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DIGITAL OPERATIONAL REPORTING INFORMATION SERVICE

DORIS

Digital Operational Reporting Information Service (DORIS)

WHY A NEW CONCEPT?

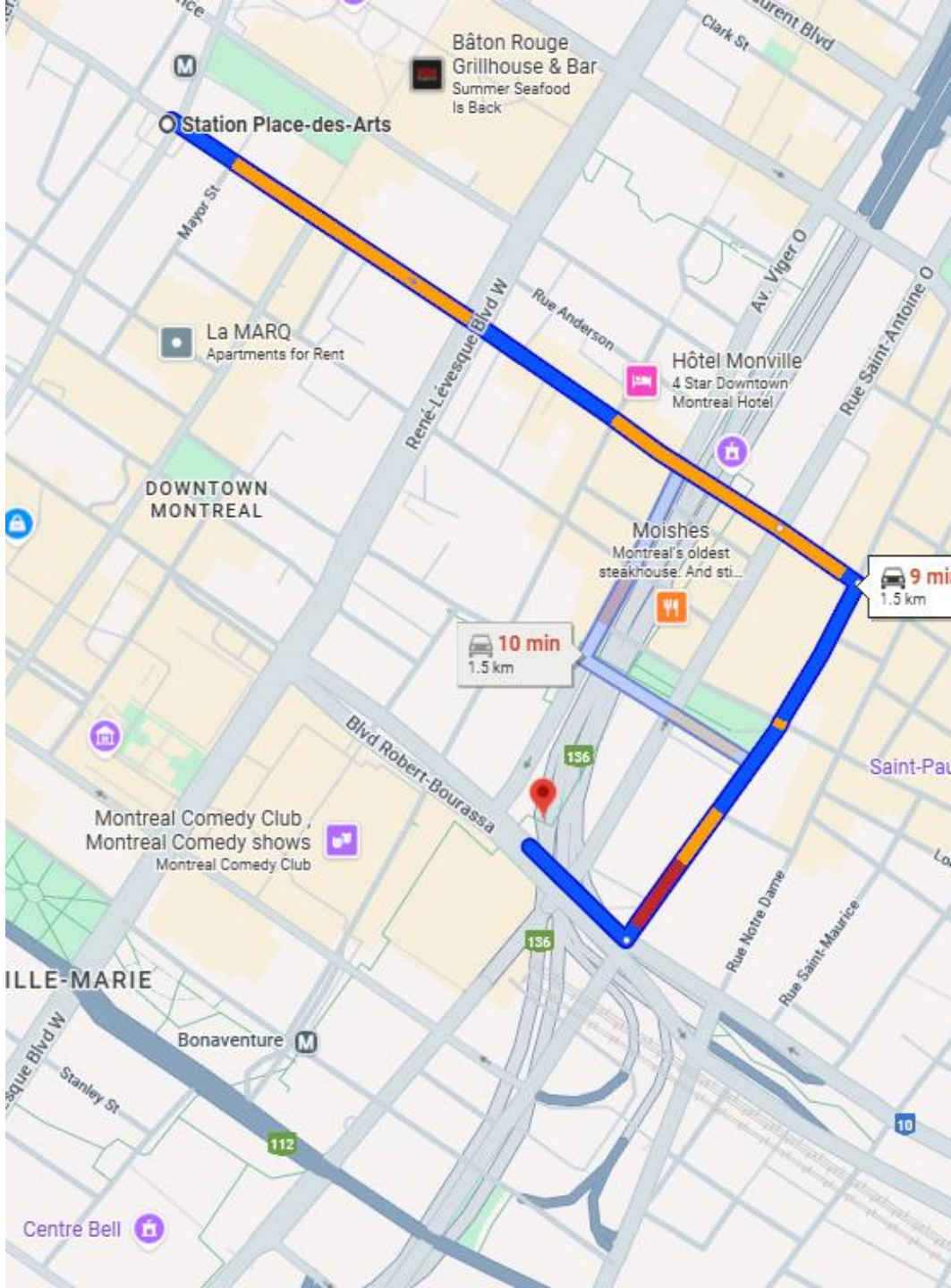
Making Timely Operational Decisions

Many of us are familiar with the navigation applications. We use them for more than finding our way:

- avoid road closures, anticipate delays, speed limits, check the ETA, add stops, etc.

When we do this, we use data to make decisions in a timely manner.

These Apps integrate digital data from various sources and present to the human in a manner that optimizes situational awareness for a given type of operation.



