ICAO – Global Air Navigation Plan

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on behalf of
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Technical Officer, Information Management

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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.
Guiding principles

- Safety
- Human
- Technology
- Collaboration
- Continuity
- Information

The ATM community will depend extensively on the provision of timely, relevant, accurate, accredited and quality-assured information to collaborate and make informed decisions. Sharing information on a system-wide basis will allow the ATM community to conduct its business and operations in a safe and efficient manner.
Aviation is undergoing a fundamental change
DRIVERS FOR CHANGE

• Expectations of the ATM community
  – Expected benefits
    • Airspace users
    • Service providers
    • Regulators
  – Total system performance framework
    • Competing expectations to be balanced
Concept components

AOM — Airspace organization and management
DCB — Demand/capacity balancing
AO — Aerodrome operations
TS — Traffic synchronization
CM — Conflict management
AUO — Airspace user operations
ATM SDM — ATM service delivery management
Information: Key for evolution

Global information utilization, management and interchange enabling…

… the future of the air navigation system
Information Service Requirements

- System-wide information management
- Accredited, quality-assured and timely information
- Nature of information
- Validity period
- Integrated picture
- Aviation data standard and reference system
- Information exchange protocols and procedures
- Collection and integration
- Reduction in transactional friction
Information Service Requirements

- Relevant operational information available
- Optimize flight operations management
- Optimize 4-D trajectory planning and operation
- Status of ATM system resources
- Flight parameters and aircraft performance characteristics
- Access to MET information
- Standards for meteorological model
- Environmental performance targets
Information Management

• Functions:
  – Provide accredited, quality-assured timely information
  – Monitor and control quality of shared information
  – Provide information-sharing mechanisms

• Meeting expectations ATM community
Aeronautical Information

• Temporality and issuance concepts
  – Overload
  – Intelligent IM

• Media
  – Fully electronic
  – Networked environment
Meteorological information

• Integrated function
• Tailored
  – Meet ATM requirement
• Main benefits
• Performance management
  – Quality Assurance
GANP 2013

“Increase the capacity and improve the efficiency of the global civil aviation system”

• Through the GANP, offer a long-term vision to assist all aviation stakeholders, and ensure continuity and harmonization among modernization programmes

• Through the Aviation System Block Upgrades (ASBU), provide a consensus-driven modernization framework for integrated planning based on performance
GANP 2016

• Objectives
  – International and overarching framework of a global investment plan: make it more usable towards implementation
  – Keep it stable while making the necessary updates/additions
  – Adjust the periodicity to the Assembly and ICAO editing cycles

• A Planning Document for Implementation
  – GANP should serve as a comprehensive planning tool to support the development and implementation of a harmonized global air navigation system
2019 Update of the GANP

Multilayer Structure

- Web based application: reports
- Global Frameworks: BBBs & ASBUs
- Performance-based Approach
- Performance-based decision making method for defining implementation strategies
- KPIs Catalogue

2019 Update of the GANP

- Multilayer Structure
- Front door for all stakeholders to ICAO
- Document endorsed at highest political level
- Written in executive language
- Contents derived from underlying
- Global Performance Ambitions
- ANP with the template approved by ICAO Council
- Online tool for PfAs
Global Air Navigation Planning

- 2002
- 2007
- 2013
- 2016
Key concepts

- **ASBU Block**: a six year timeframe whose starting date defines a deadline for an element to be available for implementation.
- **ASBU Thread**: key feature area of the air navigation system that needs improvement in order to achieve the vision outlined in the Global ATM Operational Concept.
- **ASBU Module**: a group of elements from a thread that, according to the enablers’ roadmap, will be available for implementation within the defined deadline established by the ASBU Block.
- **ASBU Element**: a specific change in operations designed to improve the performance of the air navigation system under specified operational conditions.
- **ASBU Enabler**: component (standards, procedures, training, technology, etc) required to implement an element.
GANP 2019: ASBU Framework

- Template:
  - **PART 1:**
    - Concept of operations in different Blocks
  - **PART 2:**
    - List of operational improvements in that ASBU thread
GANP 2019: ASBU Framework

• Template:
  – PART 3:
    • For each element listed in PART 2: description, dependencies, scope,…
  – PART 4:
    • Enablers for each element
GANP 2019: ASBU

- **Template:**
  - **PART 5:**
    - Applicability
    - Performance impact
  - **PART 6:**
    - Performance objectives
Performance Improvement Areas

