

IDS AirNav
an enav group company

FPDAM
Flight Procedure Design and
Airspace Management



FPDAM is the world market leader in flight procedure design system since several years.

FPDAM is the most complete and flexible design system on the market used in more than 60 organizations all over the world (ANSP / CAA / military and service providers).

IDS do not provide custom functions but include in the same FPDAM all the functions needed by the overall customer base.

Reference criteria

ICAO doc 8168 PANS-OPS Vol II up to the latest amendment 9

ICAO doc 9613 PBN



ICAO annex 14 Aerodromes

ICAO doc 9905 RNP AR

ICAO doc 9906 vol III QA manual

ICAO doc 9368 IFP Constr. manual

Transport Canada TP308 up to the latest change 8



Introduction

Despite the introduction of CAD/GIS and automation, the design workflow is always the same:

Draw, assess and iterate until all requirements are satisfied for a safe operation

Designer's experience helps reducing the number of attempts/iterations.

Main goal of FPDAM : increasing the automation level to minimize the number of human operations (often repetitive and without any “added value”), leaving to the user the responsibility about the most significant design choices.

FPDAM:

does not depend on a specific (COTS) CAD/GIS environment:

- has its own geographic and geodesic engines
- is released with its own graphic environment 2D/3D

exploits CAD/GIS as a view :

- graphic capabilities to visualize the internal application domain
- import/export functions for data I/O (AIXM 4.5 / 5.1)
- Optional CAD (Bentley Microstation) tools for designing new geometries to be associated to the domain and able to visualize data in dgn, dxf and dwg formats
- Optional Google Earth connection

Family composition

FPDAM – the most complete design system

- FPDAM ICAO
- FPDAM TP308

AeroChart – SID, STAR, Approach (SSA) draft charts creation

SSA AeroReport – professional and fully configurable textual report creation

SSA Encoder – data consistency checks and central AIM DB data storage of SSA

FPSAT – RNAV SSA procedure validation

Supported flight procedures

PRECISION/NON-PRECISION for conventional / RNAV (DME/DME, SBAS, GLS, APV Baro, APV SBAS) and RNP APCH AR (ICAO doc. 9905) procedures

- MSA (including subsectors)
- Circling (with and without limitations)
- Approaches/missed approaches (straight and turning at altitude / fix / navaid). Unlimited number of turns/segments allowed for automatic protection area creation.
- Departures (with/without track guidance, with/without adjustment points, straight and turning). Unlimited number of turns/segments allowed for automatic protection area creation.
- STAR (straight/ turning, DME arc based) / En-Route
- TAA (including subsectors and stepdown arcs)
- FAS Data Block production
- SRE, PAR

Main functions

A given project may contain several procedures of different types (even on different airport / runways) for separation and harmonization analysis

Automatically checks criteria inconsistency during the design

Uses geodesic calculation for all the procedure elements

Automatically creates protection areas and assesses the whole procedure or segment by segment

Allows manual modifications of the protection areas

Stores all the SSA data in a complete and extended AIXM 5.1 dataset (including geometric information)

Main functions

- One step assessment of all the “airport related” elements (SSA; OLS, etc)
- ARINC 424 -19 automatic coding
- ARINC 424 – 19 import and export capabilities
- Terrain and images loading for display and assessment
- Dedicated alphanumeric interfaces for ATS data editing
- Modification of the ATS data for what-if analysis
- Annex 14 Surfaces construction and assessment
- Bounded airspace and airways design and assessment against obstructions
- SSA report automatic creation

Architecture

FPDAM can be installed in two possible configurations:

AeroDB integrated:

- The unique and most complete offer of a full AIM system on the market
- Full traceability of data chain guaranteed by the project manager and AeroDB
- All the systems are developed by IDS AirNav thus no need for any development for the interoperability and integration
- Maintenance of the SSA done by loading the last published data
- Off-line capabilities available

Standalone:

- The most professional tool on the market for the design
- Integration with other IDS AirNav system components available

