

Authoring and publication of aeronautical information and charting



Solution criteria

- Data-centric AIXM 5.1 solution for Aeronautical Information Management, supporting custom extensions to AIXM model
- GIS-based charting tool, providing geospatial functions
- Structured document processor for AIP authoring
- Bilingual publication support
- Single source of aeronautical data
- AIXM 5.1 temporality
- Document version control
- Data change impact analysis
- Data consistency checks
- Multiple AIP publication types, ICAO Annex 15 or custom
- Standard ICAO charts or custom
- Fully customisable symbolisation and layout
- Auto-generated tables
- Auto-generated customisable features, including IAP profiles, MSA circle, compass rose, scale bar, labels, symbols
- Automated label placement / deconfliction

Given an increasing number of airspace movements, high requirements for the safe performance of air operations and the prime importance of navigation data, the industry requires solutions for comprehensive, up-to-date and authoritative aeronautical information.

The challenge

The evolution of Aeronautical Information Services (AIS) demands an integrated, data-centric approach, in line with the ICAO roadmap for the transition from AIS to AIM and compliant with the ADQ implementing rules. All segments of aviation operations, from flight planning and navigation to air traffic control, make use of a variety of charts, standardised by the ICAO and divided into 17 different types.

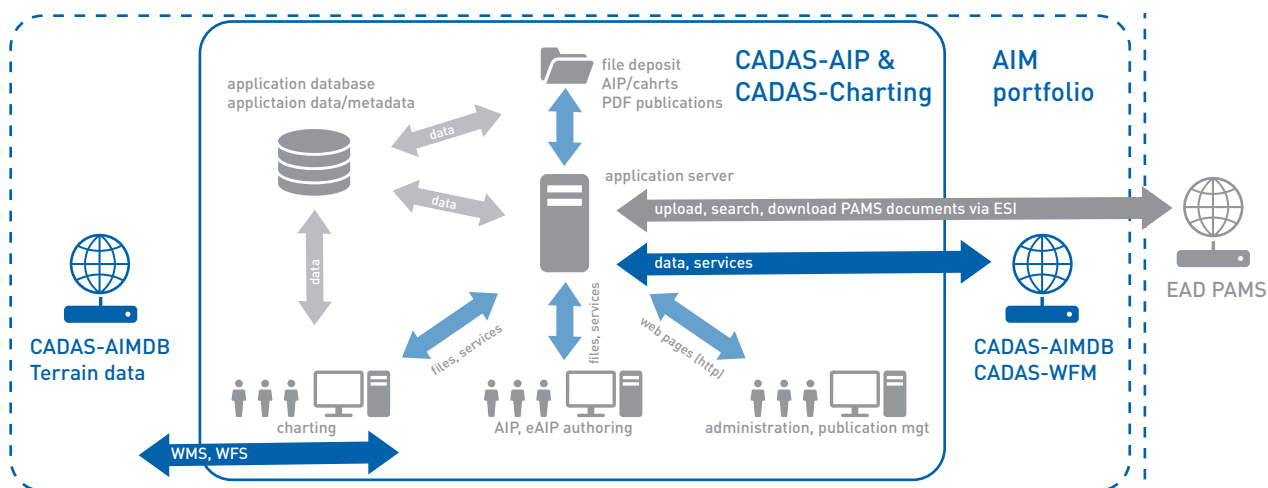
The solution

The data-centric paradigm of aeronautical information is built on a harmonised AIXM 5.1 data presentation layer, processed by corresponding application components, based on Service Oriented Architecture (SOA).

ICAO Annex 4 - Aeronautical Charts defines the obligations of states to make certain ICAO aeronautical chart types available, and to specify chart coverage, format, identification and content including standardised symbols and colour usage.

Frequentis Comsoft addresses the need for both uniformity and consistency by providing a managed aeronautical information publication (AIP) solution, including a broad range of aeronautical charts, with up-to-date high-quality information, to serve multiple different purposes.

The management and authoring of AIP and aeronautical charts based on AIXM 5.1 data guarantees aeronautical information in easy-to-use publication packages, for both digital and paper formats, including common eAIP, general purpose PDFs, georeferenced multi-layered PDFs, as well as the publication of ICAO data sets according to ICAO Annex 15 Amendment 40.



Frequentis Comsoft supports AIM users by providing interoperable information management components for all stakeholders along the aeronautical digital data chain, increasing efficiency and quality in automated data handling from data origination at airports to data ingest by airlines.

A detailed view of the solution

An AIP tool provides all of the necessary means for creating and editing aeronautical publications such as AIPs, eAIPs, supplements, amendments and circulars. The automated publication-generation process ensures that all organisational requirements are addressed and managed by workflows. This allows users to automatically populate publications with the latest aeronautical information while keeping all controls, validations and approvals in the hands of the respective stakeholders. The document management component handles multiple publications with multiple temporal versions. The system automatically selects the appropriate temporal data version based on the effective date.

In order to handle tabular data efficiently, a flexible table generator not only generates standard tables automatically, but also lets the user easily and effortlessly redefine custom table definitions that access data directly from the AIXM 5.1 database or perform custom data processing and transformation tasks. Multilingual support comes in two forms: dual-flow AIPs (side-by-side language versions), and publications with different languages in single flows. Consistency is ensured by linking to common data features. If an aeronautical feature is updated in the database, it is automatically updated in all language versions of the publication.

Publication management components give the user considerable control over publications and their content. This setup makes it possible to separate the publication assembly and authoring roles. Document management allows handling of multiple publication types with full temporal version control.

Another important feature is the integration of text with graphical content (charts) in the overall publication solution. Both text components and charts are handled as items in a publication tree. Graphical elements can be easily linked with the textual components of a publication. The publication engine automates publication in XML, HTML (eAIP), PDF and publication to PAMS.