Greener Airports

Globally Interoperable Systems and Data

Optimum Capacity and Flexible Flights

Efficient Flight Path

Module
GLOBALLY INTEROPERABLE SYSTEMS AND DATA (SWIM)
Performance Improvement Areas

- Greener Airports
- Globally Interoperable Systems and Data
- Optimum Capacity and Flexible Flights
- Efficient Flight Path

Block 0
- FICE
- DATM
- AMET
- SWIM

Block 1

Block 2

Block 3
AMET: MET INFORMATION

• MET information vs. existing products
  – Information = phenomenon/parameter and data characteristics such as severity, accumulation, intensity, probability of occurrence, confidence/uncertainty of forecasts and reliability, etc.
AMET Block 0

- **Concept of operations**
  - *Global, regional and local meteorological information to support flexible airspace management, improved situational awareness, collaborative decision-making and dynamically optimized flight trajectory planning.*

- **Elements**
  - AMET-B0/1 Meteorological observation products
  - AMET-B0/2 Meteorological forecast products
  - AMET-B0/3 Climatological and historical meteorological products
  - AMET-B0/4 Dissemination of meteorological products
<table>
<thead>
<tr>
<th>AMET-B0/1</th>
<th>METEOROLOGICAL OBSERVATIONS PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Meteorological observations in support of flexible airspace management, improved situational awareness, collaborative decision-making and dynamically optimized flight trajectory planning.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Provision of additional observations. More automated observations. Higher temporal and spatial resolution for lightning, radar and satellite information.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMET-B0/2</th>
<th>METEOROLOGICAL FORECAST PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Meteorological forecasts (including advisories and warnings) in support of flexible airspace management, improved situational awareness, collaborative decision-making and dynamically optimized flight trajectory planning.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Greater resolution (spatial and temporal) of gridded WAFS information. ICE, TURB, CB WAFS. Improved visualisation of meteorological forecast products.</td>
</tr>
<tr>
<td>AMET-B0/3</td>
<td>CLIMATOLOGICAL &amp; HISTORICAL METEOROLOGICAL PRODUCTS</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td><strong>Main purpose</strong></td>
<td>Climatological products in support of the design and planning of infrastructure, flight routes and airspace management. Historical meteorological observations, forecasts, advisories and warnings in support of incident and accident investigation.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Nil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMET-B0/4</th>
<th>DISSEMINATION OF METEOROLOGICAL PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Dissemination of meteorological products in support of flexible airspace management, improved situational awareness, collaborative decision-making and dynamically optimized flight trajectory planning</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Commencement of the exchange of meteorological information using the ICAO Meteorological Information Exchange Model (IWXXM), being the conversion of Traditional Alphanumeric Code (TAC), using an IWXXM schema, into XML/GML.</td>
</tr>
</tbody>
</table>
AMET Block 1

• Concept of operations
  - *Meteorological information supporting automated decision process or aids, involving meteorological information, meteorological information translation, ATM impact conversion and ATM decision support.*

• Elements
  - AMET-B1/1 Meteorological observation information
  - AMET-B1/2 Meteorological forecast information
  - AMET-B1/3 Climatological and historical meteorological information
  - AMET-B1/4 Meteorological information in SWIM
<table>
<thead>
<tr>
<th>AMET-B1/1</th>
<th>METEOROLOGICAL OBSERVATIONS INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main purpose</td>
<td>Meteorological observations information in support of automated decision process or aids, involving meteorological information, meteorological information translation, ATM impact conversion and ATM decision support.</td>
</tr>
<tr>
<td>New capabilities</td>
<td>Commencement of change from product-centric to data-centric information. Space weather information. Sulphur dioxide (SO₂) services. Enhanced hazardous weather services.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMET-B1/2</th>
<th>METEOROLOGICAL FORECAST INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main purpose</td>
<td>Meteorological forecast information (including warnings) in support of automated decision process or aids, involving meteorological information, meteorological information translation, ATM impact conversion and ATM decision support.</td>
</tr>
<tr>
<td>New capabilities</td>
<td>Commencement of change from product-centric to data-centric information. Space weather information. Sulphur dioxide (SO₂) services. Enhanced hazardous weather services.</td>
</tr>
<tr>
<td>AMET-B1/3</td>
<td>CLIMATOLOGICAL AND HISTORICAL METEOROLOGICAL INFORMATION</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>Main purpose</td>
<td>Climatological products in support of the design and planning of infrastructure, flight routes and airspace management. Historical meteorological observations, forecasts, advisories and warnings in support of incident and accident investigation.</td>
</tr>
<tr>
<td>New capabilities</td>
<td>Climatological data. Climate change information.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMET-B1/4</th>
<th>METEOROLOGICAL INFORMATION IN SWIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main purpose</td>
<td>Meteorological information in SWIM in support of automated decision process or aids, involving meteorological information, meteorological information translation, ATM impact conversion and ATM decision support.</td>
</tr>
<tr>
<td>New capabilities</td>
<td>Meteorological information in ICAO Meteorological Information Exchange Model (IWXXM) form starts to replace traditional alphanumeric code (TAC) products. Human-readable products will start to be derived from the IWXXM information (rather than the other way around). The introduction of web services allows for progressive replacement of fixed line dissemination systems.</td>
</tr>
</tbody>
</table>
DATM: Aeronautical Information

