



ICAO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



AIM

the Key to Interoperability

Role of the Data Integration in AIM
RO Aeronautical Information Management



Mexico City, Mexico, 04 February 2020



What is AIM ?

Aeronautical Information Management. (ICAO) Dynamic, integrated management of aeronautical data and information – safety, high quality and efficient – through the provision and exchange of quality controlled and assured digital-electronic aeronautical data and information in collaboration with all involved parties (AIM 1.0)

Information Management. Is the digital and electronic collection - management of data and information. Management means initially the organization of and control over the structure of processing and delivery of data and information (AIM 2.0) in support to SWIM



Who are the AIM stakeholders?

State Civil Aviation Authority

State government organization responsible for the safety, regularity and efficiency of national and international aviation within its borders

State Designated Service Provider

An organization, often referred to as an ANSP, which has been designated by a State to fulfill some of the State obligations for AIM/AIS provision. ANSPs

End Users

Pilots, aircraft operators, ATS organizations, flight support organizations and other entities that use aeronautical information to support safe, efficient and orderly flight operations

There are generally four levels of AIM stakeholders, each with different roles, responsibilities, obligations and needs



AIM - Data Centric

- **Data Integration**
 - ✓ **Mainly Data focused**
- **CAAs / ANSPs**
 - ✓ **Mainly eProducts focused**
- **End users**

AIM/AIS offices (CAAs, ANSPs) around the world produce many different eProducts





ICAO

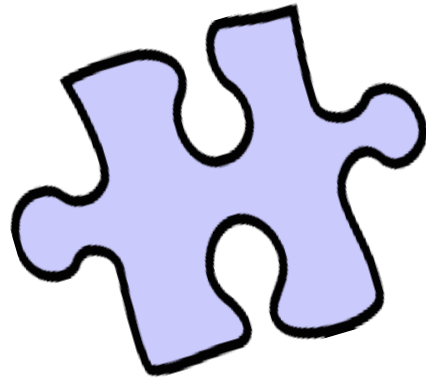
UNITING AVIATION

NO COUNTRY LEFT BEHIND



The AIM puzzle

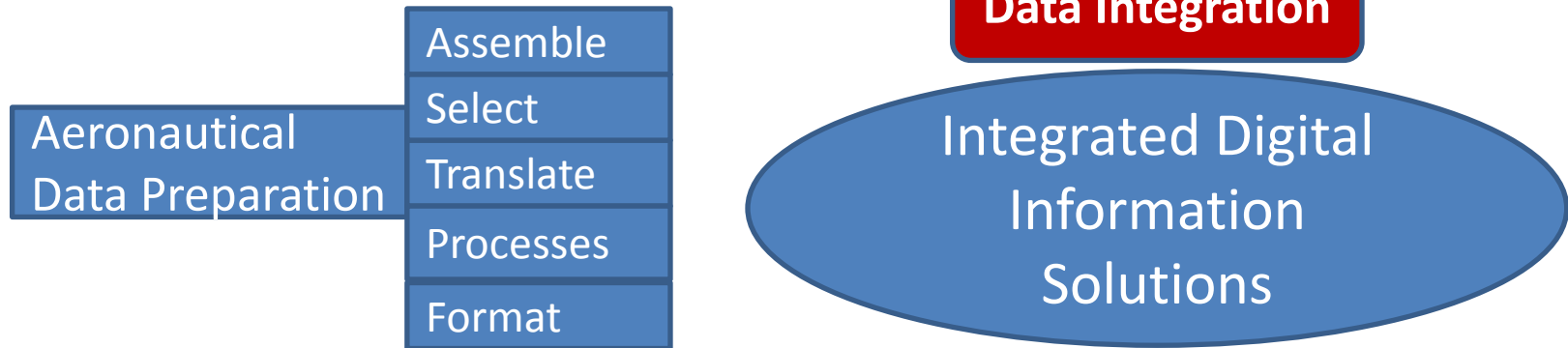
- Digital
- Timely
- Secured
- Seamless
- Interoperable
- Quality Assured
- Standardized
- Electronically
- Shared
- etc...





CAAs / ANSPs

- There is a big number of products issued by 2019 AIM offices per AIRAC cycle:
 - From Different type of sources (PDF & even paper)
 - Thousands of NOTAMs



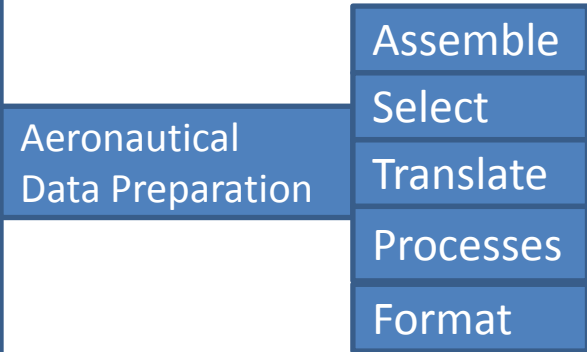


CAAs / ANSPs

- Airports
- Airport Details
- Communications
- Nav-aids
- TMAs
- STARs
- SIDs
- Final Approaches
- Departures
- Feeder Routes
- Terminal Waypoints
- High Airways
- Low Airways
- High/Low Airways
- En-route Waypoints ...

- **AIM/AIS Offices**

- Aeronautical Data and Information maintained in Geospatial Database



Data Integration

Integrated Digital Information Solutions



Interoperability - What is it and why do we need it ?

Definition

Interoperability means that an organization should be in the ongoing process of ensuring that the content, quality, format, availability and flow of data and information within the ATM system is managed to maximize opportunities for exchange and use of this data and information



Interoperability in the context of AIM



Interoperability - What is it and why do we need it ?

