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Awareness workshop on the Roadmap of Aeronautical Meteorological (MET) Information in System-Wide Information Management (SWIM)

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A glance on the System Wide Information Management (SWIM

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Some Terminologies related to SWIM

Governance. The set of bodies, standards, policies and processes that ensure globally interoperable information is provided by reliable, trusted services

Information. The result of the assembly, analysis, formatting and documenting of data, to make the data useful in an ATM context.

Information service. A type of service in a service-oriented architecture that provides an ATM-related information -sharing capability

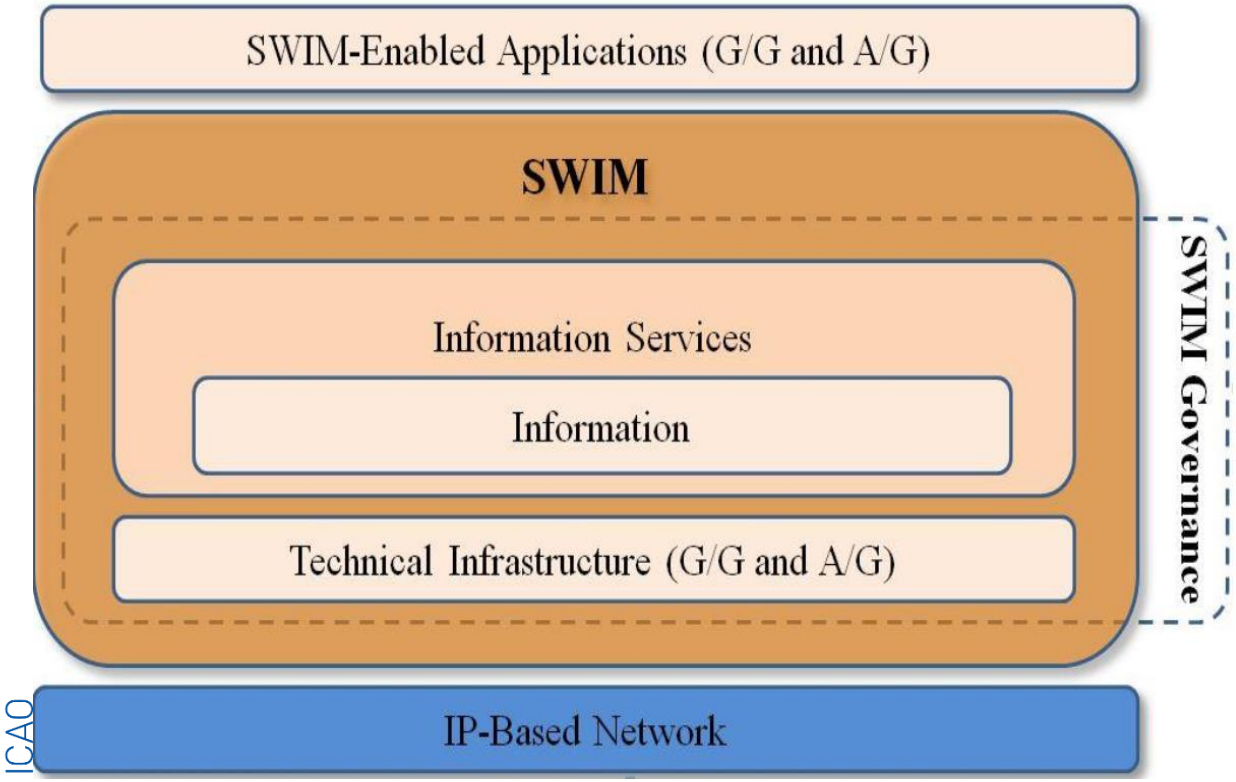
Interoperability. The ability of information and communication technology (ICT) systems, and of the business processes they support, to exchange data and to enable the sharing of information and knowledge.

Quality of service. The degree or level of confidence that the performance of a service meets a user's requirements.