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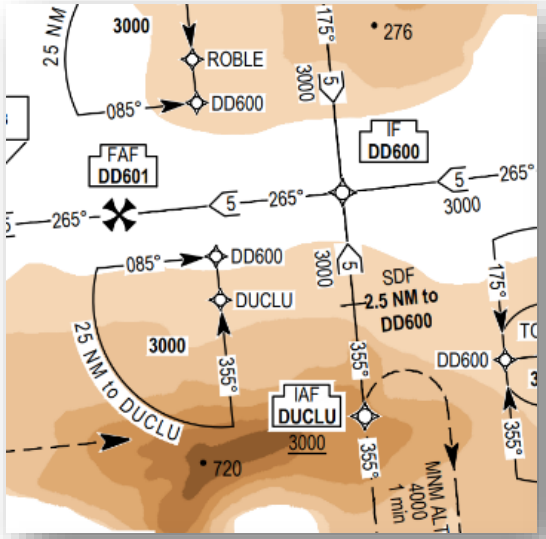

A0623/20 NOTAMN
Q) EAXX/QRDCA/IV/BO/W/000/400/
A) EACC EABB B) 2004030730 C) 2
D) 03 07 12 21 24 28 0730-1500
E) DANGER AREA EAD4 ACTIVATE
F) GND G) FL400

A0624/20 NOTAMN
Q) EAXX/QRDCA/IV/BO/W/000/300/
A) EACC EABB B) 2004190730 C)
D) 19 20 0730-1500
E) DANGER AREA EAD4 ACTIVATE
F) GND G) FL300

ENR 3.6 EN-ROUTE HOLDING

HLDG ID/FIX/WPT Coordinates	*INBD TR (°MAG)*	*Direction of PTN*
1	2	3
BOORSPIJK/BOR Boorspijk VOR/DME 522206N 0322230W	090 090 090 090	Right Right Right Right
JUSTINE/JUS Justine VOR 511648N 0310930W	329	Left
WOODBANK/WOB Woodbank VOR/DME 424324N 0361148W	015 015 015 015	Right Right Right Right

Making Timely Operational Decisions with today's AIS:

Personnel involved in flight operations constantly use aeronautical information and data to make decisions.

This is challenging when the information is in different products and not always in the format best suited for humans.

Up until now, aeronautical information and data **is created directly for the human user, and it is the human who must mentally integrate** this information to form a picture of the situation

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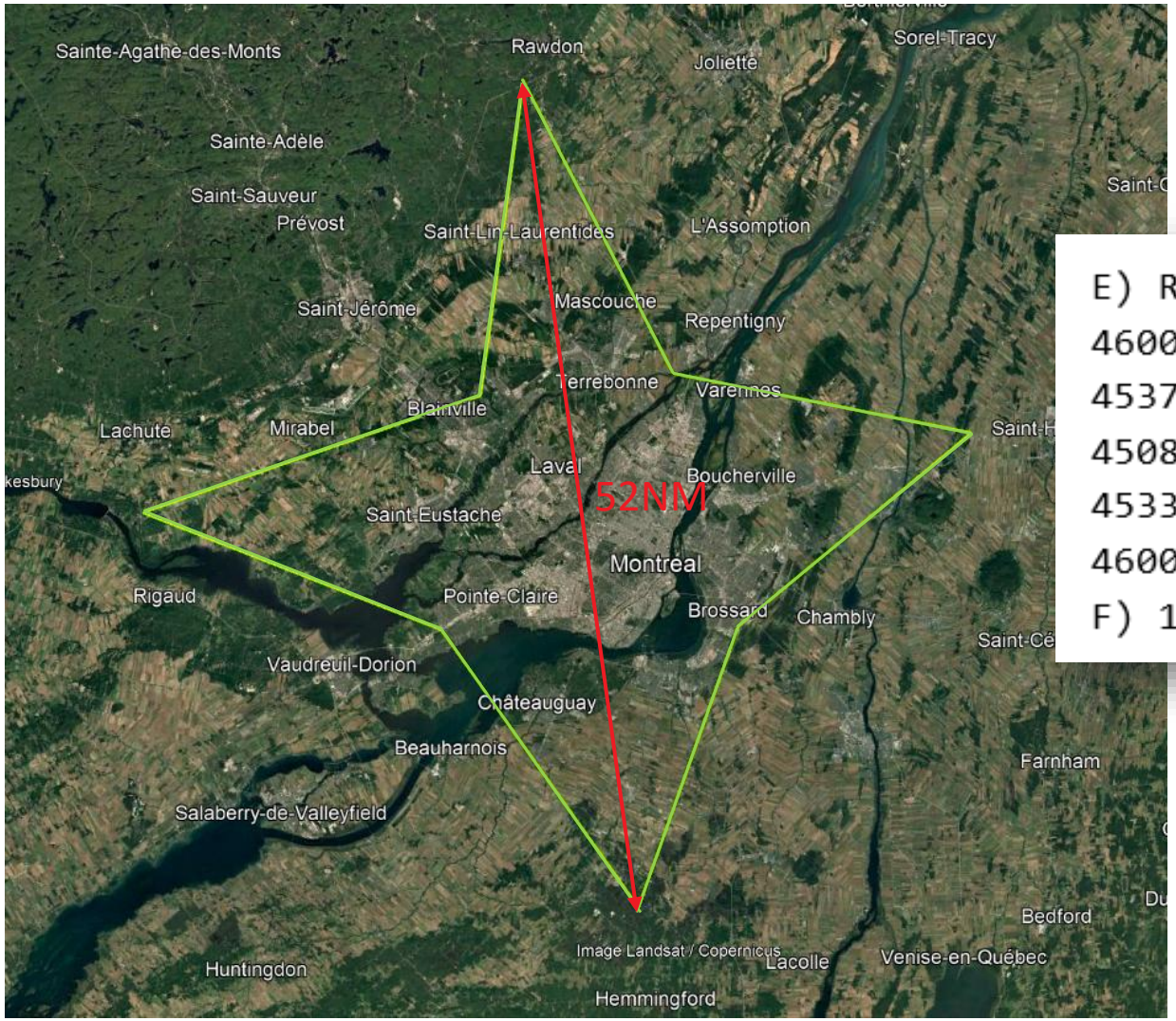
Making Timely Operational Decisions with today's AIS



