



**MINISTÈRE
CHARGÉ
DES TRANSPORTS**

*Liberté
Égalité
Fraternité*



Digital Data Sets

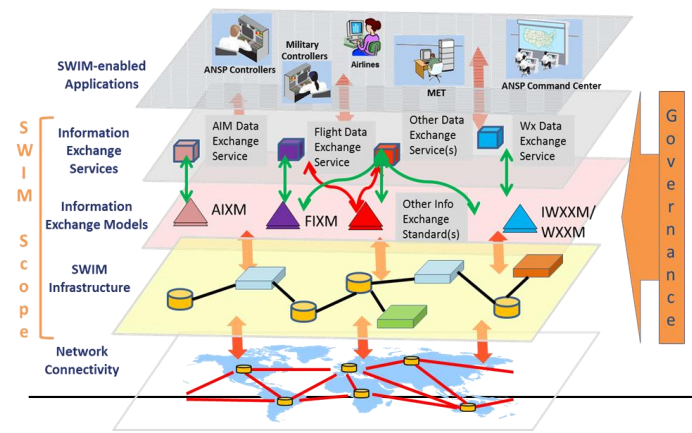
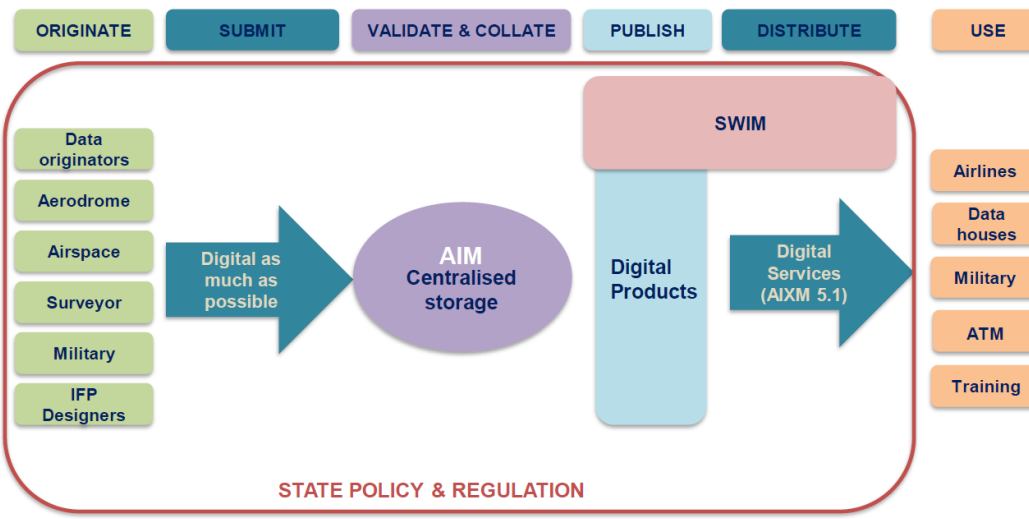
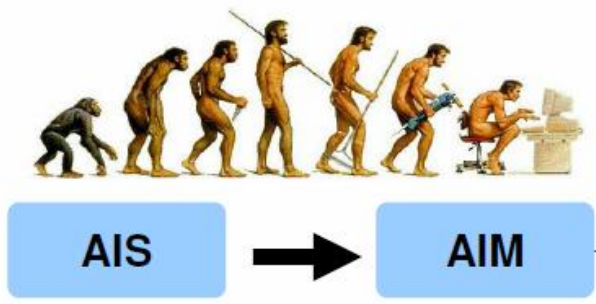
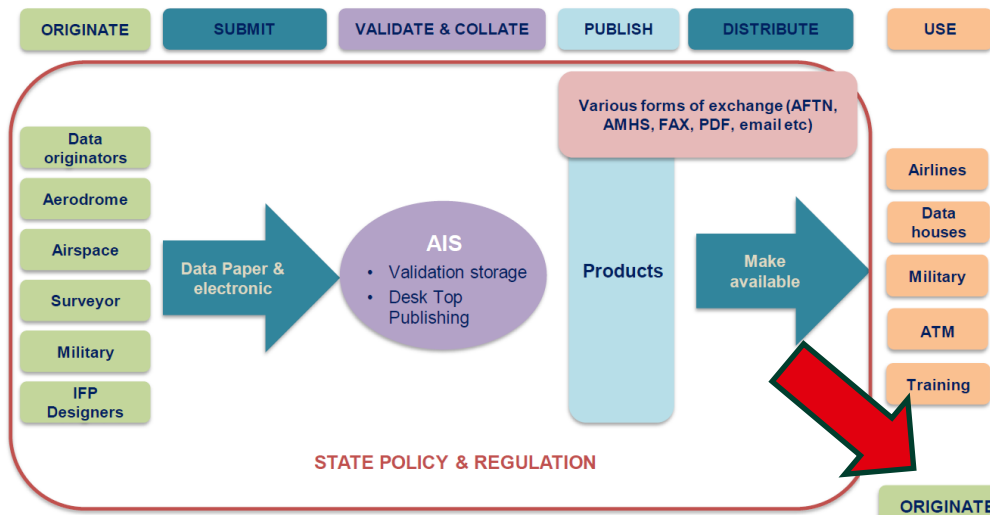
FRANCE EXPERIENCE