Service provider. An entity (person or organization) offering the use of capabilities by means of a service

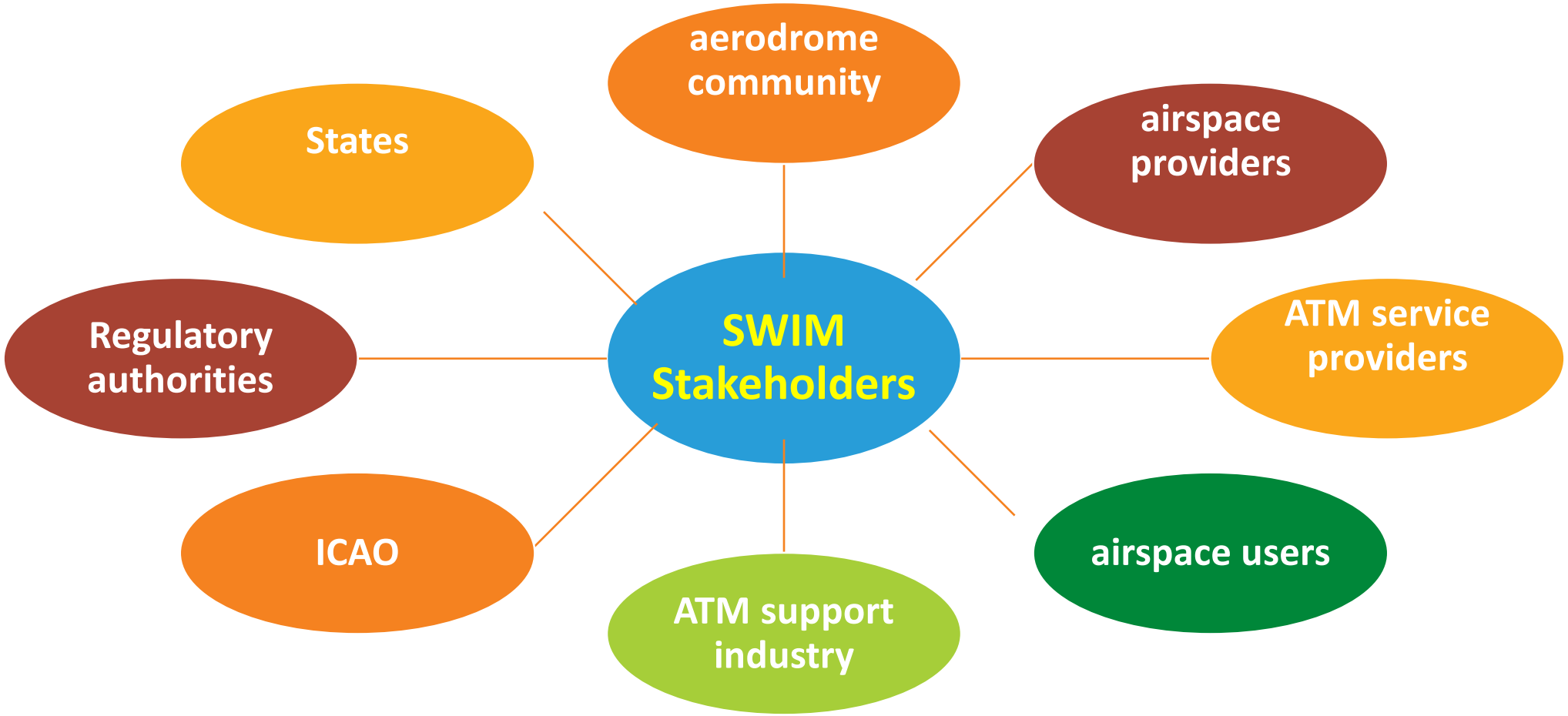
Technical infrastructure. The assembly of software and hardware used to enable the provision of information services

SWIM definition & SWIM Componenents



- SWIM consists of **standards**, **infrastructure** and **governance** enabling **the management of the ATM-related information** and its **exchange between qualified parties via interoperable services**.
- The **scope of SWIM** includes **information exchange standards and the infrastructure required** to exchange information between **SWIM-enabled applications**.
- ATM SWIM-enabled applications consume or provide SWIM information services using SWIM standards

SWIM STAKEHOLDERS AND ROLES (1/2)



SWIM STAKEHOLDERS AND ROLES (2/2)

SWIM stakeholders can have distinct roles aligned with the components of SWIM: information, information services, technical infrastructure and governance. The following roles can be distinguished:

- **The originator** produces data and information as an information service payload;
- **The information service provider** integrates, transforms and disseminates the payload via an information service, or provides the technical infrastructure over which the information service is delivered;
- **The information service consumer** uses the information service or the technical infrastructure; and
- **The regulator** ensures that policies are followed, and requirements are met.