E) RESTRICTED AIRSPACE WITHIN
460009N 0734452W – 454203N 0733204W –
453744N 0730534W – 452610N 0732655W –
450842N 0733623W – 452616N 0735322W –
453355N 0741944W – 454052N 0734925W –
460009N 0734452W
F) 12500FT AMSL G) FL220

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Integration of Aeronautical Information and Data

When aeronautical data and information of lasting character and of temporary duration is integrated with other relevant information domains, it can optimize situational awareness and promote better decision-making, which in turn promotes safety and efficiency

- Aeronautical Data must be digital
- Aeronautical Data exchange model interoperable
- Digital data must adhere to quality requirements

Digital Operational Reporting Information Service (DORIS)

THE CONCEPT

Providing Digital Aeronautical Information/Data

Aeronautical data sets – Baseline
“lasting character”

Aeronautical information or data that is temporary in nature

Delivery and retrieval mechanisms

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Digital Operational Reporting Information Service

"DORIS" is a SWIM information service from where can be obtained aeronautical information and data that are temporary in nature.

- It is not a 1:1 NOTAM replacement - DORIS is not a message
- The information is in the form of a small data set – an AIXM event
- The DORIS **Report** can be used for NOTAM, SNOWTAM and AIP Supplements
- "short notice" and "short duration" no longer a factor

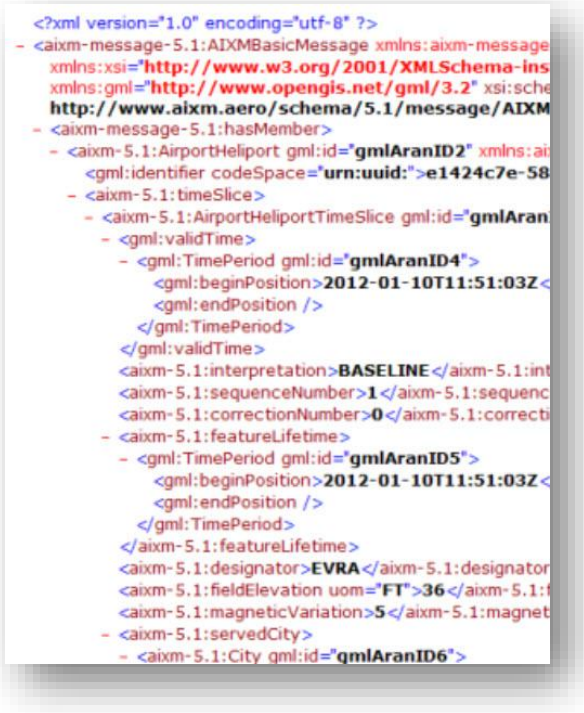
Difference between Digital NOTAM (Product/Service) and DORIS Report

	Digital NOTAM	DORIS Report
Complement the digital data sets	✗	✓
AIXM 5.x events	✓	✓
Information Service	✗	✓
Constrained by AIRAC rules	✓	✓
information not constrained by NOTAM rules (format, short notice, duration, abbreviations)	✗	✓
Coding scenarios not organized based on desired Q-code	✗	✓
Information not constrained by AIP SUP rules (duration)	✗	✓
Support complex scenarios driven by users' needs	✗	✓

Key Principle – Next Intended User

```
E) RESTRICTED AIRSPACE WITHIN
101129N 0071626E - 095839N 0075751E -
091907N 0074438E - 084022N 0080552E -
083048N 0065207E - 090925N 0063426E -
093447N 0065504E - 100430N 0063749E
F) 12500FT AMSL G) FL180
```

