



The AviSuite Solution

An integrated highly customizable application for aeronautical information and messaging



Connecting Ideas

The AviSuite solution is the answer to optimizing the creation, processing and handling of aeronautical information and messages independently of the location and workstation from which operator has to perform on their daily duties.

The AviSuite look and feel used in customized applications – depending on environmental limitations (like web based, low bandwidth, secure area, pure messaging clients, thick clients, etc., working position obligations and capacity limitations) addresses exactly this problem. A large variety of aeronautical data and messaging applications are supported as well as system to system interfaces.

The product is split up into the graphical user interface, services, b2b interface, databases as well as a common user management.

Communication between the components is by an XML-based protocol. This allows the separation of the components.

Depending on the target environment a message oriented middle-ware supports communication between different sites.

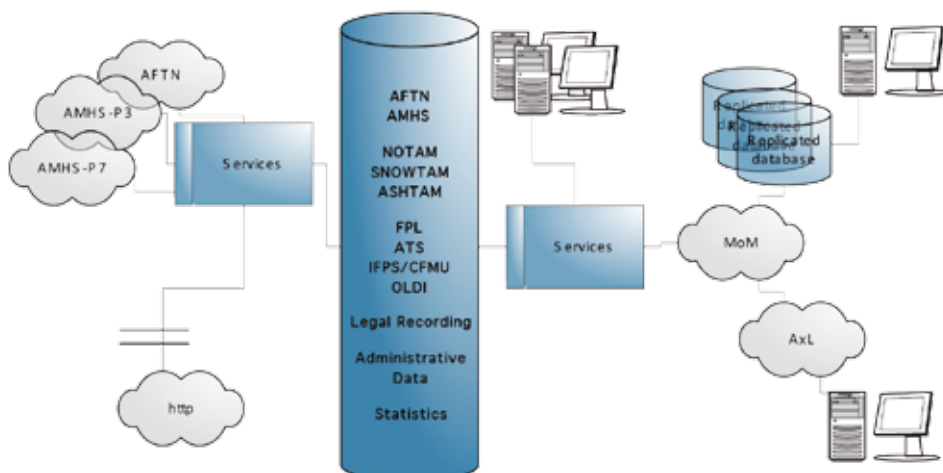
A short cut to

- AMHS User Agent
- AFTN TCP/IP User Agent
- Automated NOTAM Management
- Proposal origination
- EAD Interoperability
- Flight Operation Display
- Flight Plan creation
- Flight Plan converter
- CFMU/IFPS interaction
- Pre-Flight Information Bulletin
- Combined and integrated PIB
- Customizable PIB
- Electronic PIB
- Web for Pilots

Combine the required components for your operational needs!

National extensions can be implemented as add-on to the wide range of existing components.

The easy to install and easy to use client allows a quick and efficient adaptation process.



IMCP – AFTN/CIDIN/AMHS

The integrated Monitoring and Control Position (iMCP) provides a user-friendly graphical interface to manage all components of the AviSuite AFTN/CIDIN/AMHS message switch.

It indicates all system events to administrators and operators. Different types of system events can be configured as audible/visible alarms which have to be acknowledged. A large variety of commands allows channel control, circuit and address diversion, etc.



Multiple versions of configuration tables can be maintained for all applications; specific checks ensure that only mutually consistent table sets can be activated. AFTN/AMHS address look-up tables as provided in CSV format by the ATS Messaging Management Centre (AMC) can easily be imported into the X.500 Directory and are thus available to the AFTN/AMHS gateway as well as to all AMHS User Agents.

AFTN Messages received with format errors and/or non-routable addresses are forwarded to an intelligent correction position.

Operators can retrieve and repeat messages using a variety of search criteria. Trace and journal data contain additional information about messages and their processing in the switch.

A statistics module provides meaningful statistical data which can also be exported into CSV files for further analysis with office tools.

The object oriented design of the iMCP takes into account the workflow of administrators and operators and allows for easy navigation between the function groups.

AFTN/AMHS User Agents

Both the AFTN TCP/IP and the AMHS User Agent are advanced messaging clients meeting the needs of ATS Users. The applications combine the convenience of a highly sophisticated ATS terminal application with the message handling capabilities of AFTN or

AMHS depending on the customers' requirements.

The entry point for all messaging related data in AviTerm is the Message Office. It is used to collect all messages submitted and received by the messaging AviUnit. Its HMI is split into three sub windows, a tree view, a table view and message preview – similar to the view presented by most of the popular email clients.

A message can be previewed by selecting it in the table view.

In order to see all details of the message, it can be opened in the specialized AviUnit.