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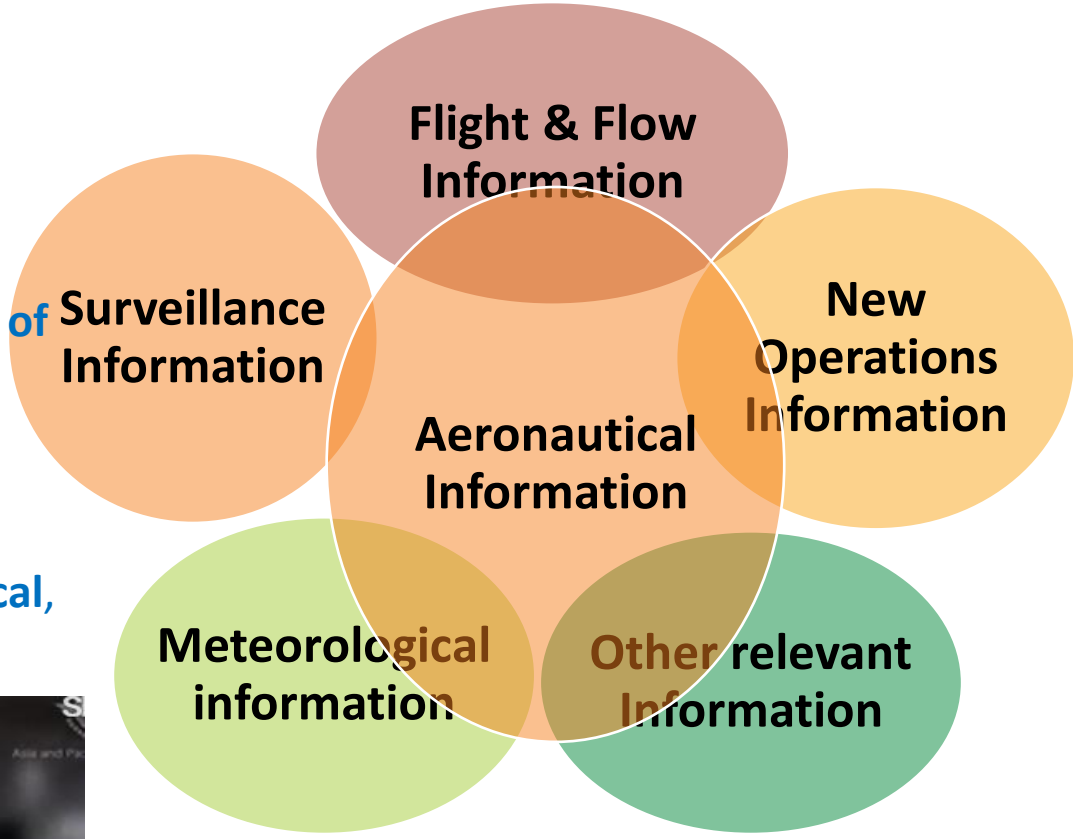
Information Domains

- SWIM supports the exchange of ATM related information.
- **Information is categorized into information domains** that comprise integrated information for a distinct **set of business activities** that produce unique information products and services.
- Some information domains have a **dedicated information exchange model,** for example, **aeronautical**, **flight** and **flow** and **meteorological information**



