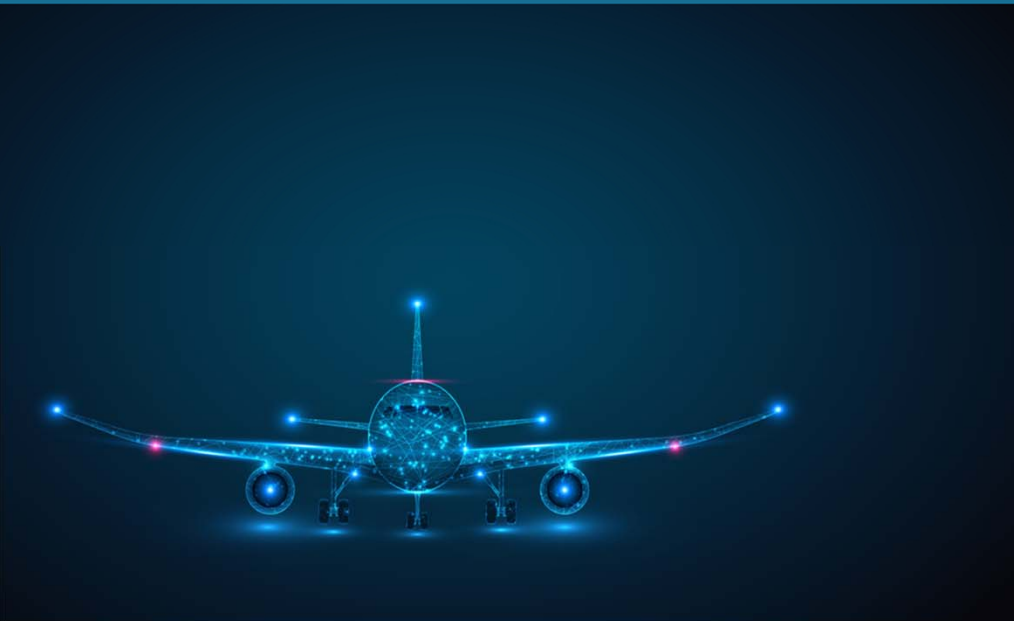




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# Webinar on the provision of Terrain and Obstacle (TOD) and AIP Datasets

19 May 2022



Mohamed-Ali MGALLES, Chief of Technology Officer

## Data Product specification , TOD and IFP digital datasets representation



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# Digital datasets – Regulatory Context & Goals

- One of the pillar of the AIS to AIM transition (revised Annex 15 and PANS-AIM)
- (EU) 469/2020, repealing ADQ, also proposes a Data Catalogue → Data Provider oriented (minor differences)
- Goals:
  - Standardize format and structure
  - Ensure minimum set of information provided
  - Facilitate communication of information between stakeholders
  - Facilitate the definition of Data Quality Requirements
- Stake for an industrial like CGX AERO:

Making the bridge between the “Ground World” and the “Aircraft World”



