Global Harmonization Through Collaboration

The Importance of AIM and the Operational Concept

EUROCONTROL

Federal Aviation Administration

AIR TRANSPORTATION INFORMATION EXCHANGE CONFERENCE - (FEATURING AIXM, WXXM AND FIXM)

August 28, 2012 - August 31, 2012
NOAA Auditorium and Science Center
Silver Spring, Maryland

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Date: August 28, 2012

Flightplan

- Background

- AIM Concept

- Relationship to other developments

- Challenge

Reasons for change

- Long coordination periods

- Late notified updates on NOTAM

- Rigidly defined products

- Need to display information on graphical displays

- Lack of integration across domains

Concept Development

2003 – Global Air Traffic Management Operational Concept (Doc 9854)

2008 – Manual on Air Traffic Management System Requirements (Doc 9882)

2011 – Flight and Flow – Information for a collaborative environment (FF-ICE)

2012 – AIM Operational Concept

………and others….

Operational Concept vs CONOPS

An Operational Concept:
- Provides high level description of the target concept
- Informs the stakeholders of the system how the system will function in practice and the expected benefits
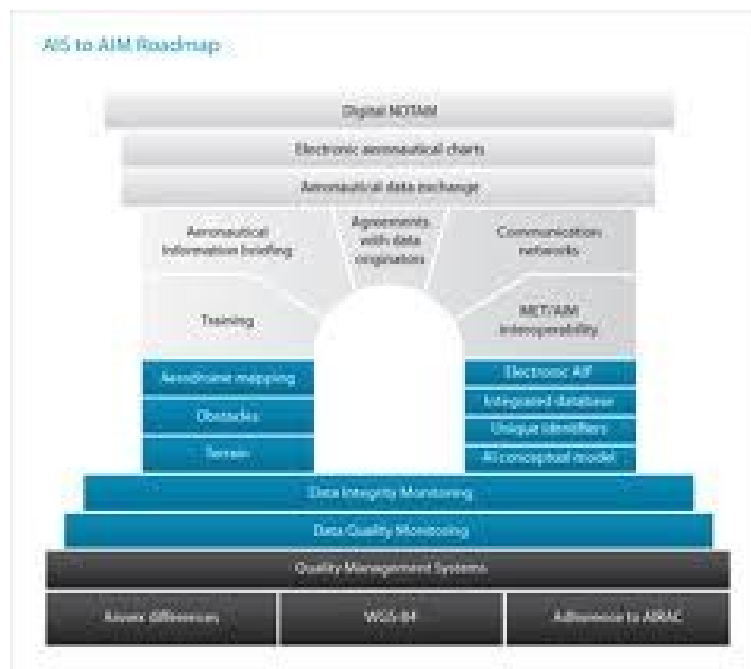- Describes the functions of the system as well as the interactions of the system users.

A Concept of Operations (CONOPS):
- Describes the characteristics of a proposed system from the viewpoint of an individual who will use that system
- Evolves from a concept
- It is used to articulate the quantitative and qualitative system characteristics
- Is not an implementation or transition plan itself

The Need for a Concept

- Current roadmap digitized AIS products

- "Building without a blueprint"

- Integration with other services not specified

Need for an AIM Operational Concept

Objectives – the "big" questions

- What is the Scope of the AIM domain?

- What is the role of AIM ?

- What are the expected benefits ?

- What are the functions of AIM ?

- What is the relationship to other entities ?

- What are the Products and Services of AIM ?

- What is the future of messaging and operational reporting?