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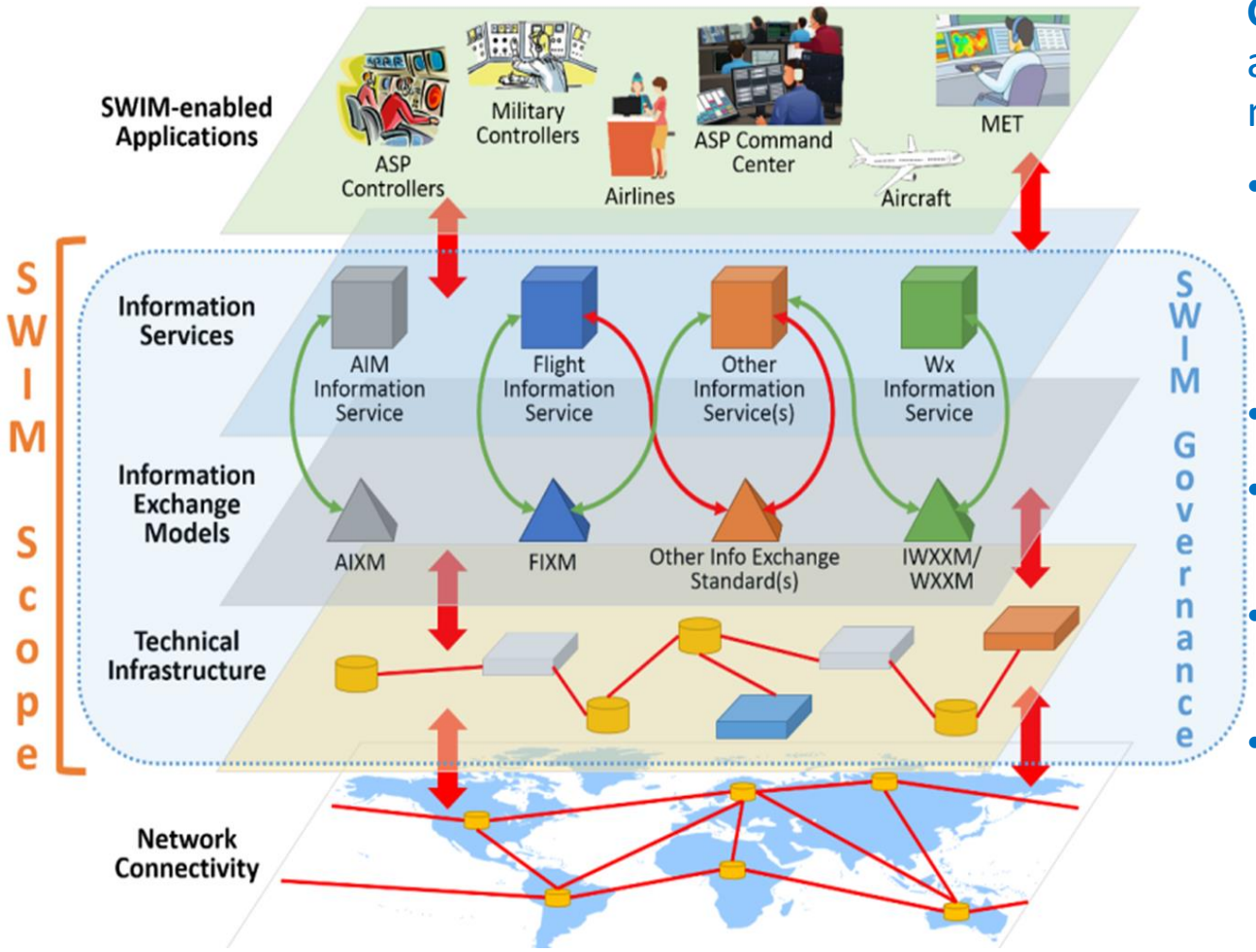
Global interoperability framework



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

- **Establish a common set** of rules, policies, processes and standards for information, information services and technical infrastructure;
- **Define and establish governance structures**;
- **Define the processes for the development, approval, and evolution of standards**;
- **Promote information interoperability** among stakeholders; and
- **Define the transition to a SWIM environment** through national or regional arrangements.

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GLOBAL INTEROPERABILITY (1/2)

In the context of SWIM, **interoperability**:

- is **the ability** of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable sharing of information and knowledge;
- **enables systems that belong to different organizations** to **communicate** and **exchange** information; and
- **enables systems to interpret the** information in a meaningful manner and to agree on the information required.

Achieving interoperability involves considerations at multiple levels including:

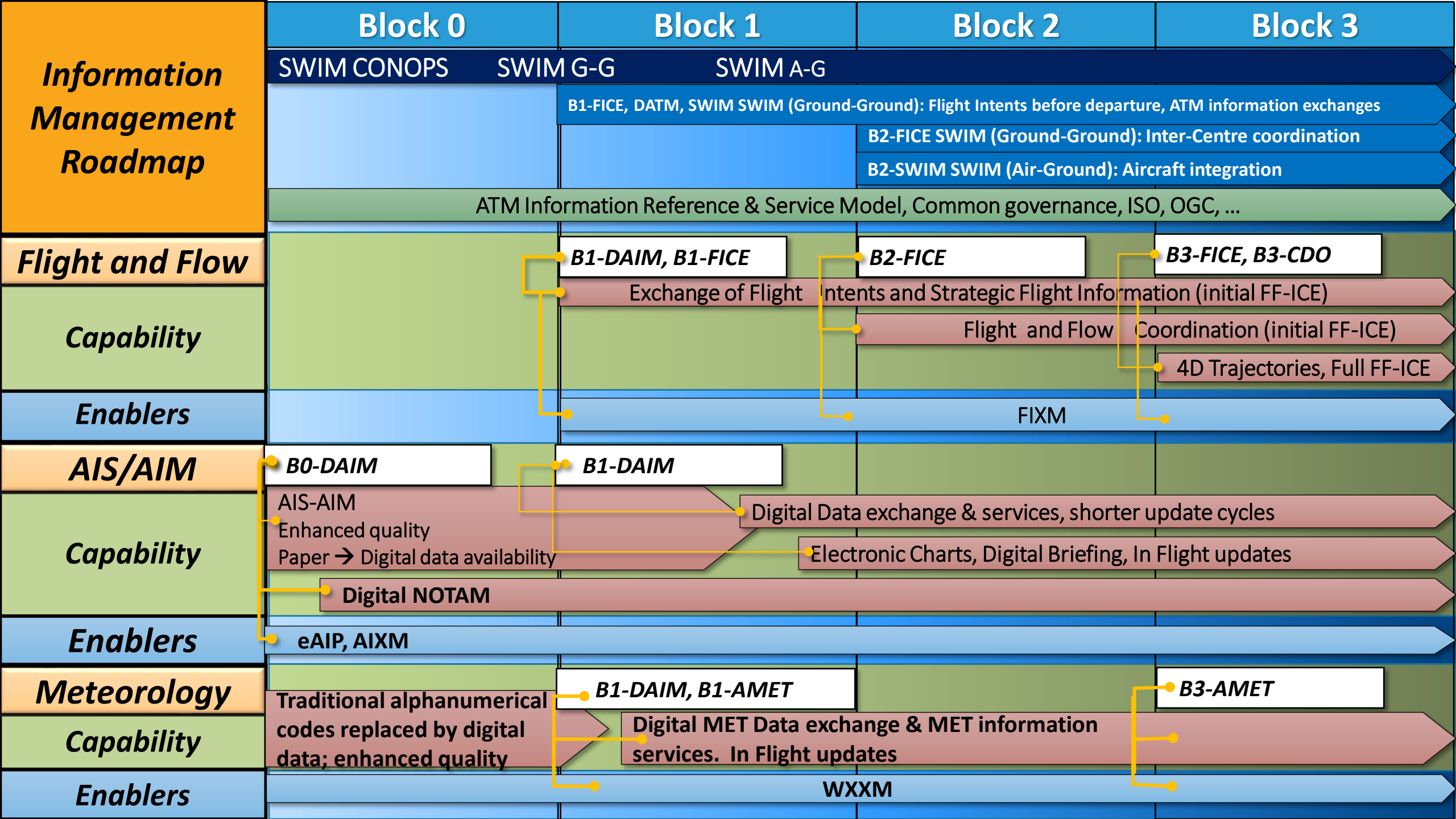
- **Organizational level** (e.g., business processes and rules);
- **Information level** (e.g., meaning of information and shared knowledge); and
- **Technical level** (e.g., network level protocols).

GLOBAL INTEROPERABILITY (2/2)

Interoperability alignments occur when using:

- specific standards and specifications, for example, IP, hypertext transfer protocol (HTTP);
- Advanced message queuing protocol (AMQP, transactional web feature service (WFS-T), web map service (WMS)
- Extensible markup language (XML) schema, JavaScript object notation (JSON), etc.;
- Newly created specifications (e.g., IWXXM).

***Note**: **IWXXM** is a first step leading to the integration of meteorological information based on the use of an XML schema for a number of products currently defined in Annex 3 — Meteorological Service for International Air Navigation*


Information Management Roadmap
Block 0
Block 1
Block 2
Block 3
SWIM CONOPS
SWIM G-G
SWIM A-G
B1-FICE, DATM, SWIM SWIM (Ground-Ground): Flight Intents before departure, ATM information exchanges
B2-FICE SWIM (Ground-Ground): Inter-Centre coordination
B2-SWIM SWIM (Air-Ground): Aircraft integration
ATM Information Reference & Service Model, Common governance, ISO, OGC, …
Flight and Flow
Capability
Enablers
B1-DAIM, B1-FICE
B2-FICE
B3-FICE, B3-CDO
Exchange of Flight Intents and Strategic Flight Information (initial FF-ICE)
Flight and Flow Coordination (initial FF-ICE)
4D Trajectories, Full FF-ICE
FIXM
AIS/AIM
Capability
Enablers
B0-DAIM
B1-DAIM
AIS-AIM
Enhanced quality
Paper → Digital data availability
Digital Data exchange & services, shorter update cycles
Electronic Charts, Digital Briefing, In Flight updates
Digital NOTAM
eAIP, AIXM
Meteorology
Capability
Enablers
Traditional alphanumerical codes replaced by digital data; enhanced quality
B1-DAIM, B1-AMET
B3-AMET
Digital MET Data exchange & MET information services. In Flight updates
WXXM

Thank You!

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