ICAO EUR/MID Workshop, May 2023

AGENDA

- **Context**
- **The French AIS experience**
 - Moving to data and services
 - Considerations about (French) aeronautical data
 - French DDS available
- **Benefits, lessons learned and way forward**



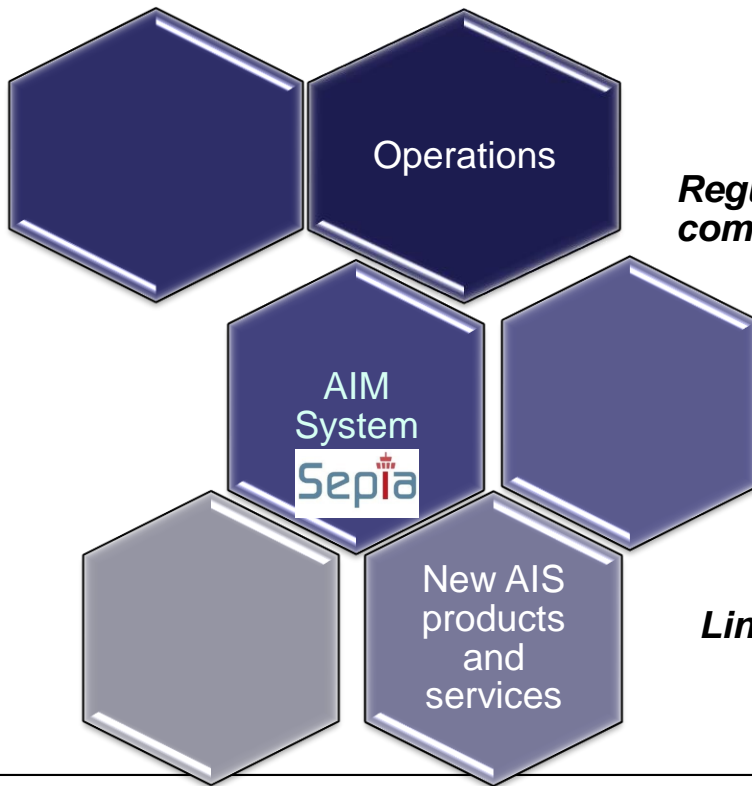


SWIM Registry

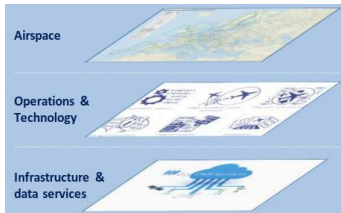
THE AIM CONTEXT



**User requirements
(DSNA and outside)**



**Regulatory
compliance**



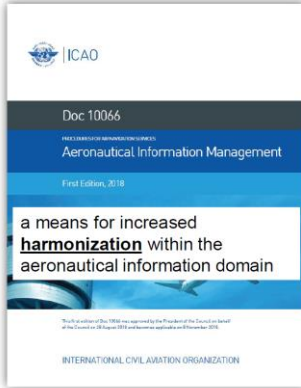
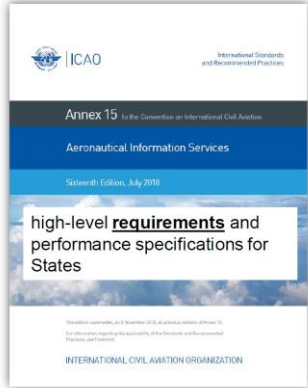
**Digitalization
Towards SWIM**