Architecture: Integrated

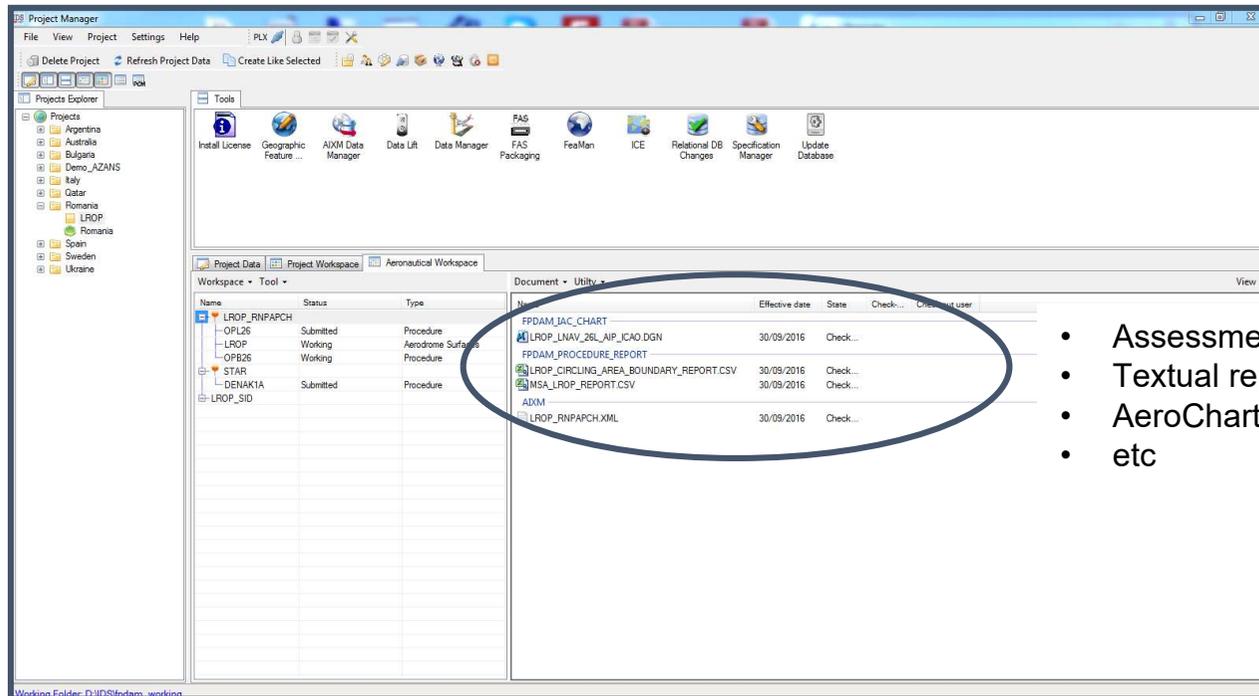
Data import and dissemination

When connected to AeroDB, the project manager allows the cataloguing of all the input and output data used for each single project:

- *ATS data loading at specific effective date (Aerodrome, RWY, waypoints, SSA, MSA and minima)*
- *ATS data filtered by geographical box*
- *User documentation (assessment reports, SSA reports, etc) cataloguing*
- *Detailed reports on data available*
- *The SSA Encoder checks the consistency of the data when committing back to AeroDB (if SSA Encoder is foreseen)*
- *The produced draft chart for SID, STAR, Approaches (if AeroChart is foreseen)*
- *The FPSAT project (if FPSAT is foreseen)*