Based upon this definition, it should be clear that there is far more to ensuring interoperability than using compatible software and hardware



Interoperability in the context of AIM



Interoperability - What is it and why do we need it ?



Data providers, as truly interoperable organizations, integrate data from different locations and sources and they maximize the value and potential of data and information. They assure that this data and information is effectively exchanged with other equally interoperable, from the identification of relationships between previously unrelated sets of data (PANS AIM)

Interoperability in the context of AIM



Interoperability - What is it and why do we need it ?

Interoperability is needed to bridge the GAP between real and digital worlds. In the ATM system it enables and optimizes the use of new technology



Interoperability in the context of AIM



Standardized Data and Information

Interoperability requires standards

Data Integration applying ICAO standards to charts, databases and other digital and electronic products

Example:

eCharts and databases for international flights





Standardized Data and Information

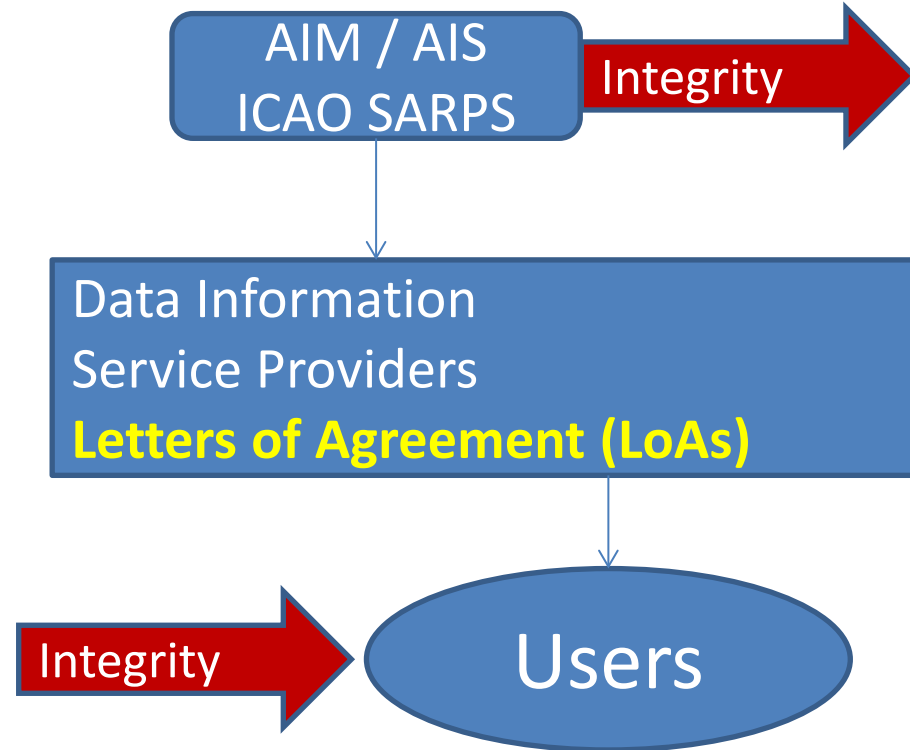
- States-provid eCharts
- Placement of all elements and symbology varies with each chart according Annex 4 and ICAO Doc, 8697
 - Standardized digital maps and data
 - Digital, electronic and printed versions
 - Uploaded to Electronic Flight Bags
 - Coded for flight management system (FMS) navigation databases





Quality Assured Data and Information

- High quality aeronautical Data and Information must be defined in AIM
- Then integrity must be maintained through the data chain.
- AIM must enable innovation and operational efficiency and on time



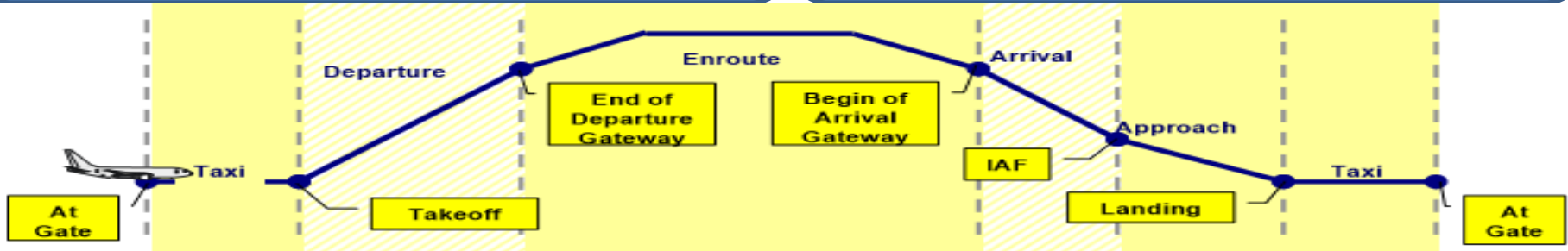


Quality Assured Data and Information

- Database maintenance uses data checks (CRC)
- Double review processes of essential and critical data by second and independent person and performed edit checks

Processing of Aeronautical Data and Information requires a strict Quality Management System (QMS) along the entire data chain processes

Digital, quality assured and interoperable data is required to move towards a seamless gate-to-gate operations





Conclusions

The AIM Puzzle comes together in partnership



- Reliable, consistent, digital, standardized and high quality data and information is fundamental to support Users applications, to assure interoperability and a seamless gate-to-gate-operations
- AIM innovation, efficiency and progress to continue in the development of SWIM Support, must include a strong ICAO support, strong State support and strong industry involvement for efficient eProducts according users need
- Access to aeronautical data and information, especially data should be shared to all stakeholders



Questions?

THANK YOU!

Raúl Armando Martínez Díaz
RO AIM
rmartinez@icao.int