



InterFAB

Digitalisation – challenging and enabling future AIM

3. AIXM: The standard for aeronautical data exchanges

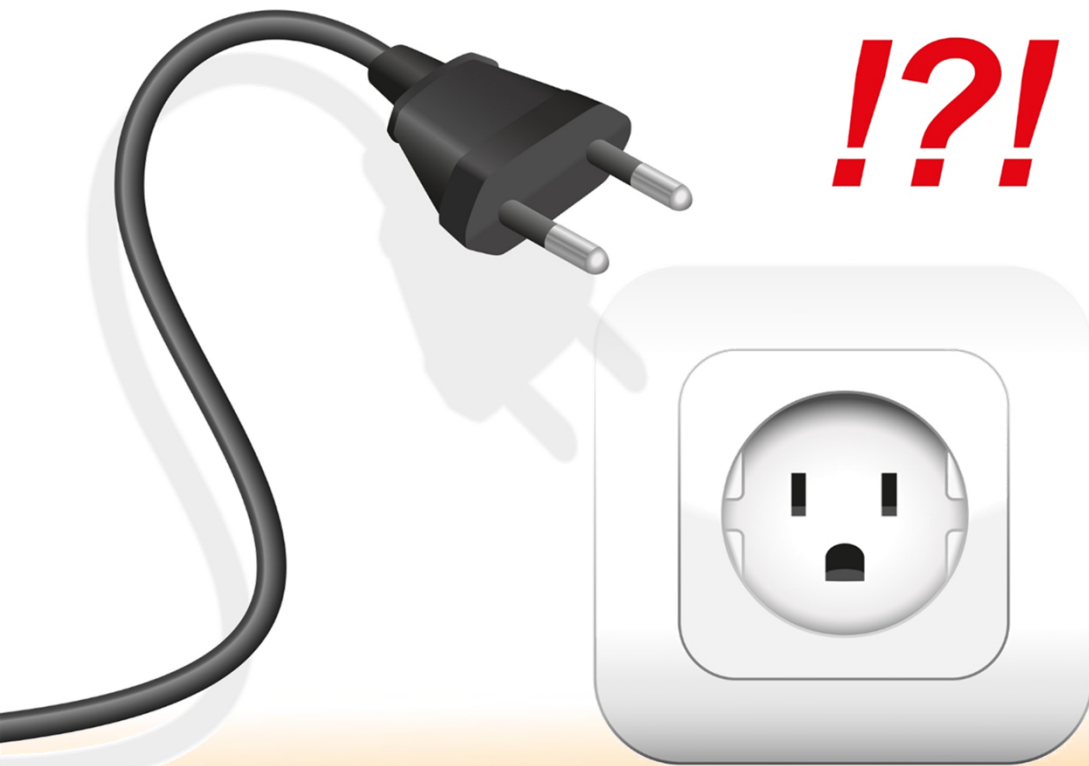
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making the difference ...



The interoperability challenge



- We all know the challenge of different power sockets and plugs when we travel
- Power adapters are often required
- The adapters add unnecessary hassle and costs that could have been avoided by proper coordination and standardization
- The same considerations apply to AIXM data exchanges

Which problems do we have exchanging AIXM data today?



- Despite its 23-year history, AIXM data cannot be easily exchanged among ANSPs and the wider aviation community due to its lack of interoperability. AIXM 5.2 slated for release in Q1 2021 gives us a new chance to fix that.
- Due to these interoperability issues, the majority of ANSPs manually recaptures neighboring data required for ATM. This is a slow and labor-intensive process and includes the risk of data corruption!
- EU Common Project One requires ATM systems to ingest digital aeronautical data including Digital NOTAM by the end of 2027.



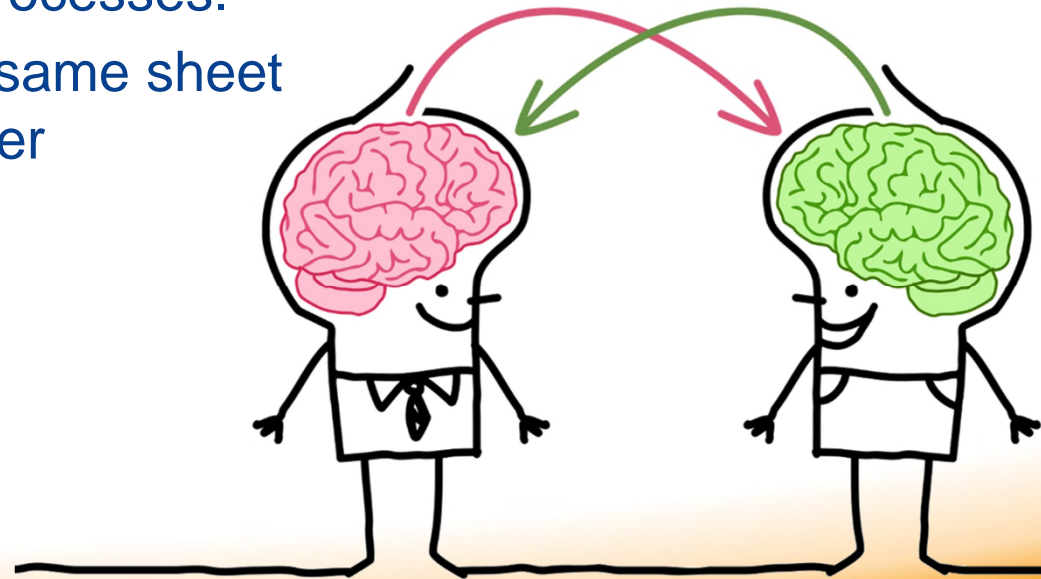
How can we solve these issues?



- Today, opening AIXM files from different sources is like opening a Microsoft Word file in Open Office and vice versa: You will get to see a text document, but the formatting is often garbled, requiring extensive manual fixes or special converters.
- Having AIXM data that can be directly exchanged among stakeholders would greatly simplify the AIM business
- It would also increase safety and reduce vendor lock-in since all systems would play from the same sheet of music.
- **An AIXM conformity test suite could fix these issues by eliminating variations in AIXM implementations.**

Why do we need a data integration platform?

- Having an interoperable data format is the first step towards an integrated data set.
- Cross-border data still needs to be integrated to achieve seamlessness and make the data fit for automated processes.
- All stakeholders playing from the same sheet of music is a prerequisite for further automation.



How can we best set up a data integration platform research project?



- The proposed research project leverages existing geodata software and just extends it with aviation functions.
- This approach promises to be much cheaper and more agile than aviation-specific solutions.
- This project would research the feasibility of using existing technology from other industries to improve aeronautical data quality. It is not intended to replace existing data exchange solutions.



Summary



AIXM

- A commonly used implementation
- Verified through conformity testing

Data integration

- Research to validate whether generic ETL (extract, transform, load) tools can be used for AIXM data integration
- Potential for operationalization and harmonized data set availability

Automation

- Stakeholders can directly load any compliant AIXM data set into their systems
- Everyone plays from the same sheet of music – higher efficiency!

Outlook



- If the data integration proves to be successful using the outlined approach, the concept could be operationalized if required.
- The same data integration methodology could also be applied to UTM data so that data sets can be easily shared, enabling cross-border drone flights.
- The costs of this approach should be comparable to that proposed for aeronautical data.
- Making available a harmonized FABEC UTM data set would be big driver for cost-effective, safe UTM integration.
- Synergies with aeronautical data integration are expected.