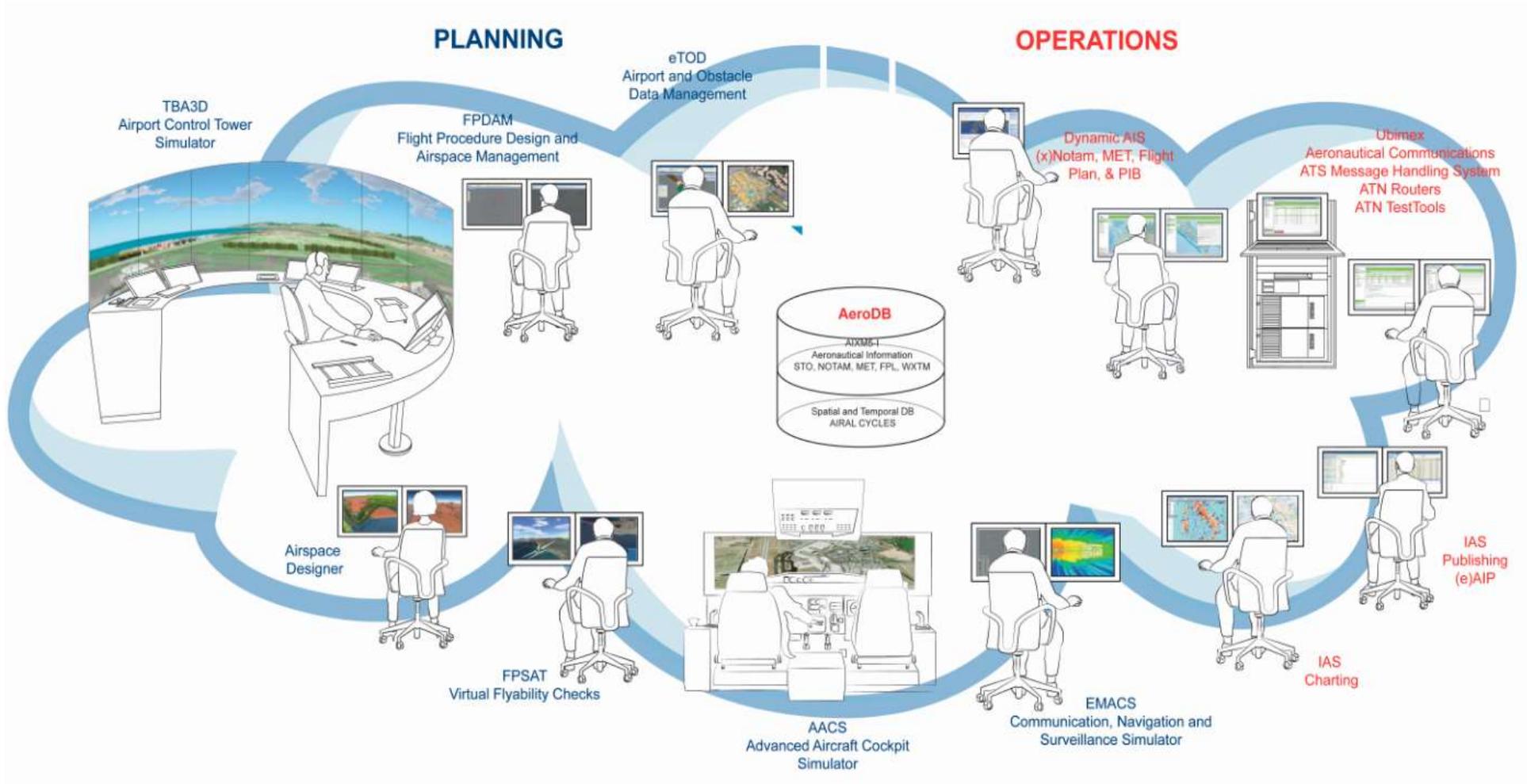
Architecture: Integrated

All the input and out files produced by the designer are checked-in on request by the user in order to track user's choices and intermediate calculations.