- What is the future of the AIRAC cycle?
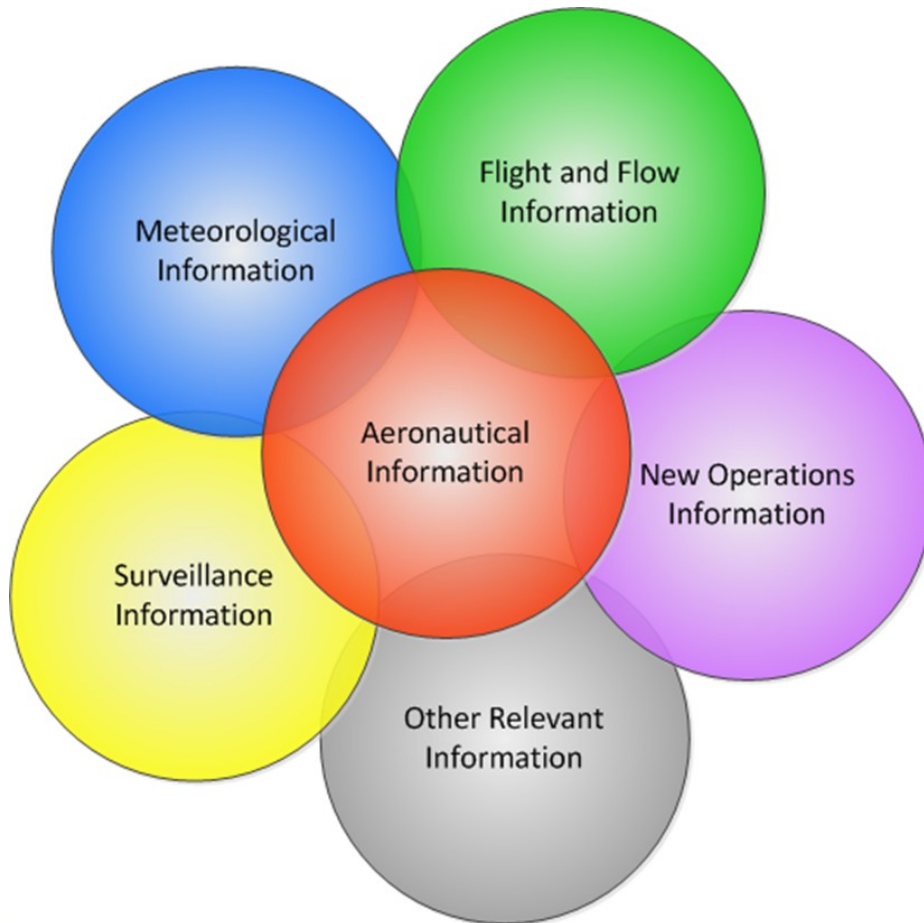
Objectives – The "Aim" of the exercise

The Operational Concept should:

- Serve as overarching guidance for roadmap development

- Serve as a foundation for SARP development

- Provide a unifying vision as to how AIM will evolve

- Develop consensus on how the "big questions" will be addressed

- Inform the larger community

Information Domains

- AIM is one of multiple information domains

- Domains tend overlap or otherwise influence other domains

Domain of AIM Information

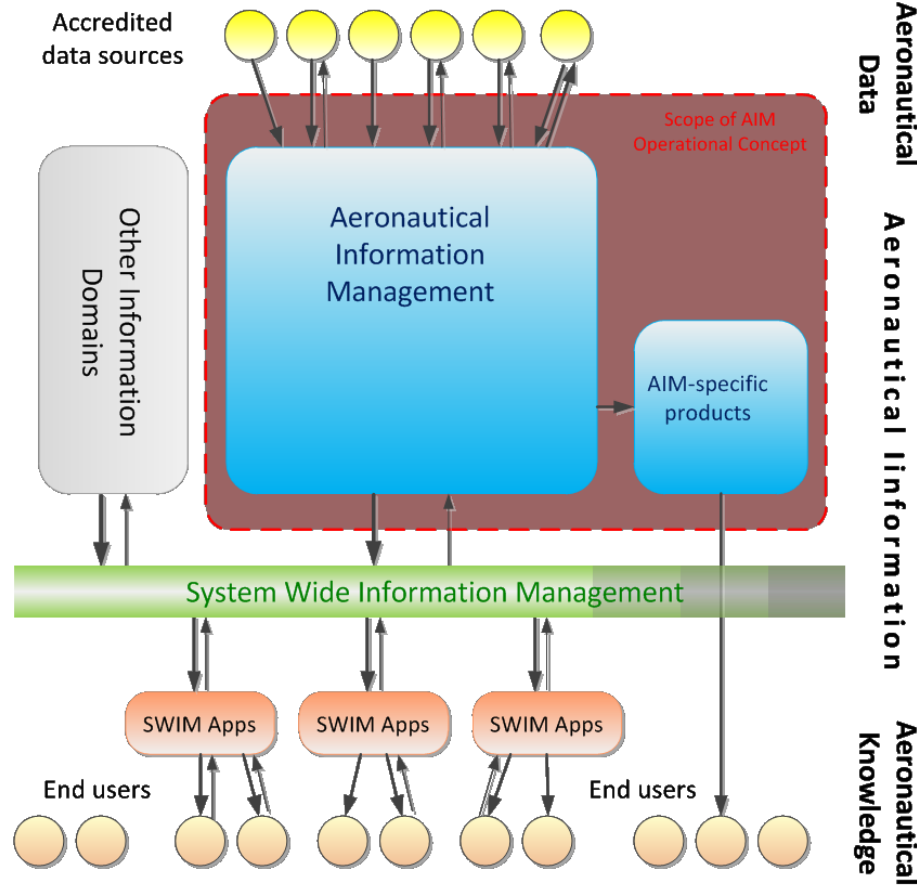- Provides the underlying geospatial reference for the information assembled across the SWIM infrastructure

- consists of the features required to fully describe:

  - the Air Navigation Infrastructure

  - underlying terrain and cultural features

The Scope of the AIM Concept
- AIM in the larger picture

Who are the Users?

Users of aeronautical information

ATM Actors

pilot

controller

dispatcher

Note: The ATM actors require operational access to AIM information.

Members of the ATM Community:

Aerodrome community
Airspace providers
Airspace users
ATM service providers

ATM support industry
ICAO
Regulatory authorities
States
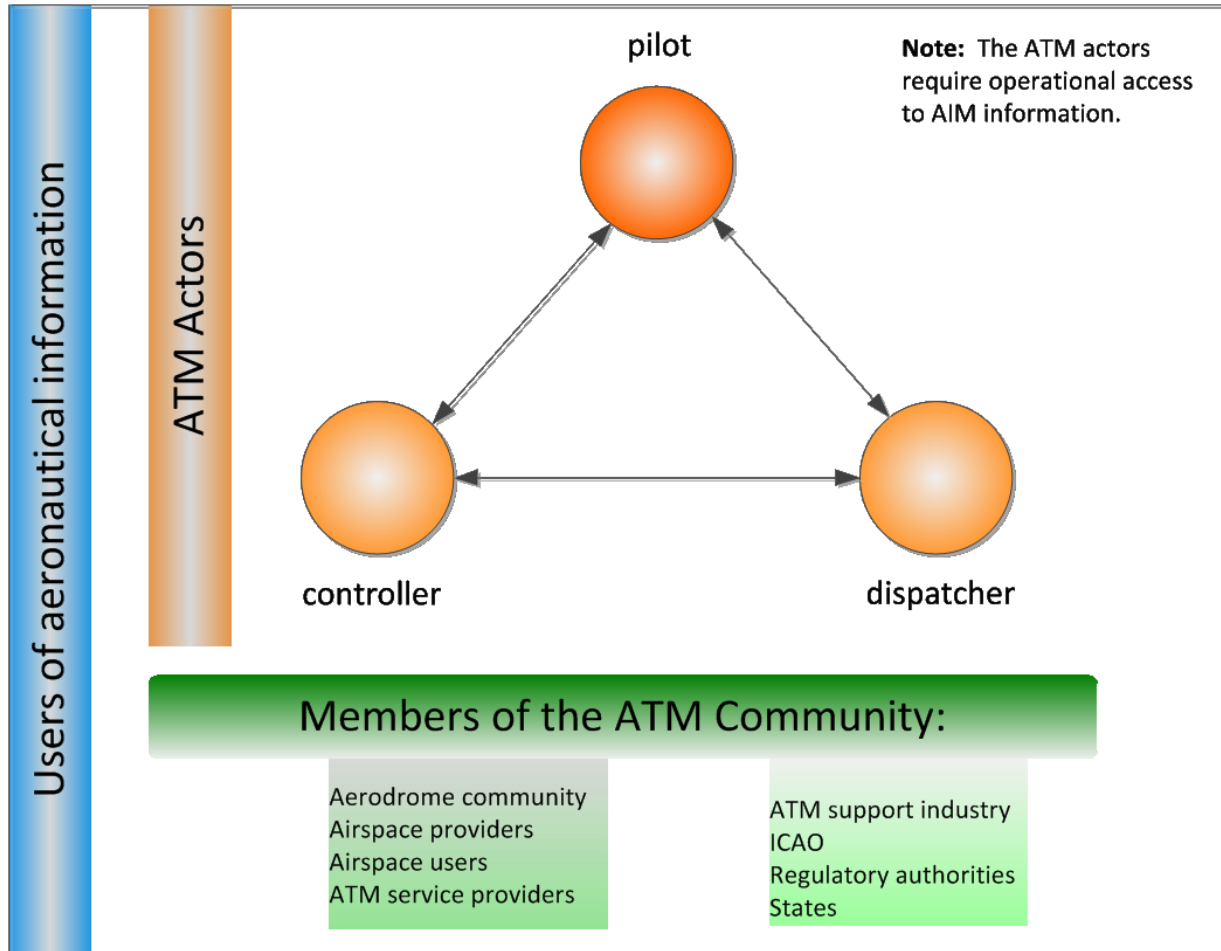
AIM Interfaces

Accredited Provider(s) of AIM source data

| Air Navigation Service Provider | Aerodrome | Surveying (Terrain, Obstacles) | Airspace/Procedure Design | Source Providers (Others) |

Authoritative Source

AIM Authority
(at State or Regional level)