- Digital vs. Paper documentation & telex-based text messages.
- Quality management
  - Through aeronautical information service (AIS) to aeronautical information management (AIM) implementation, use of aeronautical information exchange model (AIXM), migration to electronic aeronautical information publication (eAIP) and better quality and availability of aeronautical data.

- Cross-domain information exchange
- Access via internet-protocol-based tools
DATM Block 0

• Concept of operations
  – Aeronautical information which encompass improved data quality (accuracy, resolution, integrity, timeliness, traceability, completeness, format), timely distribution of information, digital exchange and processing of information, and more efficient management of aeronautical information to avoid reliance on manual processing and manipulation. Quality-assured aeronautical information is essential.

• Elements
  – DATM-B0/1 Provision of quality-assured aeronautical data and information
  – DATM-B0/2 Provision of digital AIP data sets
  – DATM-B0/3 Provision of digital terrain data sets
  – DATM-B0/4 Provision of digital obstacle data sets
  – DATM-B0/5 Provision of digital instrument flight procedure data sets
  – DATM-B0/6 Provision of digital aerodrome mapping data sets
  – DATM-B0/7 NOTAMs improvement
<table>
<thead>
<tr>
<th>AIM-80/1</th>
<th>Provision of quality-assured aeronautical data and information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main purpose</td>
<td>The main purpose of this element is to ensure that aeronautical data and information comply with quality standards in order to meet the needs of airspace users and support the safety of flight operations.</td>
</tr>
</tbody>
</table>
| New capabilities | 1) Implementation of quality management systems to ensure that aeronautical data and information comply with the required standards.  
2) Use of common reference systems (spatial – WGS84 and temporal– AIRAC) to facilitate consistent interpretation of aeronautical data and information and facilitate their timely exchange.  
3) Full move into an automated data-centric environment so that the management, processing, verification, usage and exchange can be done in a structured, automatic manner and human intervention is reduced.  
4) Aeronautical data and information is of high quality if it is aggregated and provided by authoritative sources. This requires to properly control relationships along the whole data chain from the origination to the distribution to the next intended user (formal arrangements with data originators, neighbouring States, data and information service providers and others). |
<table>
<thead>
<tr>
<th>AIM-B0/2</th>
<th>Provision of digital AIP data sets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>The purpose of this element is to introduce the capability to provide AIP data sets to users in an interoperable and mutually-understood manner.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Replacement of existing sections of the AIP through the provision of digital AIP data sets. AIM envisions a migration to a data-centric environment where aeronautical data and information (AIP) will be provided in a digital form through the use of information exchange models (e.g. AIXM) and in a structured way.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIM-B0/3</th>
<th>Provision of digital terrain data sets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>The purpose of this element is to introduce the capability to provide terrain data sets to users in an interoperable and mutually-understood manner.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Provision of terrain data as digital data sets. AIM envisions a migration to a data-centric environment where terrain data will be provided in a digital form and in a structured way.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIM-B0/4</th>
<th>Provision of digital obstacle data sets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>The purpose of this element is to introduce the capability to provide obstacle data to users in an interoperable and mutually-understood manner.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Provision of obstacle data as digital data sets. AIM envisions a migration to a data-centric environment where obstacle data will be provided in a digital form through the use of information exchange models (e.g. AIXM) and in a structured way.</td>
</tr>
<tr>
<td>AIM-B0/6</td>
<td>Provision of digital Instrument flight procedure data sets</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Main purpose</strong></td>
<td>The purpose of this element is to introduce the capability to provide instrument flight procedure data to users in an interoperable and mutually-understood manner. It also includes the need to use specific criteria for coding instrument flight procedures to ensure compliance with the navigation specifications, consistency in design, coding and operation of PBN procedures and avoid differences in the aircraft behaviour in response to the coded path terminators.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Provision of instrument flight procedure data as digital data sets. AIM envisages a migration to a data centric environment where instrument flight procedure data will be provided in a digital form through the use of information exchange models (e.g. AIXM) and in a structured way. Applying new rules for coding instrument flight procedures will limit the number of allowable path terminators for PBN procedures in compliance with the PBN Navigation Specifications.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIM-B0/7</th>
<th>NOTAM improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>To provide timely and relevant information about status and condition of the ANS infrastructure to the next intended users via NOTAM.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>1) Identification of clear operational conditions to determine when a NOTAM shall or shall not be originated, thus ensuring that the information provided meets the needs of the users. 2) Replacement of paper NOTAMs by a digital version through the use of Information exchange models (e.g. AIXM), thus enhancing the quality of information provided.</td>
</tr>
</tbody>
</table>
DATM Block 1