- Assessment report
- Textual reports
- AeroChart output
- etc

IDS AirNav Offering



It is the IDS AirNav answer to the ADQ mandate for traceability for the design phase:

- Tracks all the input and output data from / to any tool integrated in the IDS system (FPDAM, eTOD, EMACS, etc)
- Defines the data mandatory or not for a given project type
- Creates the scenarios for any specific procedure project
 - ATS data at a specific effective date
 - DTM, Raster, information layers available at a specific effective date
 - Integrates output of other tools in / to FPDAM
- Creates reports of the loaded data for a specific project
- Keeps versions of any loaded data for a specific project
- Checks data changes of ATS data and repository (data and files)

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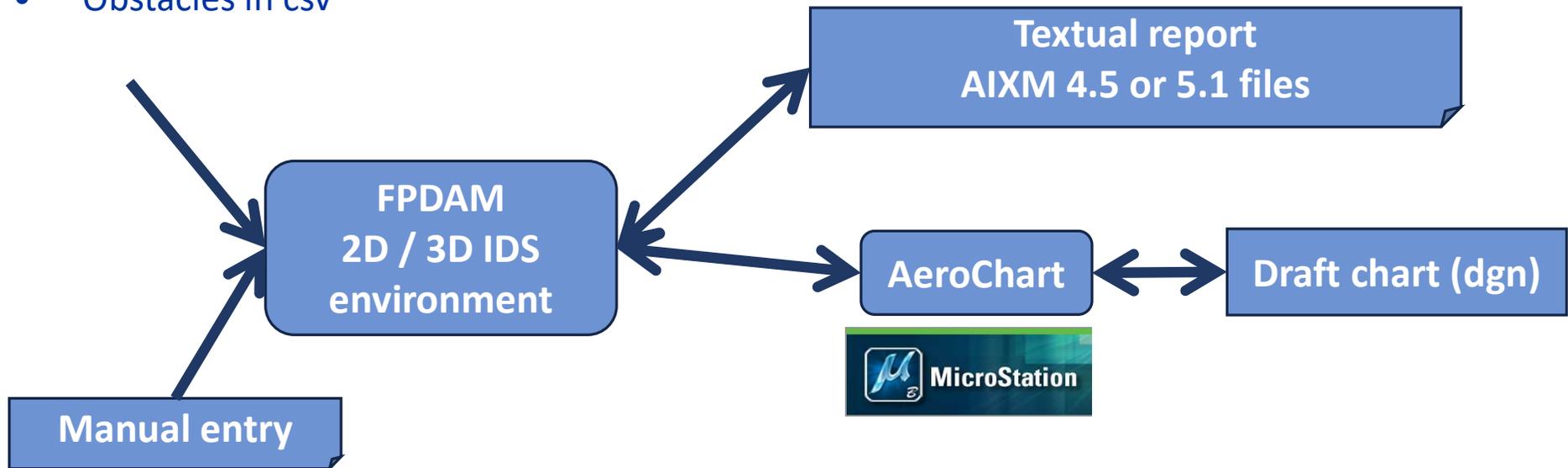
AeroChart – SID, STAR, Approach (SSA) draft charts creation

SSA AeroReport – professional and fully configurable textual report creation

FPSAT – RNAV SSA procedure validation

The most flexible in terms of system deployment

- AIXM 4.5/5.1
- Obstacles in csv



No need for any mandatory third-party COTS SW

- No training on third party software
- No extra costs
- No migration / maintenance issues