| Users (AIM actors) | Users (ATM Community) | Users (Source providers) | Users (others) |
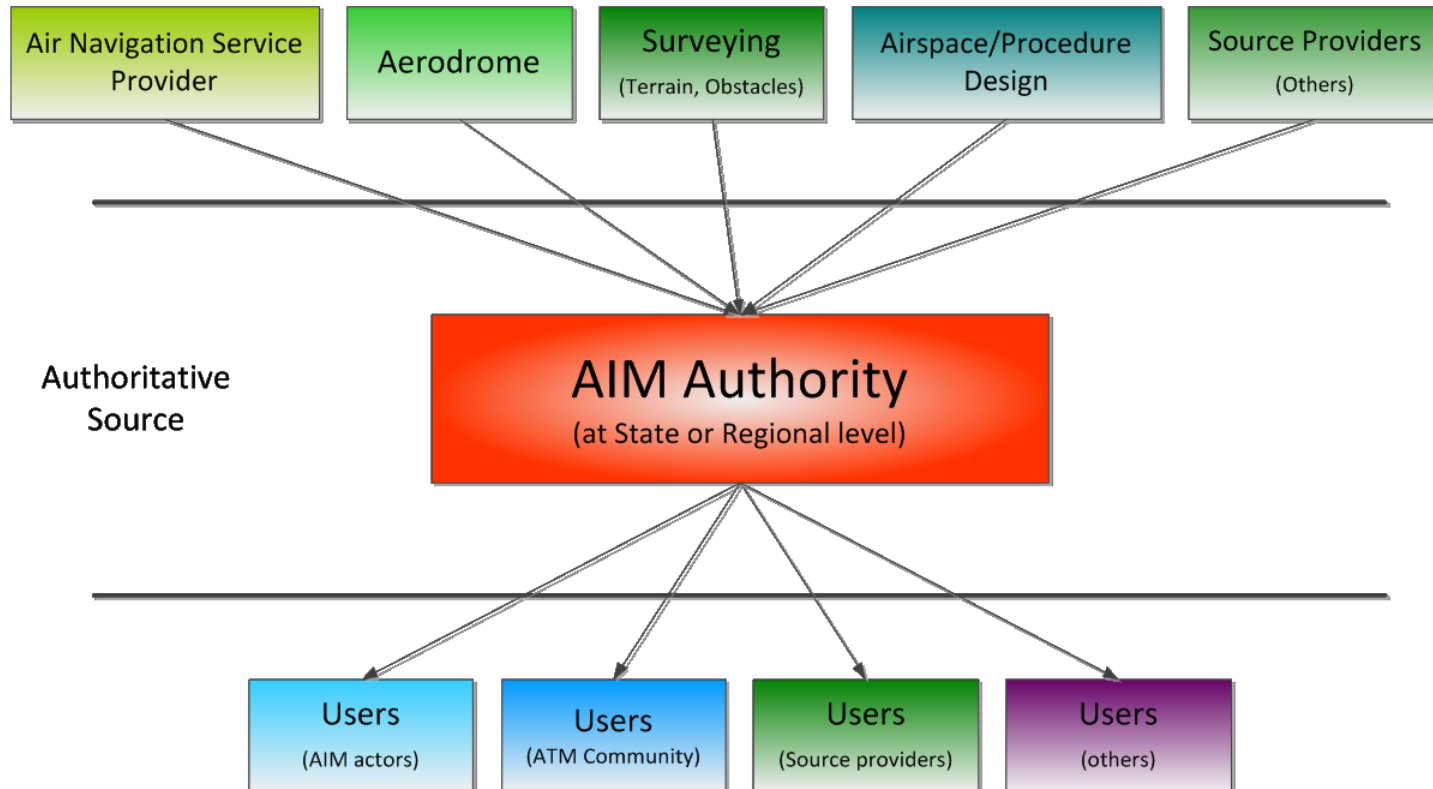
Consumers of AIM information

The information chain

Information Lifecycle

Identify who needs what information (i.e., which aeronautical features, attributes, accuracy, resolution, etc); reassess whether adequate for intended use;

Identify

Collect information from all accountable sources; integrate into Single Authoritative Source

Collect

Authorized users access and use information through products and services; provide feedback whether complete and adequate for its intended use;

Use

Verify/Update

Verify information characteristics (e.g., consistency, quality standards); has information changed and needs to be updated

Distribute

Make aeronautical information discoverable and available as Single Authoritative Source via SWIM

Evolution from Products to Service Orientation

| Temporality	Planning and Reference	Pre-flight	In-flight	Post-flight
Current description	Static	Dynamic		
Current AIS products	AIP AIP Supplement AIC Charts (some of which are used in-flight)	NOTAM SNOWTAM ASHTAM PIB	No definitive AIS products; Updates are disseminated by voice (and data link)	No specific AIS products; Opportunity for pilots to provide ad-hoc feedback
Future AIM applications	Baseline	Updates		Analysis of single and aggregate trajectories for systemic improvements, as per Performance Based Methodology
	Authoritative Source (aggregating information from accredited sources)	Fully integrated and up-to-date Pre-flight Information Briefing	Critical information disseminated via data link	