- Concept of operations
  - This module addresses the need for increased aeronautical information integration and will support a new concept of ATM information exchange fostering access via internet-protocol-based tools based on service orientation in accordance with the SWIM concept. Additional aeronautical information may be required.

- Elements
  - DATM-B1/1   AIM requirements to support NOPS-B1/5

<table>
<thead>
<tr>
<th>AIM-B1/1</th>
<th>AIM requirements to support NOPS-B1/5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main purpose</td>
<td>Provide additional AIM information regarding airspace usage plan to support enhanced Network operations features</td>
</tr>
<tr>
<td>New capabilities</td>
<td>Airspace usage plan (AUP) and User usage plan (UUP) are exchanged using SWIM.</td>
</tr>
</tbody>
</table>
• Manual vs. digital transfer of flight data. TBO foundation.
  – Implement pre-flight collaborative coordination and maintenance of advanced flight information: improved response to operators flight preferences.
FICE Block 0

• Concept of operations
  – *To improve coordination between air traffic service units (ATSUs) by using ATS basic interfacility flight data communication. The benefit is the improved efficiency through digital transfer of flight data.*

• Elements
  – FICE-B0/1 Automated basic Inter facility data exchange
<table>
<thead>
<tr>
<th>FICE-B0/1</th>
<th><strong>Automated basic Inter facility message exchange</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>To improve message exchange between ATS facilities by automating it.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Replacement of coordination via voice by automatic message exchange</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>This element represents a first automation step in the evolution of the coordination between neighbouring ATS units to guarantee that all related and necessary flight information will be available to the other unit as per agreement.</td>
</tr>
</tbody>
</table>
FICE Block 1

- Concept of operations
  - Establish foundation for TBO by enabling exchange of advanced flight information between operators and ATM and unique identification of the flight. Implement pre-flight collaborative coordination and maintenance of advanced flight information: improved response to operators flight preferences. Capacity and demand balancing improvement (better capacity utilization) due to timely and accurate flight information.