Link with EAD





ICAO Annex 15 Requirements

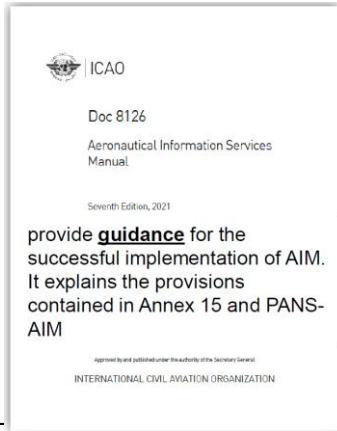


CHAPTER 5. AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

- 5.1.1 Aeronautical information shall be provided in the form of aeronautical information **products** and associated **services**.
- 5.3.1.1 Digital data shall be in the form of the following **data sets**:
 - a) AIP data set;
 - b) terrain data sets;
 - c) obstacle data sets;
 - d) aerodrome mapping data sets; and
 - e) instrument flight procedure data sets.

Digital Data Sets via SWIM Information Services

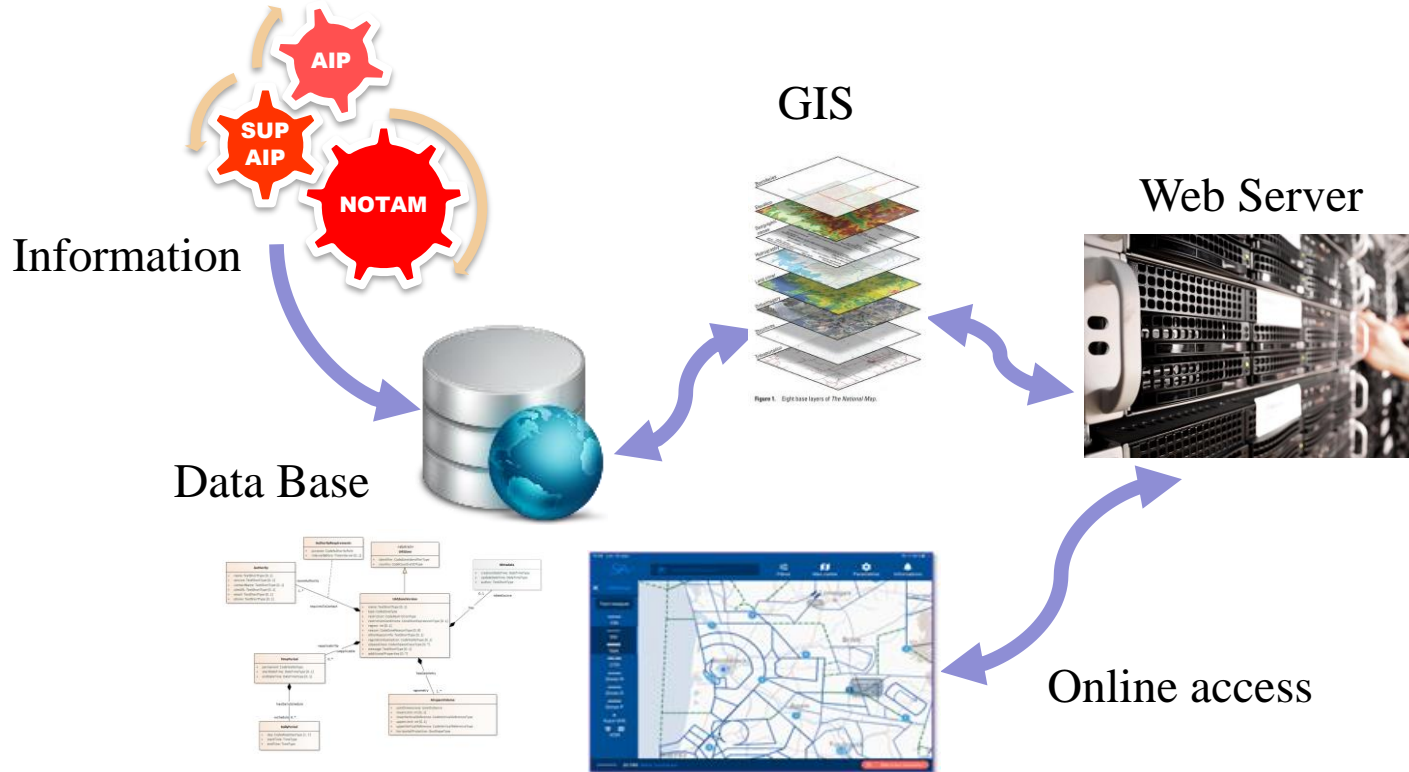
- Part II – Chapter 5
 - 5.3 The preferred method of distribution of aeronautical information provided as digital data sets is by secure online access. It is anticipated that in the future, **aeronautical information** and **digital data sets** will be distributed by **SWIM information services**.
 - 5.4.2.3.4 ... AIM requires a systems-oriented approach to digitalization; it is based on **service-oriented architecture**, databases, workflows and rule engines. It is essential for these automation systems to be **interoperable**.