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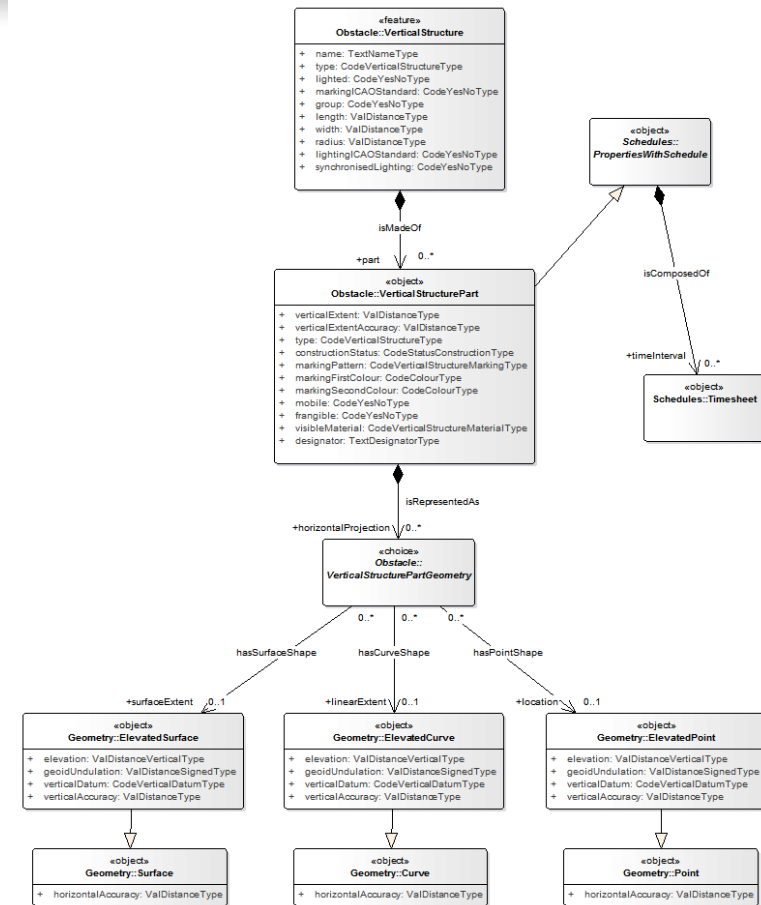
# Data Product Specifications

- Essential to align the relationship with Data Providers
- Way to ensure
  - compliance to Regulations by Data Providers
  - originated data quality is sufficient for the intended goals
- Contains:
  - Dataset goal
  - Area of coverage
  - Necessary Data & Metadata
  - Data Quality Requirements
  - Specific requirements addressed to the Data Provider



## Focus on Obstacle Dataset

- Go further than PANS-AIM and eTOD manual
  - More details on obstacle nature description
  - Benefit from the AIXM metadata possibilities
- Implementation principles:
  - Central AIXM 5 database following coding guidelines
  - Dedicated workflow
  - Configurable import templates adapted to Data Providers
  - Automated tools for obstacles processing, analysis, V&V, able to cover several use cases:
    - eTOD
    - OLS analysis
    - IFP





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# Focus on IFP Dataset

- Objective : make the initial IFPD spirit persist in the AIM chain, including conceptual design, design, V&V, charting and up to the production of Navigation Databases
- Implementation principles:
  - Central AIXM 5 database following coding guidelines
  - Dedicated workflow
  - Digital Dataset allows:
    - Technical report automation
    - Possibility to implement Ground Validation tools
    - Automatic generation of ARINC 424 coding
    - Automatic Charting, in direct connection with central database



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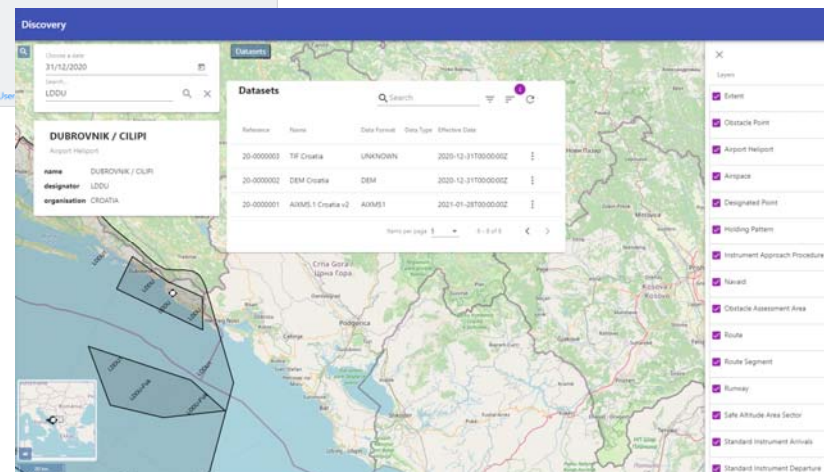
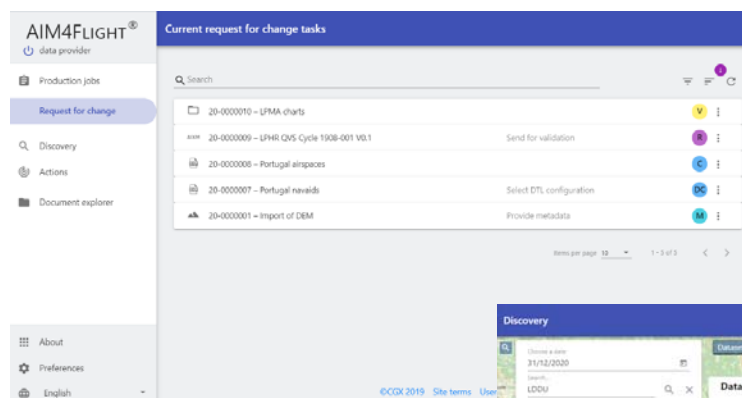
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## AIM4Flight®: Implementation of Aeronautical Data processes

