consumption of information
- All participants are a producer or consumer of the information
- Disassociation of originators of information from the possible users
- Systems de-couplings
- Use of open standards
- Use of interoperable services

Global Interoperability

Framework for Global SWIM Interoperability

- SWIM-enabled Applications
- Information Exchange Services
- information Exchange Models
- SWIM Infrastructure
- Network Connectivity

SWIM Global Interoperability Framework

Benefits of SWIM

- More agile service delivery
- Cost reductions
- Return on Investment (ROI)
- Meeting IT goals
- Enabling advanced operations

SWIM Stakeholders

The Global ATM Operational Concept (Doc 9854) lists and describes the various members comprising the ATM community:

Aerodrome community

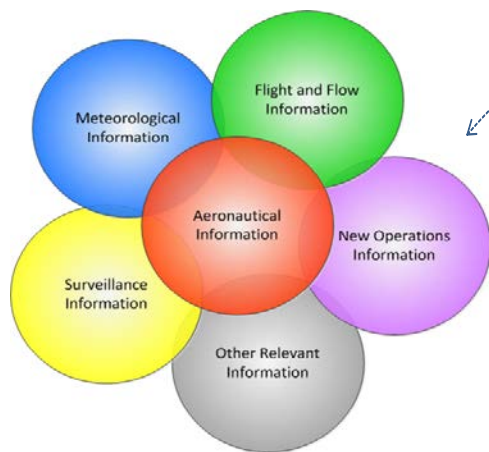Airspaces users and providers

ATM and MET services providers

ATM support industry
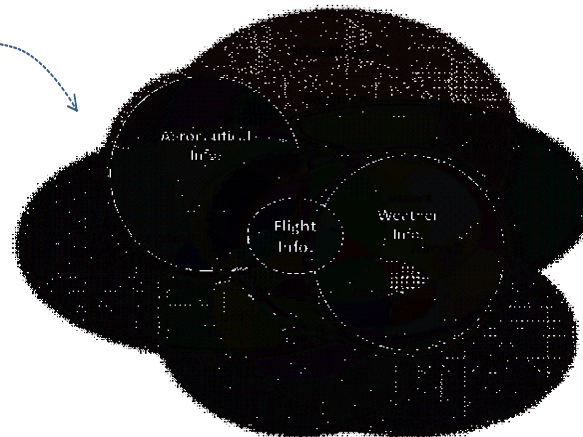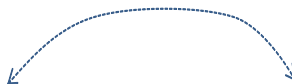
ICAO, Regulatory authorities

States

Information Domains

This is how we manage data

Identified Information Domains

This is how users see information

User based Information Domains

Significant overlap with ICAO identified Information Domains

SWIM Governance

- SWIM Governance is the set of standards, policies and processes that ensure information required for global interoperability is provided by reliable, trusted services.

- SWIM Governance contributes to building confidence in SWIM, addressing topics, such as rights of usage of information, quality of service aspects and trust.

SWIM Governance

SWIM Governance entails activities which can be applied at different levels (e.g. global, regional, national and organizational) such as:

- establish a common set of rules, policies and standards for SWIM information, information services and technical infrastructure;

- define and establish governance structures.

SWIM Governance

- Define who is involved in the development, approval and in the evolution of standards;

- Promote information interoperability among stakeholders;

- Define the IM processes to be followed; and

- Define the transition to a SWIM environment through regional or national arrangements.

Questions?

North American Central American and Caribbean (NACC) Office
Mexico City

South American (SAM) Office
Lima

ICAO Headquarters
Montréal

Western and Central African (WACAF) Office
Dakar

European and North Atlantic (EUR/NAT) Office
Paris

Middle East (MID) Office
Cairo

Eastern and Southern African (ESAF) Office
Nairobi

Asia and Pacific (APAC) Sub-office
Beijing

Asia and Pacific (APAC) Office
Bangkok

GRACIAS