Additional data management

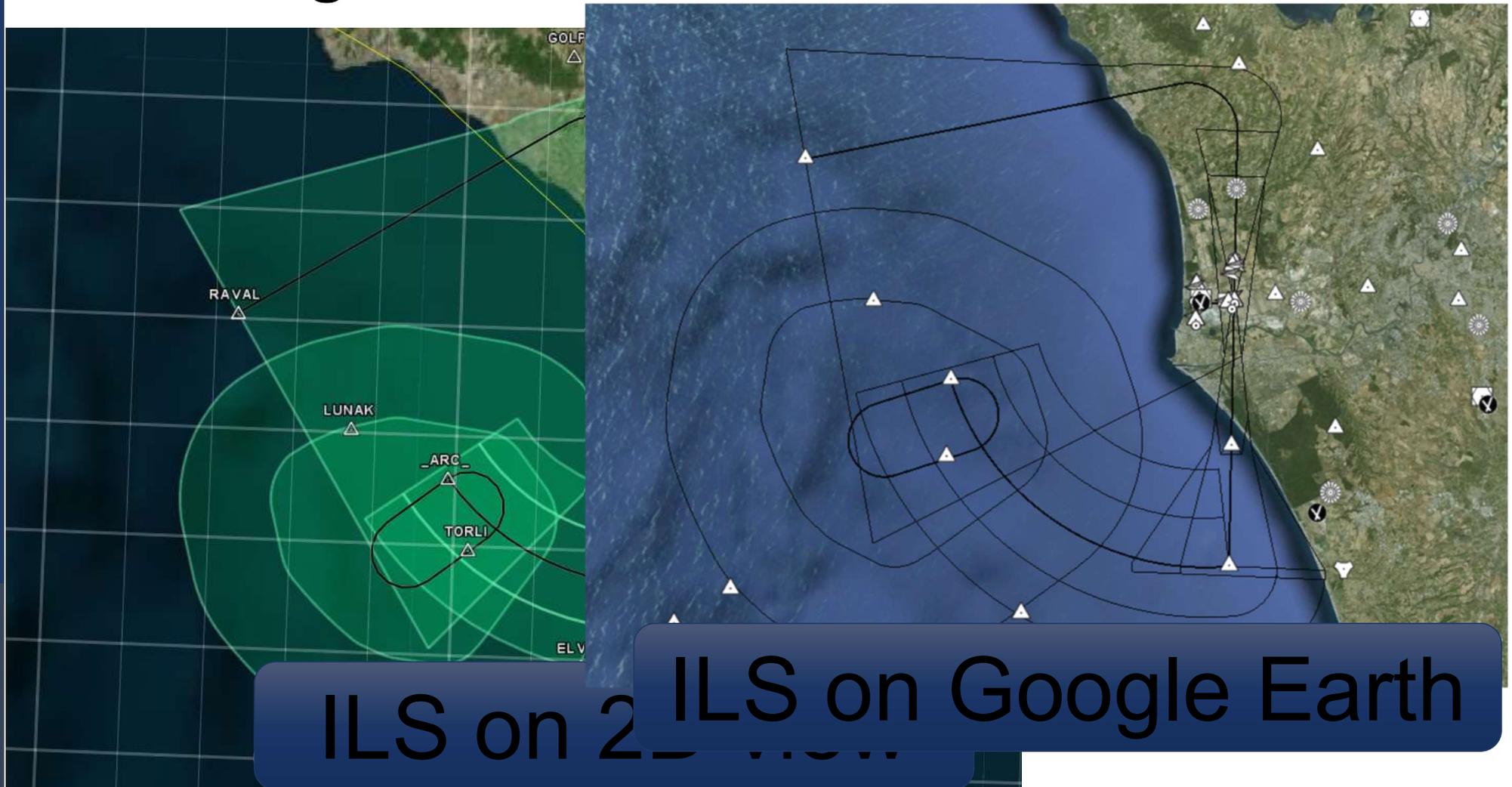
No need for any re-projection of terrain, pictures, and other layouts as it is done automatically on the fly

Full open formats management for terrain and images (DTED, DEM, BT, hgt, etc)