SIA (FRENCH AIS) – FROM INFORMATION...



...TOWARDS DATA AND SERVICES



FRENCH AERONAUTICAL DATA EVOLUTION

Former AIS System
(PIANO)

20 000 objects

Proprietary « XML SIA »

2008

AIP

Current AIS System
(NOPIA)

28 000 objects

AIXM 4.5 + XML SIA

2018

AIP Dataset

New AIS System
(SEPIA)

52 000 objects

AIXM 5.1

2023

Webservices

AIS System évolutions
(SWIM services
D-NOTAMs)

100 000 objects

AIXM 5.x

2025+

Septia

DATA QUALITY IS KEY



Accuracy

Resolution

Integrity

Traceability

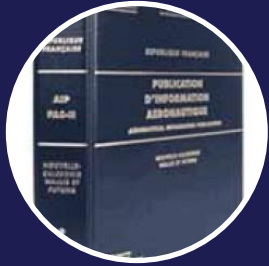
Timeliness

Completeness

Format



FRENCH DIGITAL DATA SETS



AIP



TOD



UAS

All publicly available on SIA website

AVAILABLE DATA SETS



PRODUCTS TO BE DOWNLOADED

This section centralises all the aeronautical information products in digital format provided for free downloading in compliance with the provisions of the *Code of relationships between the public and Administration*.

[eAIP](#)

[Metropolitan France charts](#)

[France overseas charts](#)

[En-Route charts](#)

[AIM data](#)

[TOD data](#)

[Geographical zones UAS data](#)

[Regulation manuals](#)

[SIA calendars](#)

AIM DATA

2 Items



AERONAUTICAL DATA XML AIRAC 04/23 5,21 MO

In force from 04/20/2023 to 05/17/2023 included

Learn More

FC: €0.00

Excl. Tax: €0.00

Add to Cart

[XML AIXM4.5 and SIA user export guide](#)

Aeronautical data for download, licensed for use

UAS GEOGRAPHICAL ZONES DATA

1 Item



UAS GEOGRAPHICAL ZONES DATASET 04/23

773,76 KO

In force from 04/20/2023 to 05/17/2023 included

Learn More

FC: €0.00

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Add to Cart

[Geographical zones dataset user guide](#)

TOD DATA

BORDEAUX LFBF'S TERRAIN AND OBSTACLES DATA 3,46 MO

Files edited between april 2019 and june 2019 (size 3.54 Mo)

Learn More

FC: €0.00

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PAU LFBP'S TERRAIN AND OBSTACLES DATA 2,17 MO

Files edited in november 2015 (size 2.22 Mo)

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CALVI LFKC'S TERRAIN AND OBSTACLES DATA 1,94 MO

Files edited in july 2014 (size 1.98 Mo)

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CLERMONT-FERRAND LFLC'S TERRAIN AND OBSTACLES DATA 22,98 MO

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TOULOUSE LFBO'S TERRAIN AND OBSTACLES DATA 4,82 MO

Files edited between may 2019 and september 2019 (size 4.94 Mo)

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BIARRITZ LFBZ'S TERRAIN AND OBSTACLES DATA 1,44 MO

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AJACCIO LFKJ'S TERRAIN AND OBSTACLES DATA 3,19 MO

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MARSEILLE LFMJ'S TERRAIN AND OBSTACLES DATA 33,42 MO

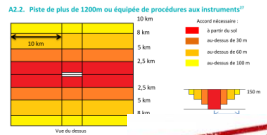
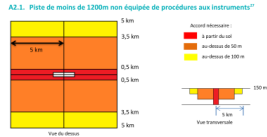
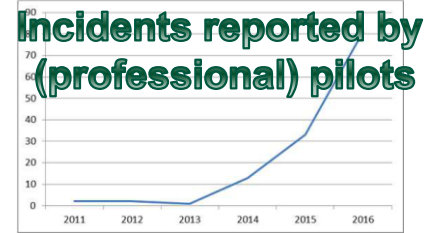
Files edited between july 2019 and october 2019 (size 34.22 Mo)