- Collaborative eSpace
  - Centralized dashboard
  - tasks monitoring and reporting
- Workflow based
- AIXM 5.1.1 Extended database
- High level of automation:
  - Generic import
  - Automatic Business rules check
  - Automatic reports generation
  - .....
- Reliable and efficient data quality management
- Compliance to regulations
  - ICAO AIS to AIM transition management
  - ICAO Annex 15 and PANS-AIM compliance
  - Eurocontrol Aeronautical Data Quality (ADQ) compliance

➔ Dataset monitoring (management of whole life cycle)





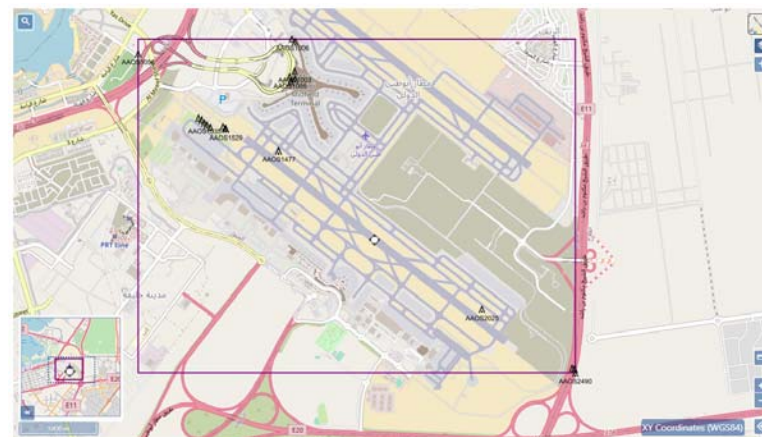
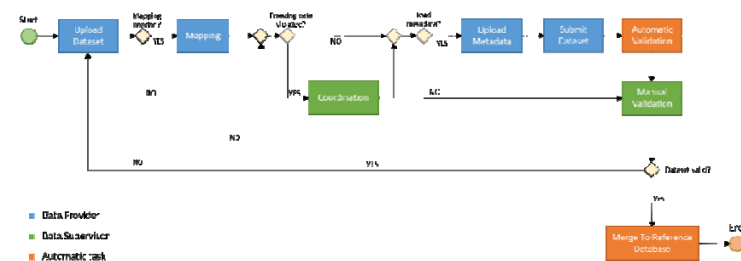
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# AIM4Flight® Management of obstacles datasets Request for change process

- Submission of dataset files in different formats: AIXM, CSV, Shape files..
- Automatic mapping of dataset features to AIXM5.1.1
- Upload of metadata (compliant to ISO 19139)
- Automatic verification and validation capabilities
  - Automatic Business rules
  - Impact management on other products
  - Automatic reports generation
- Publication: make dataset available for other users
- Dedicated repositories to store digital datasets and files before and after publication.