Modification of the geographical projection after data loading available

Fully configurable CSV import capabilities for human made obstacles

IFP management



IFP management

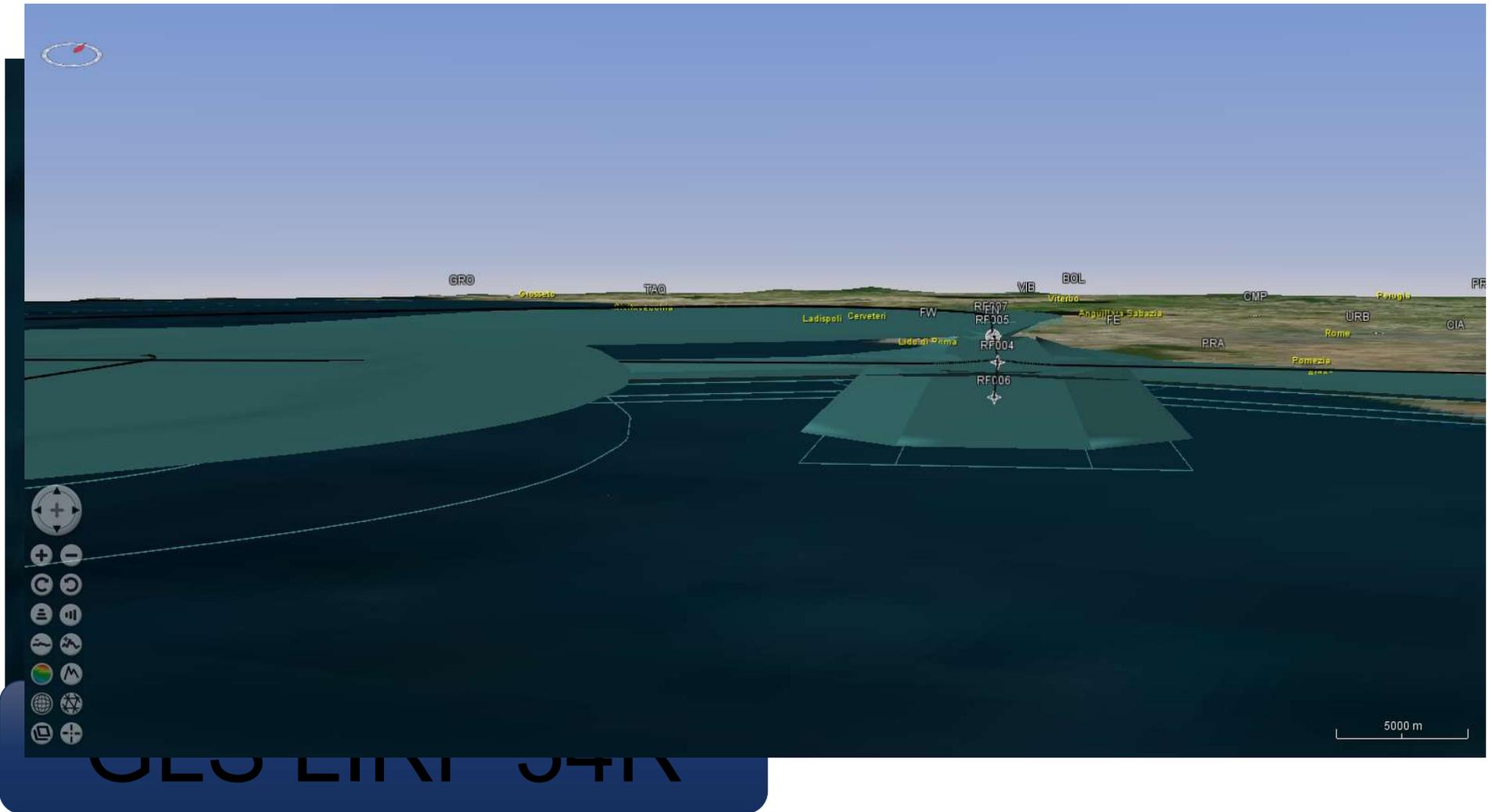


IFP management



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IFP management



Obstruction assessment

The obstructions list after the assessment is ordered by the most penalizing depending on the assessment type (sloping surface / flat area)