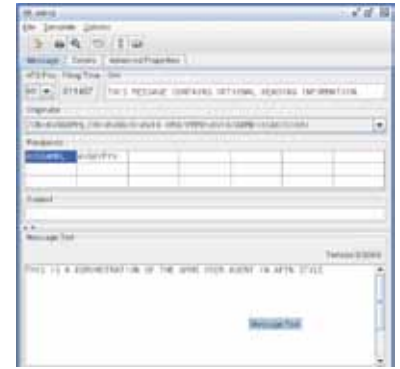
If a received message contains information elements that require the immediate attention of the user, an audible and visible alarm is generated notifying the user of the relevant event.

A message can be generated using different methods. The simplest method is to fill in all necessary data into the input fields of the corresponding application window. To compile a new message, the user may also load an existing message for modification. All AviUnits implement a common template handling mechanism allowing the creation, storage and administration of message templates. In centralised installations, templates may even be shared amongst the user community.

The software comprises comprehensive syntax and (wherever possible) semantic checks of the data entered by the user. This ensures a high quality of all messages submitted.

A specialized frame for AFTN messages supports all the AFTN specific features necessary according to ICAO Annex 10, Vol. II.

In order to ease the migration from AFTN to AMHS, the AMHS frame is structured in a manner that users accustomed to AFTN quickly feel at home.



The integrated functionality of a Directory User Agent (DUA) automatically handles the conversion of AFTN addresses into AMHS addresses and vice versa. This ensures that addresses are always consistent and reduces the risk of delivery failure due to mistyped AMHS addresses.

The AMHS User Agent can be connected to an ATS Message Server either by means of the MTS Access Protocol P3 or the MS Access Protocol P7.

In addition to the Basic ATS Message Handling Service the AMHS User Agent supports the following Extended Services:

- ATN/AMHS Directory Services
- Support of Unstructured Binary Data (File Transfer Body Part)
- Use of IPM Heading Extensions
- Security Services

Static and Basic Database

The Static and Basic Database is core to all data validation. It holds static data – either as AICM/AIXM data in the full version or a minimum set – sufficient for a qualified NOTAM and Flight Plan validation. The AICM/AIXM version is designed to store all aeronautical static data in an AICM/AIXM database. The EUROCONTROL AIS Data Process and the Static Data Procedures are implemented and ensure that there is data consistency between all applications.

Both versions allow the data to be maintained manually or automatically by importing data in accordance with the AIRAC Cycle date from various sources such as EUROCONTROL, National Geospatial-Intelligence Agency (NGA) or other industry suppliers. AIXM, DAFIF and ARINC424 files are supported.

The basic database is a rule container for validation of dynamic data such as NOTAM or Flight Plans.

NOTAM Management

This subsystem is designed to automate NOTAM creation, storage, distribution and retrieval in full compliance with ICAO standards. It covers NOTAM, SNOWTAM, ASHTAM, ANM, AIM, and CRAM and assists harmonisation of NOTAM formats. Specific NOTAM formats such as US FDC and Canadian Domestic are also supported. Regional extensions (e.g. EUROCONTROL, ICAO Asia/Pacific) are not missing in the wide function range.

Depending on the operational needs almost the same GUI exits for:

- Centre clients – including full database support – for creation and production
- Clients at the sites – with static database support – for proposal creation
- Messaging clients – with or without static database support for proposal creation



A rich scale of features is available to support the operator to the highest extent like Multipart handling, automatic checklist creation (including latest supplement) and checklist analysis as well as handling missing NOTAM.

Pre-Flight Information Bulletin

The main functions of the Pre-Flight Information Bulletin Package are Bulletins and Summaries. Update service and scheduler functionality are also available.

Standard Bulletins and Summaries are available based on FIR and Aerodrome.

Extensive calculations are used to exclude nonrelevant NOTAM from geographic Bulletins such as

- Special Area PIB
- Narrow Route PIB

Not customized enough? Not a problem. Advanced users can even customize the output of a PIB!

The PIB output is generally a PDF File, which can be printed, faxed, sent via eMail or stored in an archive.

A textual form without any graphics is also available for AFTN output devices.

Depending on the context of the system procured the system also supports:

- iPIB, OPMET and WAFs
- ePIB/geographic display of a bulletin

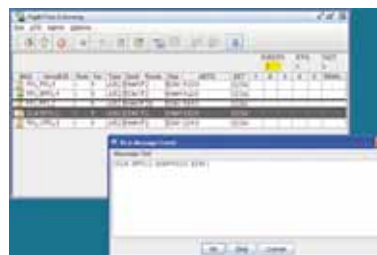
AviWeb

The Pre-Flight Information Bulletins as well as limited Flight Plan filing are also available for the Internet.