Temporality
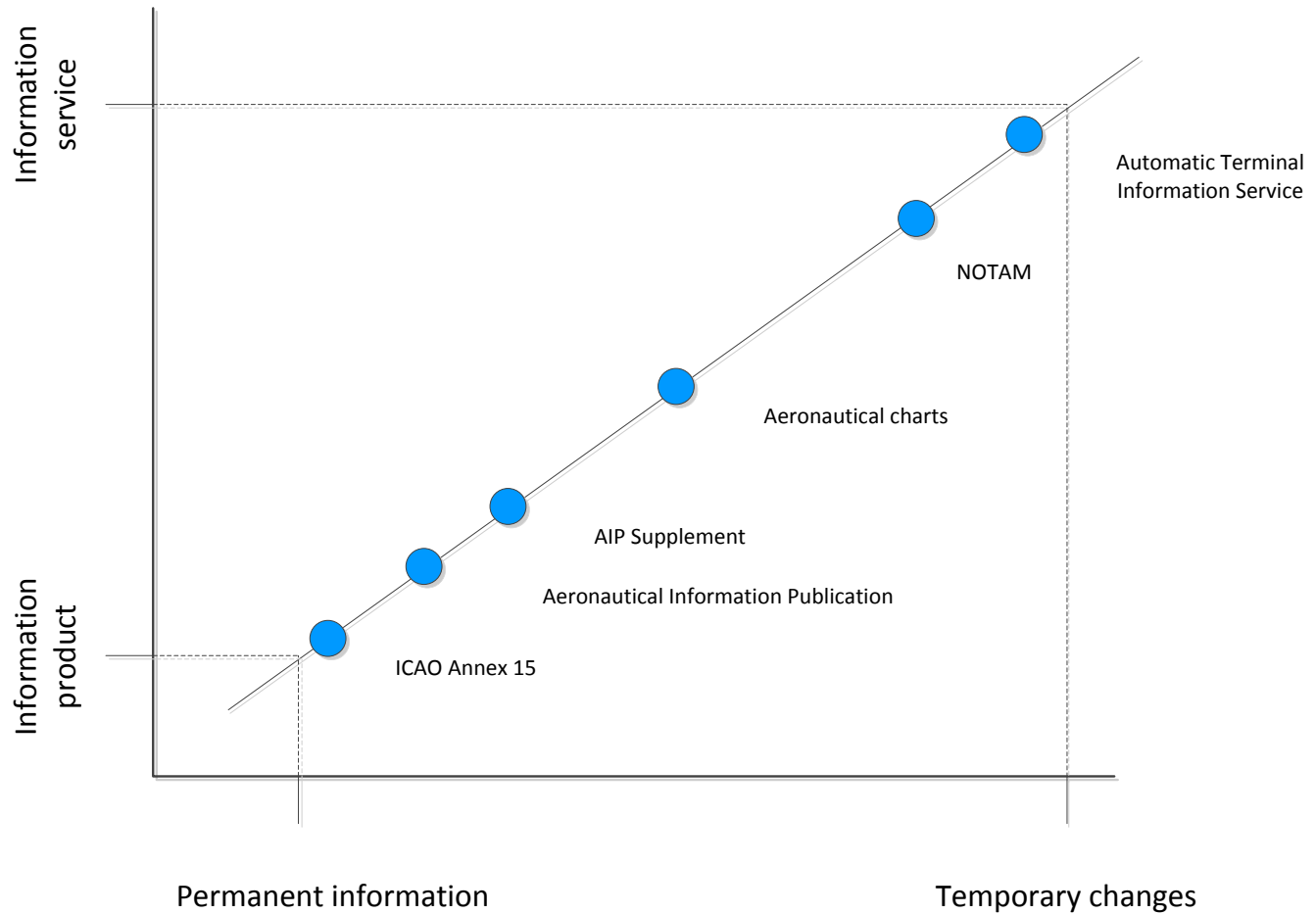
Operational reporting – the current picture
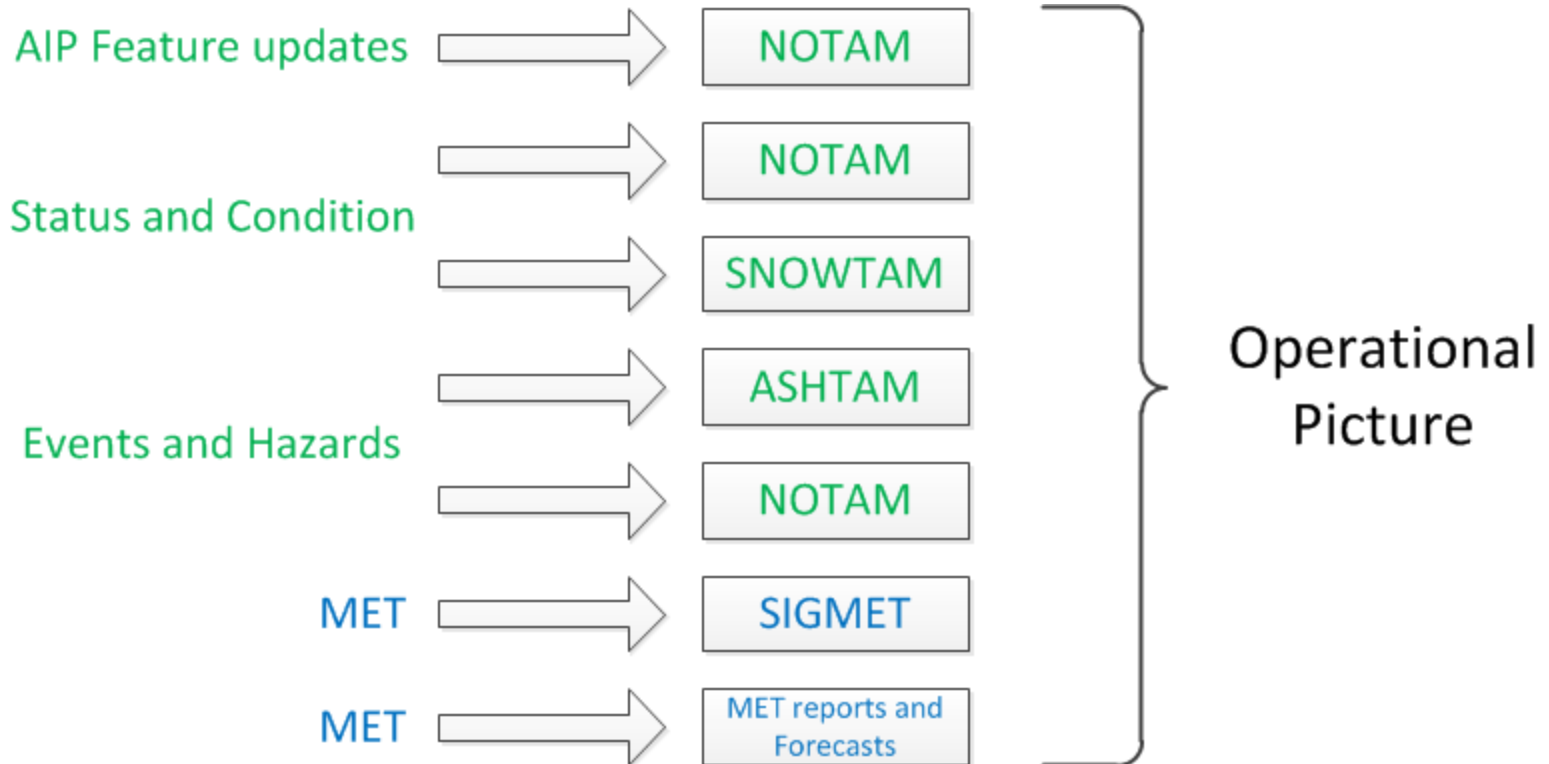
Information from Source to user
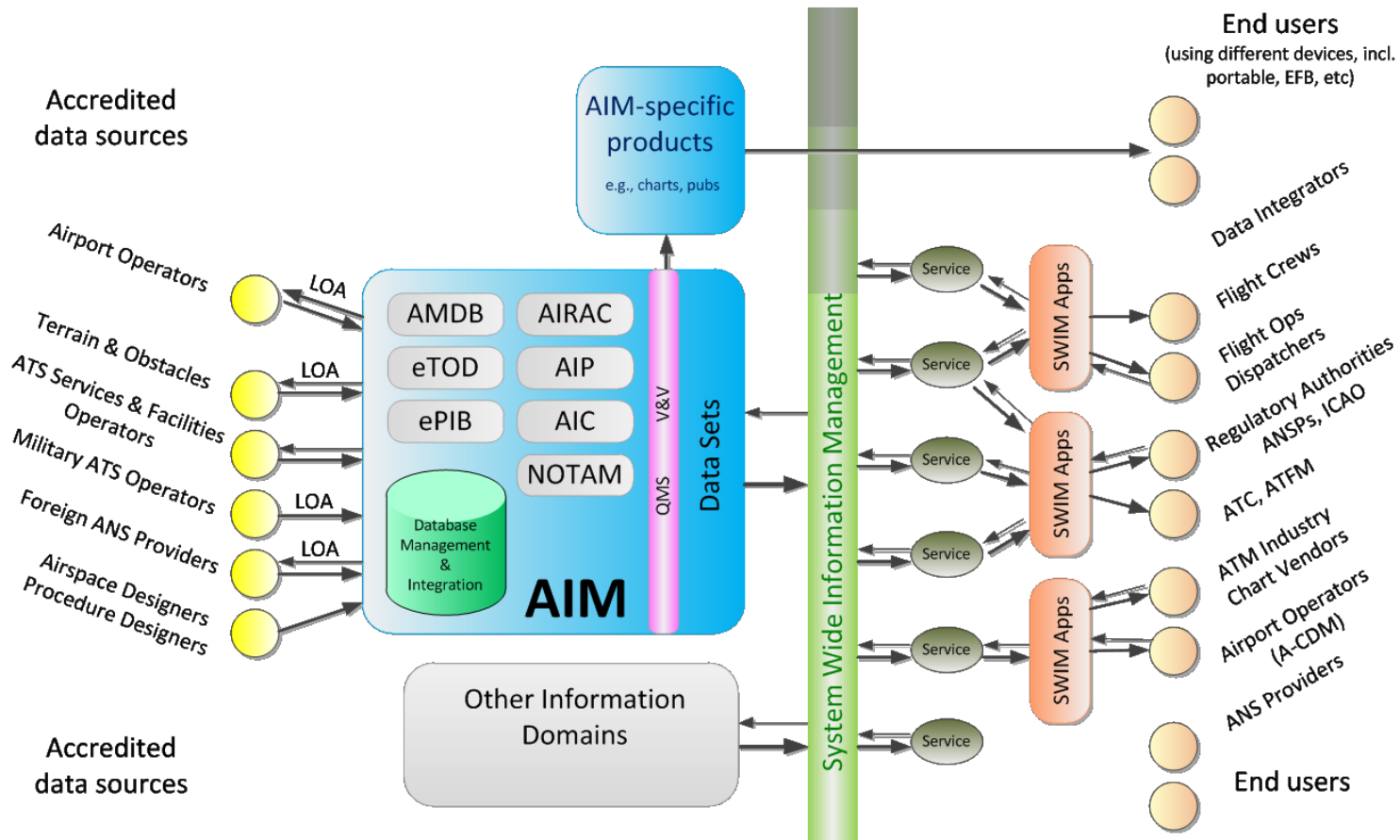
Summary

- AIM is one DOMAIN under concept development
- The Concept is an important unifying element ensuring that "everyone is on the same page"
- There is a need to look at how information will be aggregated across domains for the benefit of improved operational awareness.
- Current roadmaps are very "domain specific"
- More detail is need for effective transition planning.
- Not all aspects are currently mapped in the ASBU framework
- CONOPS development should focus on the user perspective

Questions