The list can zoom on the controlling obstacles

Automatic storage of the penalizing obstacle in the protection areas metadata

Frangible obstacles can be skipped

Preview of the landing minima from the obstacle list

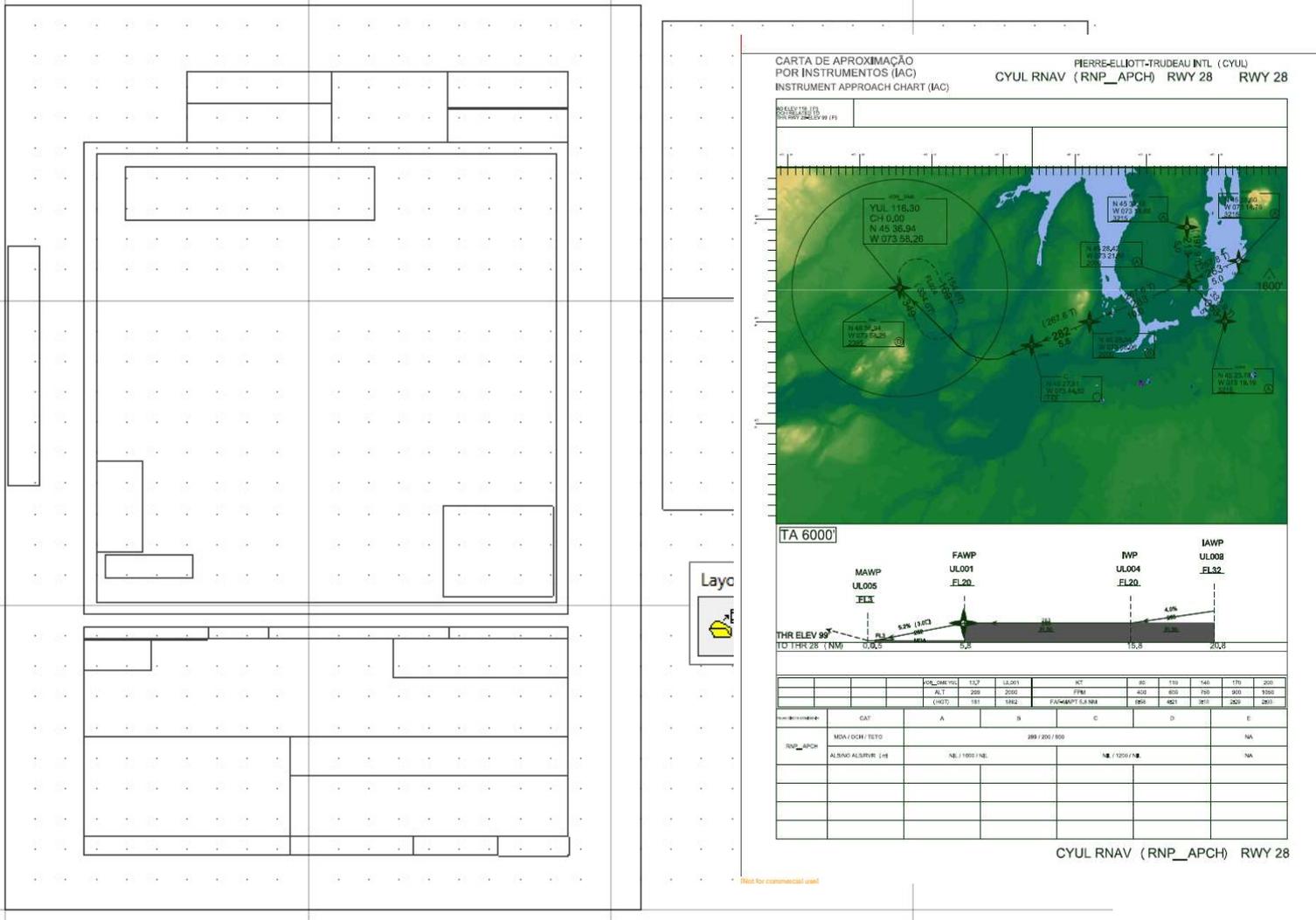
Highlight the controlling obstacles for the whole procedure

