



Airline Components & Solutions

Avitech .Wiz@rd Family
Avitech AviSuite

Aeronautical Data
Obstacle Data
Digital Terrain Data
Digital Service Models
NOTAM, Briefing
ICAO and Eurocontrol FPL



The Global Air Navigation

The role and importance of aeronautical data has changed significantly with the implementation of Area Navigation (RNAV), Required Navigation Performance (RNP), and airborne computer-based navigation systems, including Global Navigation Satellite Systems (GNSS). These systems are all data-dependent, and in that respect aeronautical data have become the necessary critical components of the system. Consequently corrupt or erroneous aeronautical data can potentially affect the safety of air navigation.

The advent of Precision RNAV (P-RNAV) for terminal operations (RNP <0,3, RNP SAAAR) will enhance the requirements again. Therefore the airline industry, aeronautical data providers, aeronautical data integrators, system suppliers together with ICAO have established standards and recommended practices which require introducing a properly organised quality system. This quality system must provide users with the assurance and confidence that distributed aeronautical data satisfy defined operational requirements for data quality (accuracy, resolution and integrity) and timeliness.

The required data integrity classification of 10^{-3} , 10^{-5} , and 10^{-8} is not achieved yet through the whole aeronautical data chain; re-entry or manual transfer of data is one of the major factors for data integrity loss and missing verification processes cause data corruptions.

The Avitech product design focuses on databases, exchange and interface components as well as workflows to assist the establishment of an

Uninterrupted Electronic Aeronautical Data Chain

from capturing of the data at data sources up to the usage of the data in Flight Management Systems (FMS).

To assist this undertaking in airlines, flight plan service providers, military air lift agencies, Avitech offers products which include:

- Static Data Bases
- NOTAM Data Bases
- Flight Plan Data Bases
- Workflow Implementation
- Exchange Layers
- Interfaces
- 2D and 3D Visualisation
- Applications:
 - Data Management
 - NOTAM Management
 - FPL Management
 - Enhanced Briefing
 - Briefing Update

System Integration

The databases, exchange layers, interfaces and applications are operating system independent and built to be able to be integrated into an existing airline or military IT environments. A separate server can be introduced for the databases and applications if necessary.

To assist the electronic interface between data end-users (airlines, general aviation, military) and data service providers on one side and CAAs, ANSPs, and data service providers on the other side Avitech offers the Avitech Aeronautical Exchange Layer (AxL) for all data transfer point between these interfaces

of the aeronautical data chain. The AxL is an Enterprise Service Bus (ESB) forming the communication bridge for a Service Oriented Architecture (SOA).

The interfaces to the existing infrastructure and to 3rd parties are:

- Message Communication Interface (AFTN, AMHS, IATA Type-B)
- AxL (AIXM XML 3.3+., AIXM XML 5.0 Obstacles, Meta Date XML Schema for DTM, NOTAM XML Schema, Briefing XML Schema, FPL XML Schema, Eurocontrol EAD ESI)
- AxL (XML based) to customer built dispatcher HMI
- ARINC 424 Data Loading
- DAFIF 8 Data Loading.

AxL includes a Message-oriented Middleware (MoM) to interface to external system (clients).

.Wiz@rd Family Database

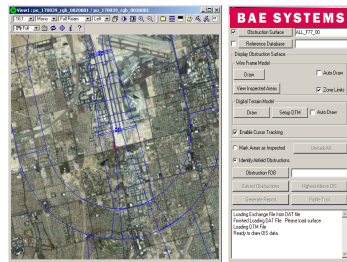
The Avitech .Wiz@rd Family of aeronautical databases include:

- Aeronautical Static Date
- Obstacle Data
- Terrain Data
- Service Models
- AIPs and MAPs

The databases are compliant to all relevant documents of ICAO, Eurocontrol, RTCA and EUROCEA, like AIXM 3.3 for aeronautical data, AIXM 5.0 for Obstacle Data, Annex 15 and RTCA Do276 / EUROCAE ED98 for obstacle and terrain date. AIXM 3.3 is extended for military users in order to cover the specific data requirements for military flying.

2D and 3D Visualisation

Viewing of airspaces, ATS Routes and other data is possible by using the Airspace Modeller to support flight planning and flight following. Layering of aeronautical data and geo-referenced images is possible.



NOTAM Management

NOTAM management provides functions to operators to harmonise all world-wide NOTAM formats to one value added NOTAM format which especially supports narrow route, polygon, and trajectory briefings.

Processed NOTAM formats include:

- ICAO System NOTAM Format
- Eurocontrol, ICAO Asia/Pacific OPADD Format
- US FAA FDC and Domestic Formats
- US FAA International Formats
- US DoD M NOTAM Format
- Canadian Domestic Format (English & French)
- Jeppesen NOTAM Format

For users who like to use EAD as NOTAM source an ESI is provided as part of AxL.

Flight Plans, Inbound/Outbound

The Flight Plan application integrates ICAO and Eurocontrol filed Flight Plan functions like:

- ATS Message of ICAO PANS ATM (Doc 4444)
- Eurocontrol ATFN Messages (IFPS, CFMU/ETFMS Ed. 11)
- Inbound-/Outbound Lists
- Flight Following
- Eurocontrol CRAMS
- Airspace Use Plan and Update Plan

Enhanced Briefing

The enhanced briefing enables dispatchers and pilots to generate 4D pre-flight information bulletins containing NOTAM, SNOWTAN, ASHTAM, OPMET and Company NOTAM in the following versions:

- Aerodrom Specific
- FIR/UIR Specific
- Narrow Route Specific
- Polygon and Circle Specific

In addition to the geographical description for a briefing the flight profile, the flight rules, the ETD and ETA are further parameters to reduce information to the required minimum level.

Briefings can be kept up-to-date and automatically directed to ad-hoc requested output devices related to AFTN, SITA, ACARS, data link, printer etc. to ensure flight number related updates