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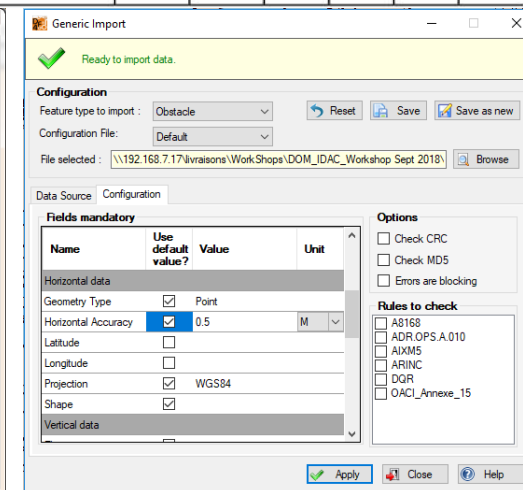
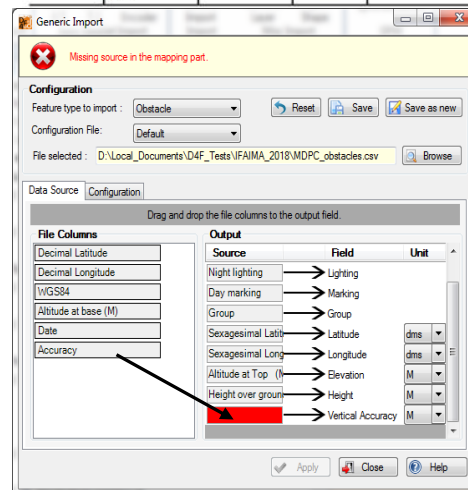
## Obstacle dataset preparation & ingestion

- Excel template compliant with PANS-AIM Aeronautical Data Catalogue
  - Simplified input format for data originators
- Smart ETL tool for automatic digitalization of the obstacle dataset
  - Automated import in the AIXM 5 database
- Business rules validation against ICAO Annex 15
  - Advanced verification rules of data quality requirements



6. Obstacle data

Subject	Property	Sub-property	Type	Description	Note	Accuracy	Integrity	Orig. Type	Pub. Res.	Chart Res.
Obstacle				All fixed (whether temporary or permanent) and mobile obstacles or parts thereof						
	Obstacle identifier		Text	Unique identifier of the obstacle						
	Operator/owner		Text	Name and contact information of the obstacle operator or owner						
	Geometry type		Code list	An indication whether the obstacle is a point, line or polygon						
	Horizontal position		Point or line or polygon	Horizontal position of the obstacle		See Note 1 below				
	Horizontal extent		Distance	Horizontal extent of the obstacle						







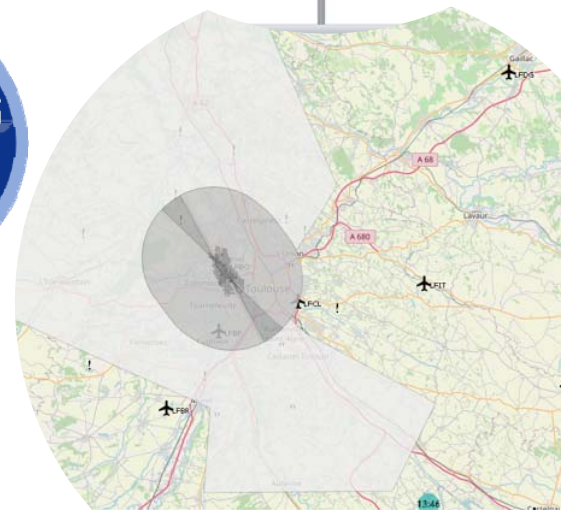
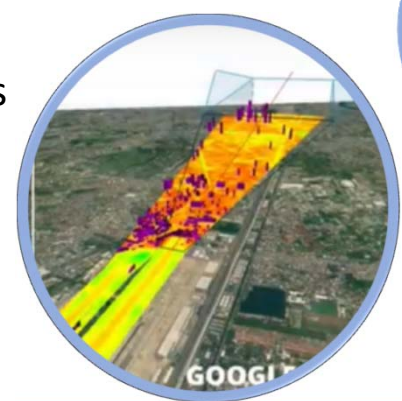
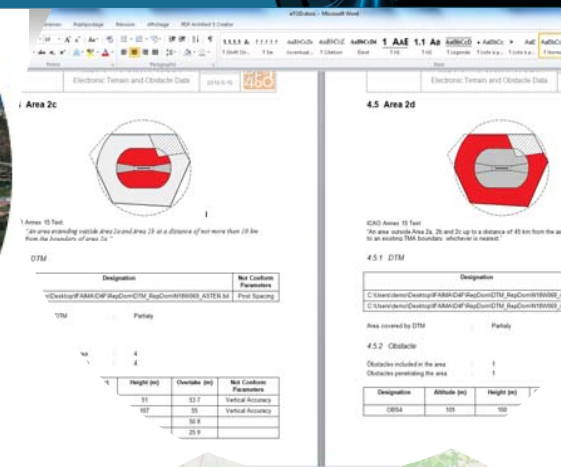
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## eTOD areas modelling and assessment