Clear identification of the obstacles requiring OCA/MDA adjustments

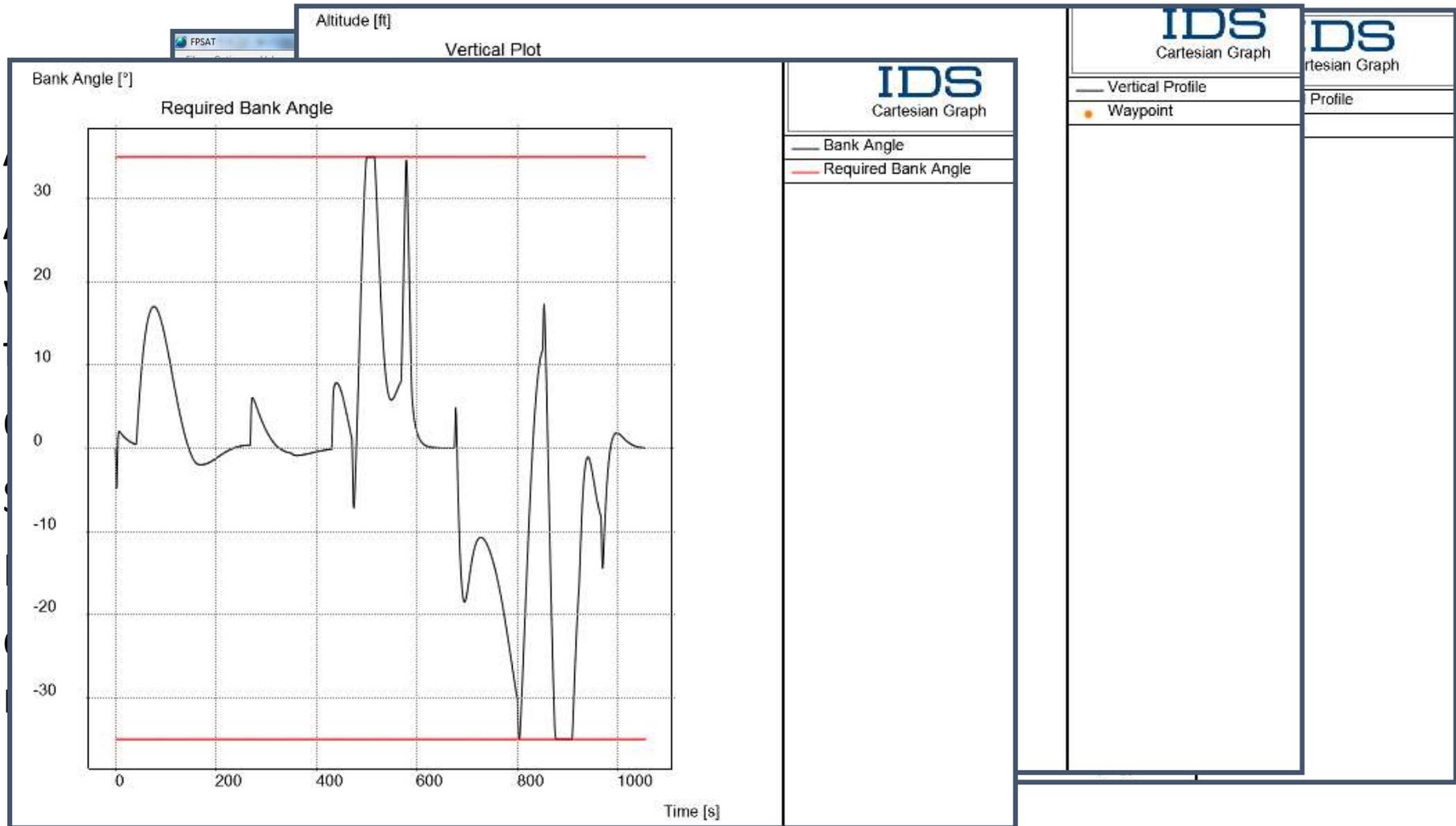
Number of columns to display configuration available

Draft SSA Charts - AeroChart

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Charts l
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SSA ground & flight validation - FPSAT





THANKS FOR YOUR ATTENTION



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