Learn More

THE UAS DIGITAL DATA SET



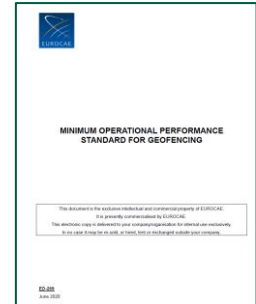
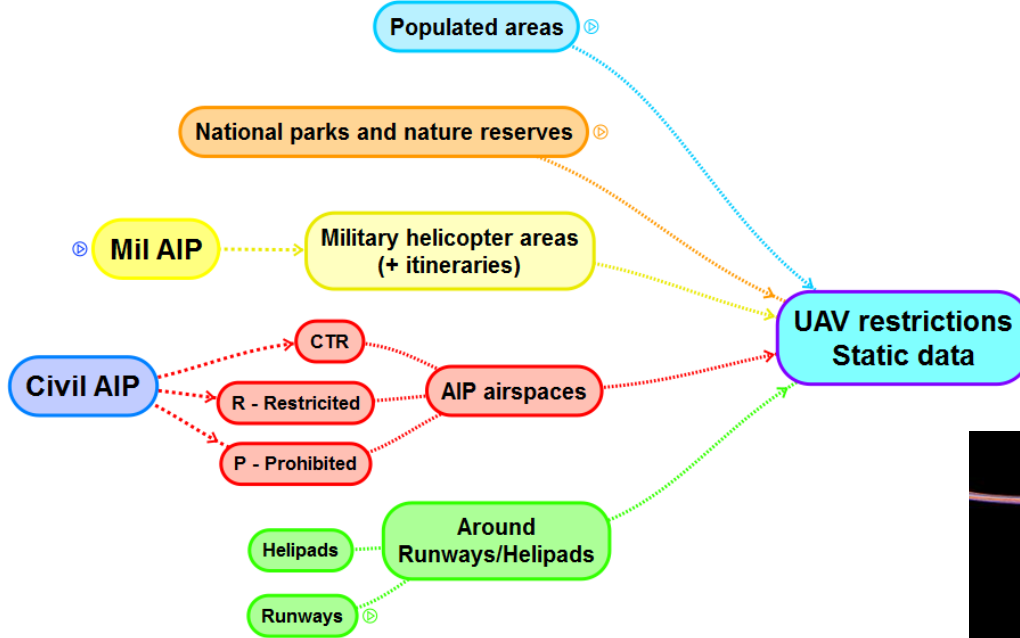
Traditional information



RULES



THE UAS DIGITAL DATA SET (2)