Key Principle – End User

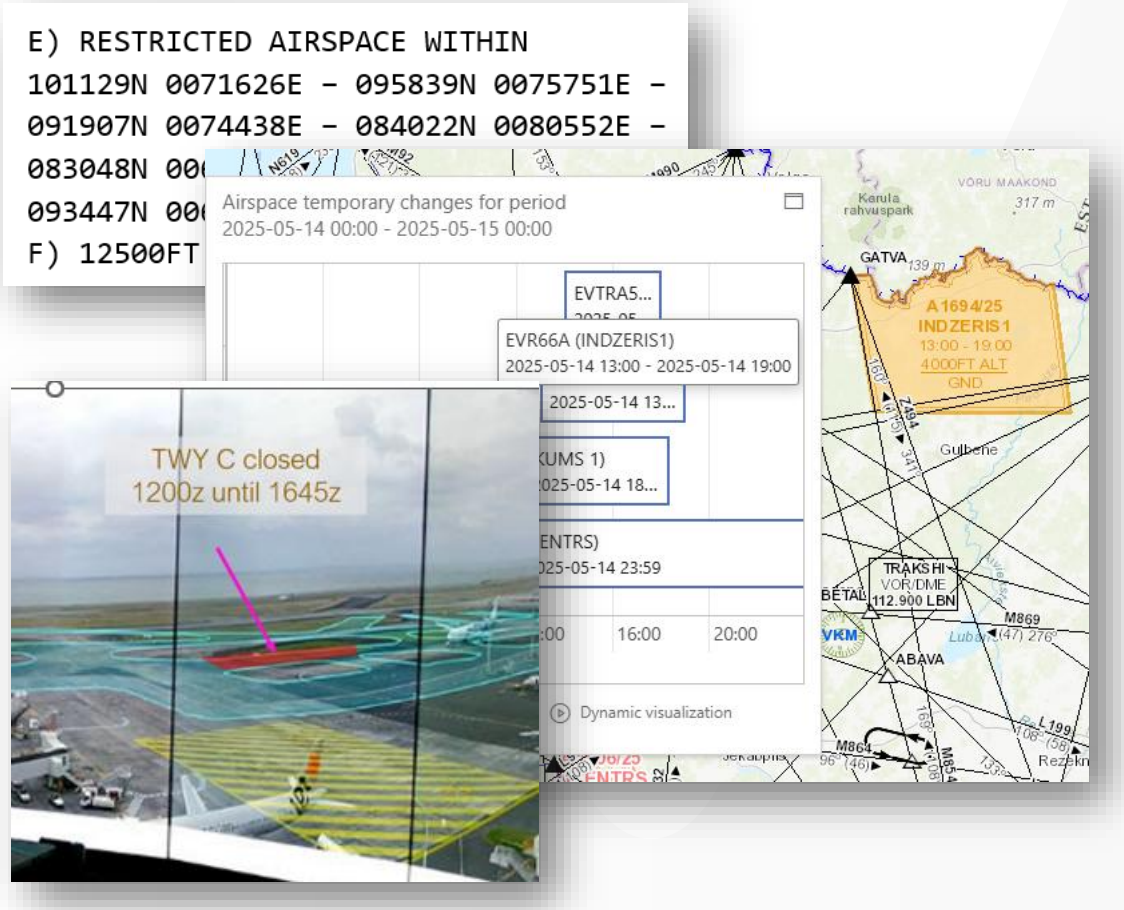


End
Users

Key Principle - Data vs Portrayal of Data

Data

Portrayal of Data



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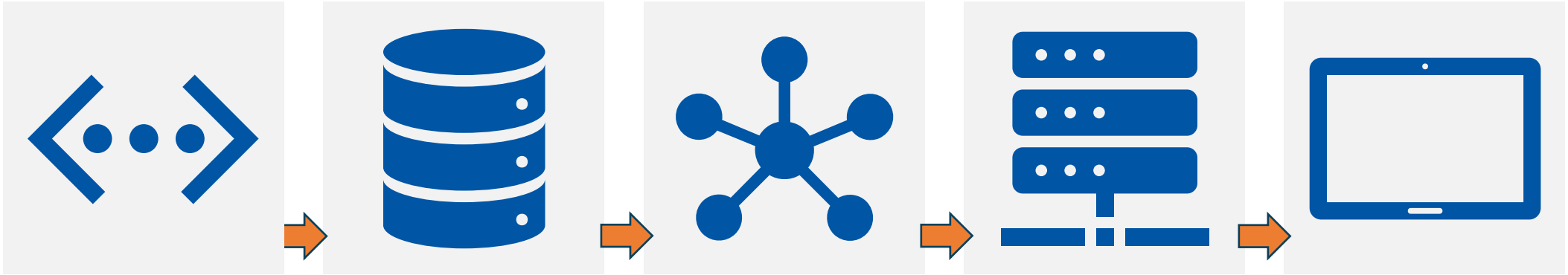
Digital Operational Reporting Information Service (DORIS)

FROM CONCEPT TO OPERATIONS

Prerequisites to Implementing DORIS/ DORIS Reports

All parts are necessary



Adoption of common data and information model, coding specifications are key in creating digital data sets that can be shared

Digital Data Sets are the foundation. **Static** and **dynamic** data are provided as an information service through SWIM

SWIM and information services must be established in accordance with the PANS-IM (Information Management)

Next Intended User Systems subscribe to data and data updates

Web viewers or viewing services or applications are necessary for the end user to consume this data and information and apply within their operation.