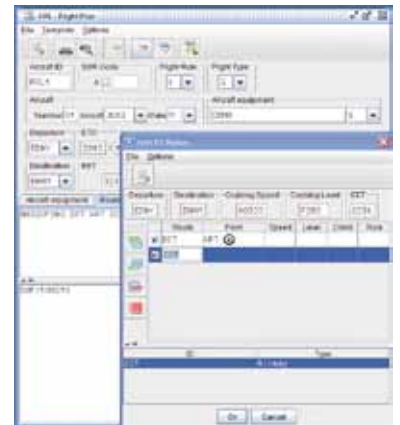


ICAO & IFPS/CFMU Flight Plan

This part of the system is designed to automate the preparation, validation, storage, distribution and reception of ATS Messages of ICAO PANS ATM (Doc 4444) and EUROCONTROL ATFM Messages (IFPS, CFMU/ETFMS Ed. 14).



Out- and Inbound lists assist the operator in his daily work as well as the flight following function.



System Wide Information Management (SWIM)

The system-wide availability of aeronautical data is a requirement of ever increasing importance – emphasised by programmes like NextGen and SESAR.

The Avitech response to this requirement is the Aeronautical Exchange Layer (AxL). It provides a seamless access point to the complete range of services and data available from Avitech.

The AxL is designed in a Service Oriented Architecture (SOA) and supports mechanisms like Replication, Publish/Subscribe and Request/Response.

AxL is delivered either in the Enterprise Edition or customised for specific applications. The software bundle contains all software, manuals and test server access description.

To support third party development an AxL Test Server is available at Avitech in Friedrichshafen, Germany, and is reachable through the Internet or other connections.

Benefits

AviSuite standardises common services such as login, look-and-feel, handling, colour schemes and themes, graphical user interfaces and context sensitive online help over the complete Avitech AviSuite product range. Costs of installation, familiarization and training decreases while efficiency increases.

AviSuite also supports user authentication and authorization based upon standard LDAP protocols, thus integrating user administration tasks seamlessly into any commercially available directory server product which supports LDAP access. Authorisations can be customized by user role.

End User Sample Configuration

A typical configuration from the end-user point of view consists of a combination of a central website and the AviTerm client application. Any authorised workstation on the LAN/WAN, can download the client application by means of a standard web browser.

In addition, the web site can provide further useful information and links such as:

- Download and installation of the Java virtual machine
- Display of maintenance information relating to the system servers
- Important information from the system administrators
- Access to an information library

The Java Web-Start technique is used to keep the client application up to date. Updates are installed automatically when available without the need for system administrator privileges.

Customising the Functionality

Our design goal for AviSuite was to implement a highly customisable set of applications (AviUnits) in order to be able to support any customized client.

A variety of application-specific clients can be plugged in to the common user environment to suit the customer's needs.

Each AviUnit (see list below) can be combined to a graphical user interface for a specific working position.

If an AviUnit does not match your rules and requirements an adaptation as well as a customer specific implementation is easily possible.

Even without software changes adaptations can be easily made. For example AviSuite User management provides a wide range of permissions grouped to roles for easier handling. New roles can be defined, existing ones being replaced or removed depending on the destination environment.

AviSuite – combining services and graphical user interface – is always your specific solution. Browse through the catalogue of existing AviUnits and check your requirements!

AviUnit Products

The range of AviUnits currently available includes:

- AFTN Messaging
- AMHS Messaging
- Monitoring and Control Position
- Central NOTAM Management
 - NOTAM
 - SNOWTAM
 - ASHTAM
- NOTAM Proposal
- Briefing
 - Aerodrome
 - Normal Route
 - Special Area
 - Narrow Route
 - Combined PIB (FPL-based PIB and PIB-based FPL)
 - Integrated OPMET/WAFS PIB
 - Customized PIB
- ePIB (graphical visualization of NOTAM and Static Data Objects)
- Various Summaries
- Output Scheduler
- RPL
- Flight Plan database
 - Inbound Flight Operation Display
 - Outbound Flight Operation Display
 - Flight Following Display
 - ATS Messages
 - ATFM Messages (EUROCONTROL IFPS/ETFMS)
 - Coordination Messages
- Flight Plan converter
- Legal Recording

- Static Data Maintenance
- Static Data Display
- Address Lists
- User Management
- Aeronautical Exchange Layer

Expansion Capabilities

The AviSuite Software Solution was designed for reuse, scalability and ease of modification ensuring that the customer's initial investment is protected for the long term.

Technical Solution

Java, MOM/JMS, XML & XSL-FO, LDAP, JMX, SOA, ORM, AOP, Swing, Tomcat, JSP/JFS, various databases support.

System Requirements

The minimum system requirements are:

- Java 1.6 or higher
- Minimum of 512 MB RAM

Conformance Statement

AviTerm conforms to the DIN EN ISO 9241 (Ergonomic requirements for office work with visual display terminals).

Individual AviUnits conform to all relevant ICAO and EUROCONTROL standards (e.g. Integrated PIB conforms to level 6 of the EUROCONTROL integrated briefing concept) – for details see the relevant Avitech product datasheet.