MAIN BENEFITS

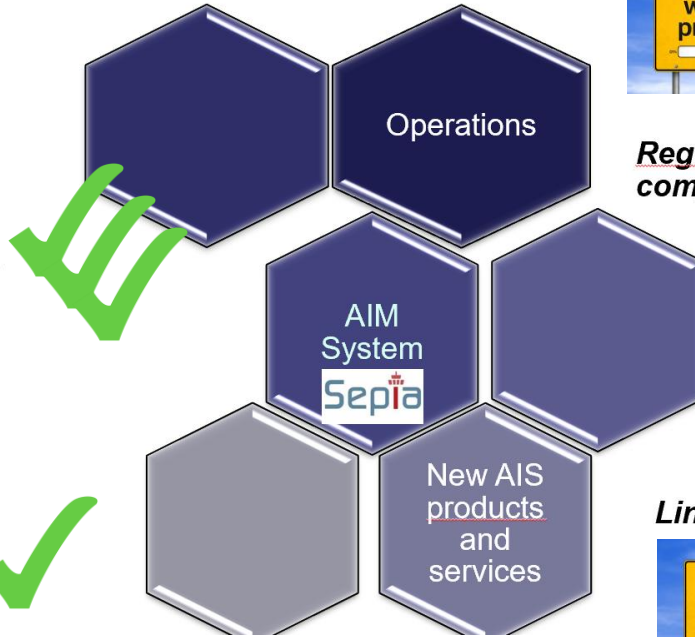
THE AIM CONTEXT



***User requirements
(DSNA and outside)***



***Digitalization
Towards SWIM***



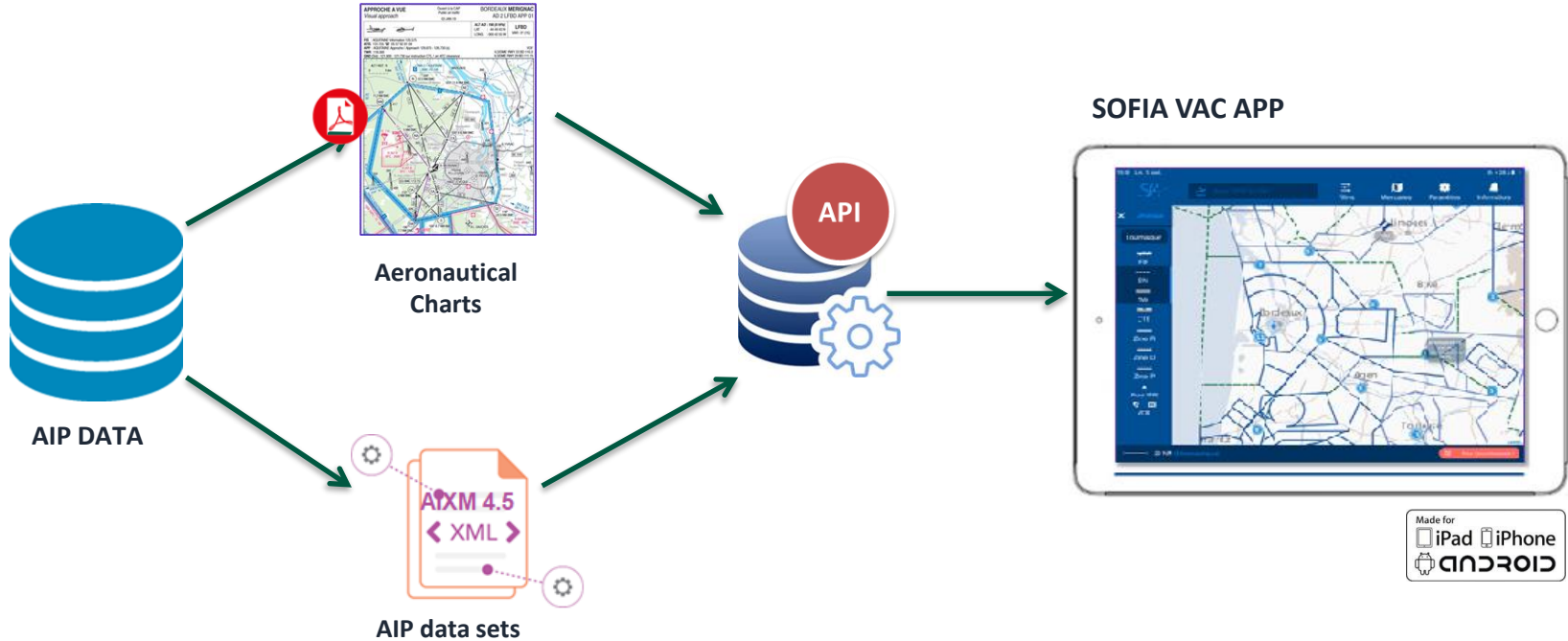
***Regulatory
compliance***



Link with EAD



NEW PRODUCTS : WEB SERVICES



LESSONS LEARNED



➤ Data quality VS New products / services

- New Services require Quality Data
- Data quality is a Graal quest
- Need to find the right balance

➤ Strategy for new products and services

- Regulatory required services (eg CP1 SWIM AIM services in Europe)
- User requirements (internal / external)
- New applications using APIs / SWIM services

Data quality and
Completeness

Development of web
(SWIM) services



New data services

Raw file

API /
SWIM

Graphical
display

Advanced
functionalities
(3D, etc.)

WAY FORWARD – the European ACADIA Project

Acceleration of Aeronautical Digital Information Availability

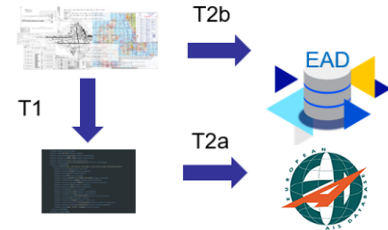
Data quality and
Completeness

Development of web
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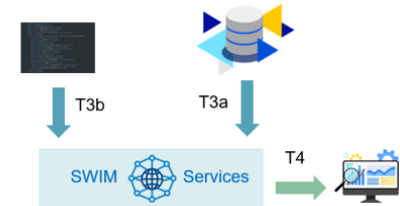
ACADIA - Digitalization Tasks

T1	T2a	T2b
Local Digitalization	Automated exchange with EAD B2B	Digitalization via EAD HMI



ACADIA – SWIM Service Tasks

T3a	T3b	T4
EAD SWIM Service Provision	Local SWIM Service Provision	SWIM Service Consumption





STEPHANE DUBET
DSNA / DGAC

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