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SKYTALKS

Postal **service**: collect, process, distribute

DORIS

Information Services

Information **container**: envelope

Payload

Information: letter

The digital temporary information (AIXM event – “the DORIS Report”)

ISO and ISD

Information services must be advertised and defined

Information **S**ervice **O**verview (ISO)

an 'ISO' is a set of information service metadata intended to promote information service discovery and an initial evaluation of the information service characteristics (PANS-IM)

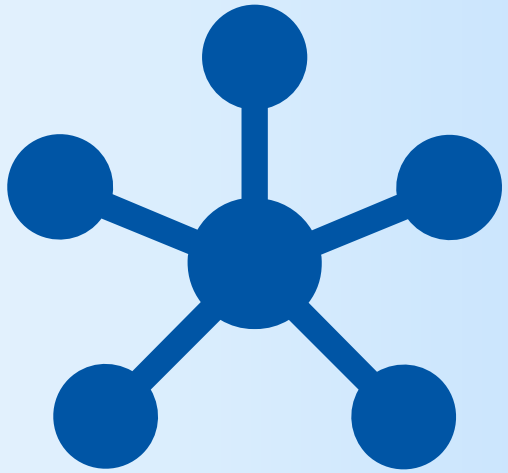
Information **S**ervice **D**efinition (ISD)

An 'ISD' is a technical document, describing the exchange model schema, service interfaces, limitations, constraints, etc.

Adopting the ICAO ISD template will be key in being interoperable with other states and systems

Doc.10199 PANS-IM (1st ed 2024)
Doc.10203 Manual on SWIM Implementation (1st ed 2024)

Examples of Digital Data Service



Feature Layer

July 8, 2024
Info Updated

July 8, 2024
Data Updated

May 17, 2018
Published Date

Records: 40
View data table

Public
Anyone can see this content

Custom License
View license details

Relevant Area

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Example of a Digital Data Service

(follow the link for example)

https://open.Ottawa.ca

Click on data: note that data is “discoverable” : the user can scroll, use the search engine.

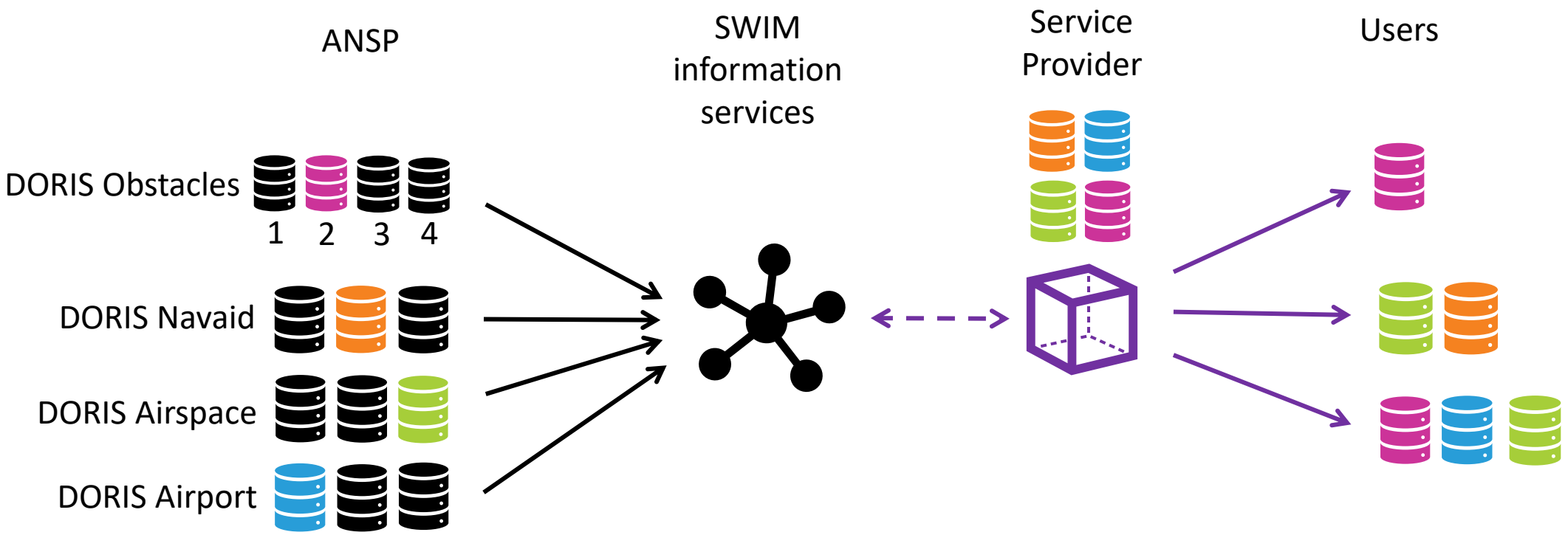
The data attributes are visible, for the whole data set or for individual pieces of data

The data service also has a viewer, the means for portrayal.

As a next intended user system developer, there is a space for these individuals to know how to subscribe to the data.