- Elements
  - FICE-B1/1 Flight Information Exchange Model (FIXM)
  - FICE-B1/2 eFPL processing
  - FICE-B1/3 Planning Service
  - FICE-B1/4 Flight Plan Information Requests
<table>
<thead>
<tr>
<th><strong>FICE-B1/1</strong></th>
<th><strong>Flight Information Exchange Model</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Provide and extensible XML schema to support the services envisioned by FF-ICE Step 1 Provisions as well as for the use by ATC/ATM applications e.g. NOPS, APTA, etc.</td>
</tr>
</tbody>
</table>
| **New capabilities** | - Support the exchange of the Globally Unique Flight Identifier (GUFI) as prescribed in the FF-ICE Manual.  
- Support for data in the current ATS messages of interest in PANS-ATM Appendix 3  
- Support for new content envisioned for FF-ICE/1, e.g. 4D Trajectories, to be described in the new PANS-ATM Appendix 7 being developed for ATMRPP.  
- Support for messaging, such as addresses, versioning, message numbers which supports FIXM in the FFICE and SWIM environment |
<table>
<thead>
<tr>
<th>FICE-B1f2</th>
<th>eFPL processing (basic element)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Provides for full flight plan processing that includes full constraint testing and enhanced flight information sharing.</td>
</tr>
</tbody>
</table>
| **New capabilities** | An ATM Service Provider (ASP) implementing FF-ICE must accept any valid Filed Flight Plan, i.e. whether with minimum required content or any of the more advanced content. The ASP must also decide whether and how to take advantage of more advanced content provided by the operator to include:  
  - Climb and descent performance data to allow more accurate and consistent calculation of 4D Trajectories by the service provider.  
  - Operator-calculated 4D-Trajectory to allow understanding by the service provider of the operator expectations.  
  - Operator constraints that the service provider can take into account when assessing the flight and developing a clearance. |
<table>
<thead>
<tr>
<th><strong>FICE-B1/3</strong></th>
<th>Planning Service (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Allows flight operator to test portions of proposed flights with advanced service providers as part of the flight planning cycle.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>To provide the Planning Service, a provider needs at a minimum to be able to determine relevant constraints applicable to a flight and feed them back to the operator. A service provider that supports Preliminary Flight Plans and provides feedback must also evaluate whether to provide a “re-evaluation” service, i.e. updates to the feedback that reflect changes to constraints after the initial feedback is provided.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FICE-B1/4</strong></th>
<th>Flight Plan Information Requests (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Makes available a query and reply service allowing an operator to query the service providers for information on one of its flights - allows an operator to verify the status of a flight previously submitted.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>A service provider implementing FF-ICE must at a minimum support flight plan information requests that replicate the function of the RQP and RQS messages and allow another service provider or operator to request an FF-ICE flight plan, or supplementary information about a flight in FF-ICE format.</td>
</tr>
</tbody>
</table>
SWIM: INFORMATION MANAGEMENT

- ATS messages vs. SWIM.
  - Enabler for all envisioned ATM information exchange in support of ATM operations
- Point-to-point connectivity and protocols using pre-defined messages
- Advanced exchange of ATM information via a secure aviation intranet
SWIM Block 1

• Concept of operations
  – System Wide Information Management replaces the current point-to-point technologies by a secure aviation intranet relying on internet technologies for providing information (exchange) services to the entire ATM community. In order to facilitate information exchange through standardised SWIM information services via, for example, request/reply or publish/subscribe exchange patterns, common data models and service descriptions are defined and appropriate governance rules are established. This thread is not in itself an operational improvement but rather a fundamental enabler to support all ATM improvements that require information to be made available.
SWIM Block 1

• Elements
  – SWIM-B1/1 SWIM information service provider
  – SWIM-B1/2 SWIM information service consumer
  – SWIM-B1/3 SWIM registry
<table>
<thead>
<tr>
<th>SWIM-B1/1</th>
<th>SWIM Information service provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Provide an information service provider the tools to make available ATM information in a SWIM environment</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>Information services are exposed to the ATM community preferably via a registry. Via the registry metadata specifying the characteristics of the provided information are made available in an information service description. SWIM Information services support request/reply or publish/subscribe access mechanisms. Information Service provider provides access to their services thanks to access point that are made available to the authorized users.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SWIM-B1/2</th>
<th>SWIM Information service consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main purpose</strong></td>
<td>Provide an information service consumer the tools to access and use ATM information in a SWIM environment</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>A SWIM information consumer has access to registries in order to discover the information services available. SWIM Information service consumer may need metadata mining capabilities if they want to automatically understand the information offering provided in the service description. Request and subscribe exchange patterns have to be supported as those are SWIM information access mechanisms. Capability to connect to an IP access point as SWIM services is made available over an IP infrastructure.</td>
</tr>
<tr>
<td>SWIM-B1/3</td>
<td>SWIM registry</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td><strong>Main purpose</strong></td>
<td>To provide a mechanism to discover and ultimately access SWIM information services within an internet-based ATM information environment.</td>
</tr>
<tr>
<td><strong>New capabilities</strong></td>
<td>A registry is the preferred means to discover and provide relevant ATM information services. It offers the SWIM service provider with the capability to expose SWIM information services to potential consumers. A registry enables a SWIM service consumer to discover and find sufficient description (namely metadata) about SWIM information services. Provide the capability for managing the metadata in the registry. Registry includes user access control mechanism.</td>
</tr>
</tbody>
</table>
What does this mean in real life?

https://www.faa.gov/tv/?mediald=1437
THANK YOU