- Automated tool for:
  - Creating eTOD areas automatically according to ICAO Annex 15 specifications
  - Evaluating obstacles and terrain impacts
  - Checking compliance with ICAO Annex 15 requirements
  - Simulating the impact of future obstacles
  - Generating automatic reports





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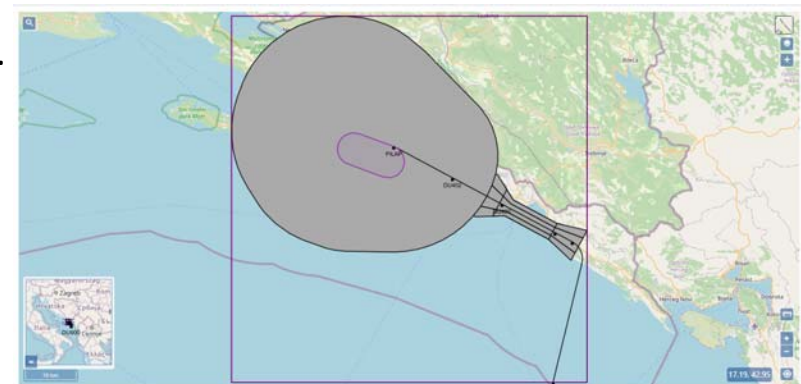
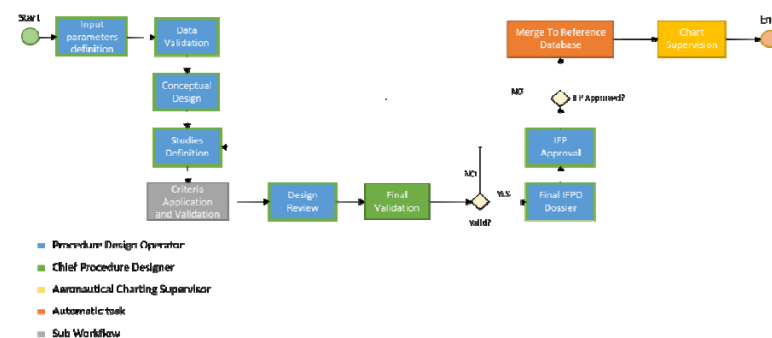
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# AIM4Flight® Management of IFP dataset

## IFPD process

- Process for procedure design from data gathering to charting and publication.
- Fully compliant with **ICAO DOC 9906**
- Direct access to CGX tools (Data4Flight®, GeoTITAN® and AIP-GIS Charting®)
  - ➔ The launched tool is correctly configured to perform the pending task.
- Automatic report (Business rules check, technical report, ARINC coding table...)
- Metadata automated management







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THANK YOU