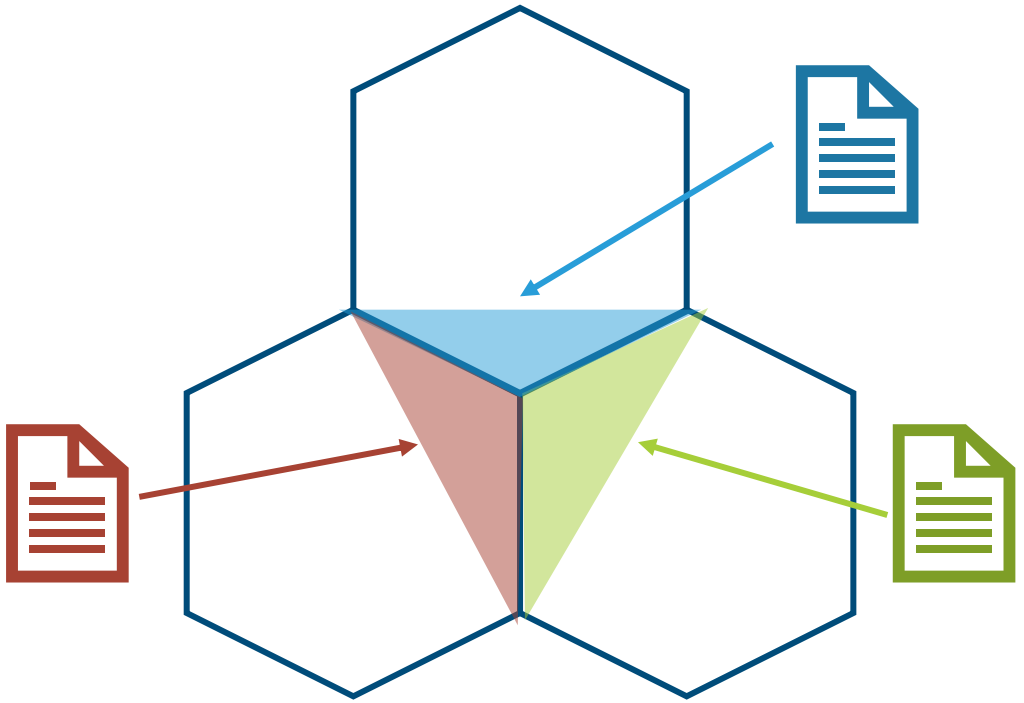
More granular subscriptions or query criteria possible

Which support more effective filtering



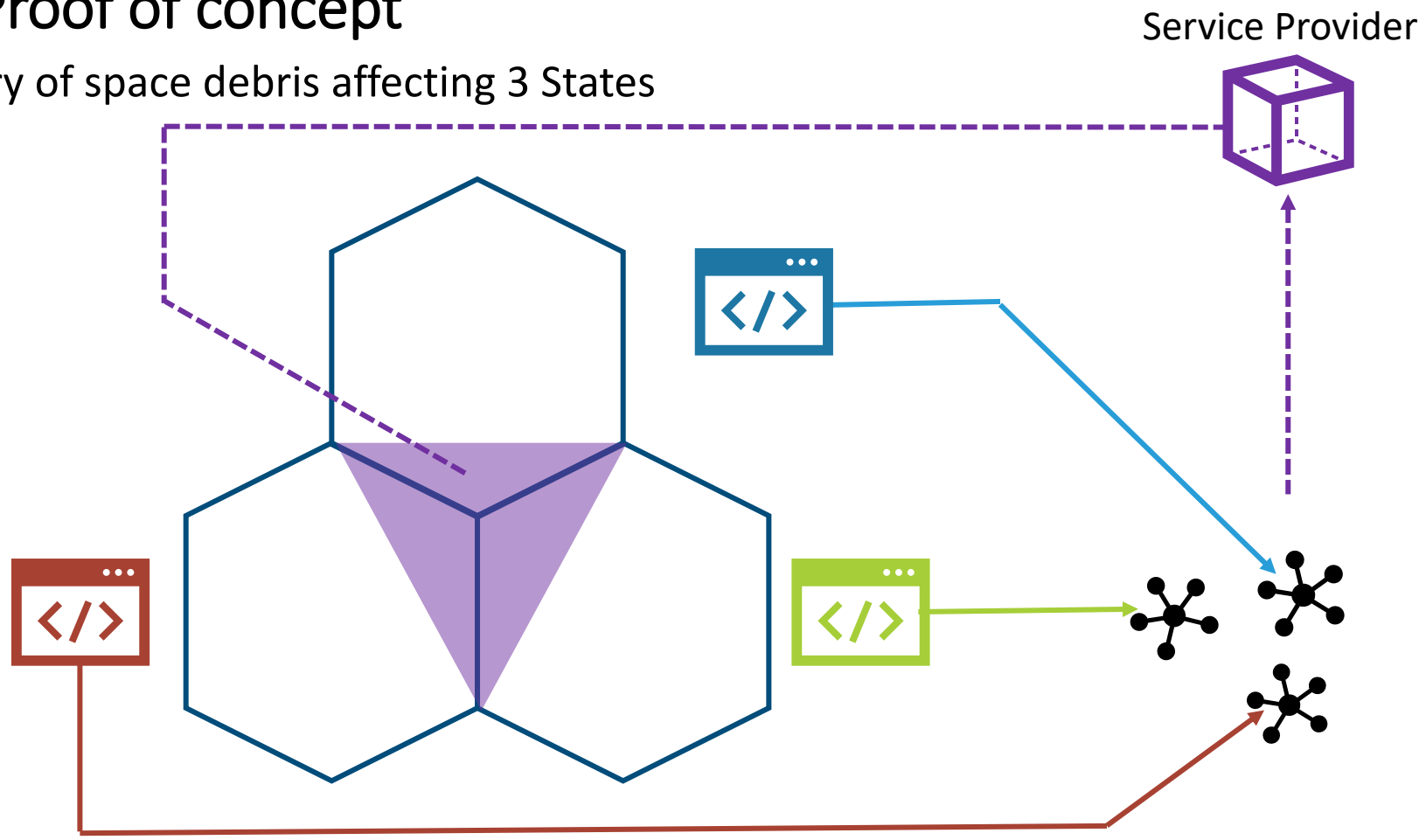
Portrayal – A Single View

Scenario: re-entry of space debris affecting 3 States



Portrayal – Proof of concept

Scenario: re-entry of space debris affecting 3 States



Digital Operational Reporting Information Service (DORIS)

SKILLSETS AND ROLES

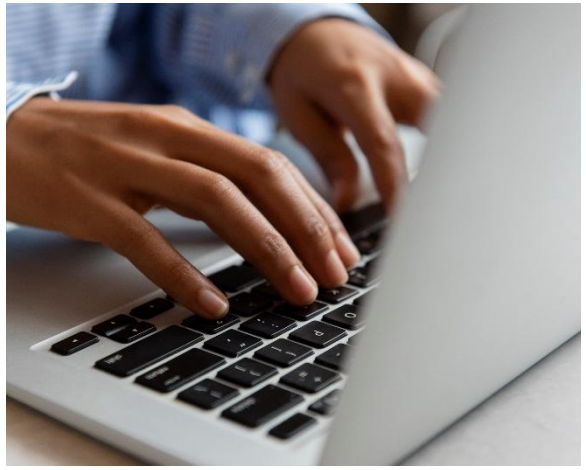
Dependence on Technology and culture change

Every actor within the data chain will interact with technology: from the originator, to AIM/NOF specialists processing the data, to the system developers, to the end users viewing the portrayal.

- Technology must be **maintained** to avoid reverting to manual processes and paper / PDF products
- Interoperability is **necessary.** Foster the adoption of AIXM and foster collaboration to **minimize regional differences**
- Make it difficult and complex to adopt different models to accelerate implementation
- Foster collaboration and sharing of expertise so that no country is left behind

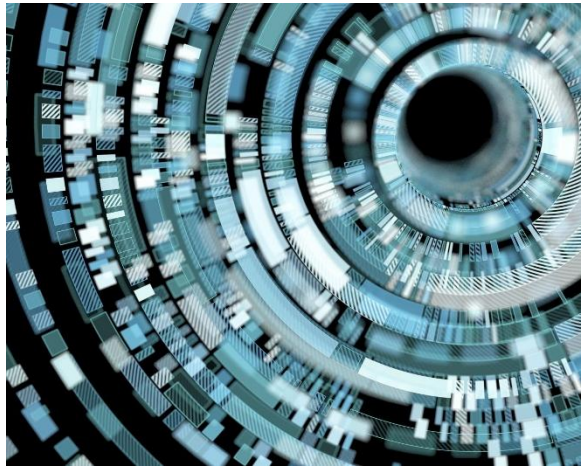
Skills and Roles

Roles remain more or less the same... *how* the work is done will be different



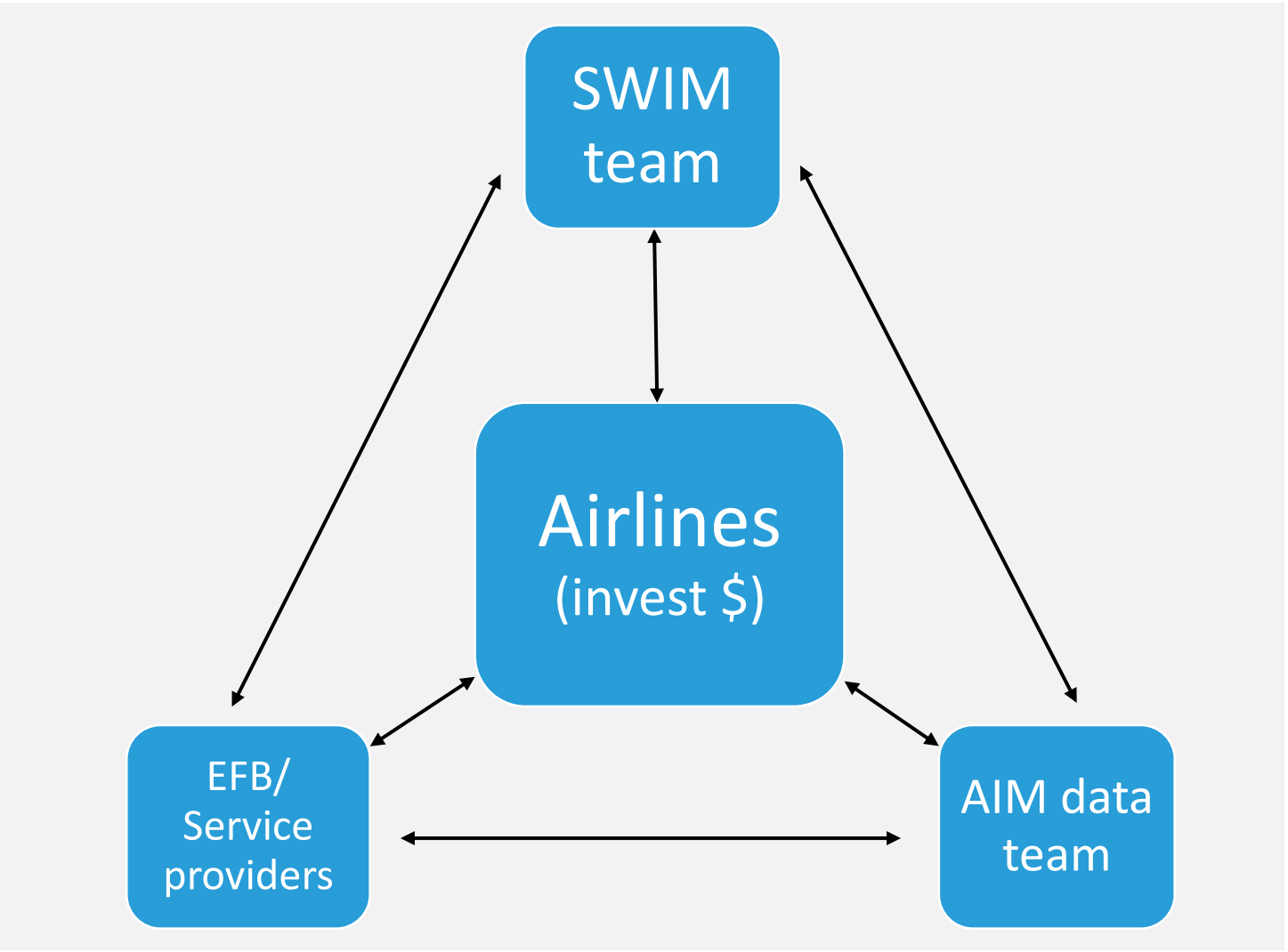
Dependent on technology: learning to use interfaces. The complexity of the data coding is hidden. **AIM/NOF Personnel are not expected to be coding experts**

Subject Matter Expertise shifts **away from** application of the right abbreviation or Q-code, formatting or rules around duration and timing



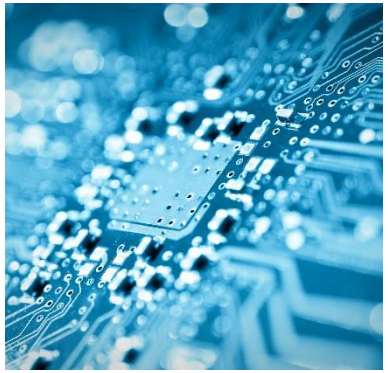
The focus **shifts to** data exchange principles, data validation techniques and integrity monitoring; originator support.

Collaboration Within the Industry

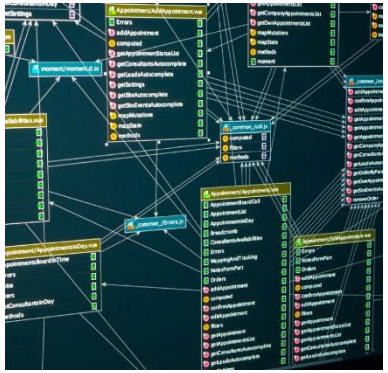


Key takeaways of the Concept

DORIS Report payload is an AIXM event (scenario) made available through SWIM Information Services. The data being digital enables integration of temporary (dynamic) aeronautical digital data with static data and other data domains



The next intended users is a technology system. This system may host the instruction for portrayal, making it possible to customize. This represents an investment by the industry



The data assets are the foundation. Information Services and SWIM, as well as data viewing services must be available in order to subscribe to then use DORIS. Access to digital data through IP, not AFTN.

DORIS Reports will replace NOTAM, SNOWTAM and AIP SUP; mechanisms such as Trigger NOTAM and checklists are no longer required. AIRAC remains

After a defined and short transition period, NOTAM and AIP SUP should be discontinued. The AIP and charts will have also evolved. The delivery of AIS will be drastically different

Multiple Amendments will be required

13 Annexes and volumes of annexes contain reference to NOTAM and /or AIP, AIP SUP, PIB, etc. In most cases changes are minor

29 documents and manuals contain references – Analysis is ongoing

All PANS except PANS-IM are affected by the change, including the new PANS-MET.

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Thank You!

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