

CADAS

AERONAUTICAL INFORMATION & MESSAGING SYSTEM

COMSOFT

PRODUCT INFORMATION

The COMSOFT Aeronautical Data Access System is a highly sophisticated Aeronautical Information and Messaging System, based on the latest web application technology. It covers a wide range of aeronautical applications and offers a large scale of different services distributed over its various modules so that the system can be easily adapted to any customer's needs.

The CADAS applications fulfil all requirements of ATS messaging, integrated self-briefing, NOTAM, OPMET, and flight strip printing. The dynamic HMI with its easy-to-handle graphical surface offers quick access to all features and fosters intuitive operation by means of convenient functions and various system services. CADAS terminals can be centrally maintained and monitored, i. e. no local installation, set-up, and configuration procedures are required. High scalability and flexibility make CADAS the ideal tool for installations ranging from small airports to nationwide solutions.

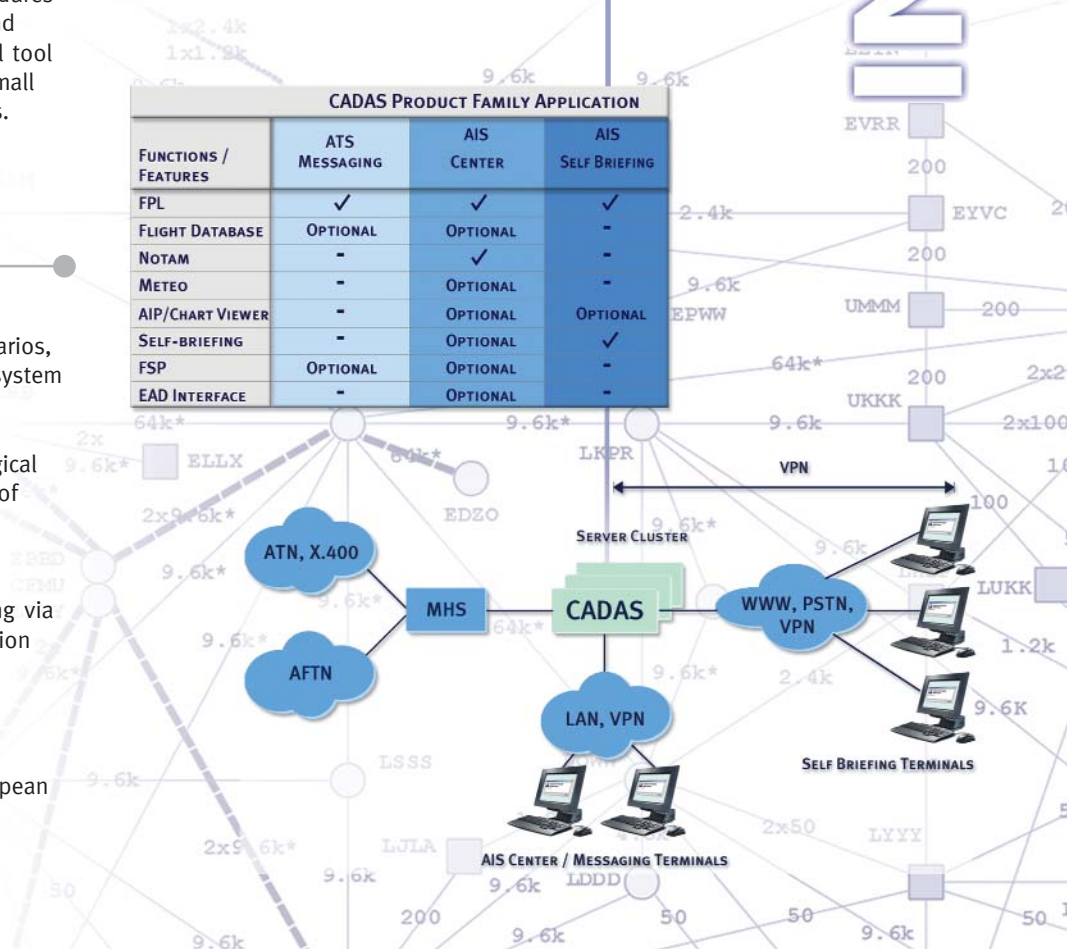
CADAS does not only strictly follow international standards and procedures; it was also developed in accordance with the latest recommendations from ICAO and EUROCONTROL.

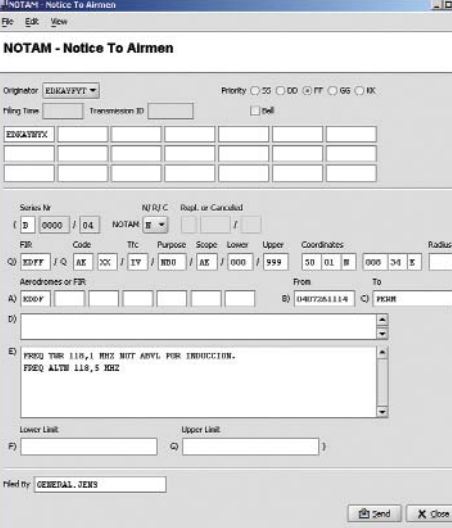
It goes without saying that current security standards have been applied, so as to meet the stringent requirements imposed on the ATC/ATM environment of today.

HIGHLIGHTS

- Perfectly suitable for various AIS/Messaging application scenarios, such as an integrated briefing system or ATS terminal solution
- Graphical overlay of meteorological information, clear visualisation of NOTAMS
- Integrated remote self-briefing terminal for pilots, home briefing via dial-up or safe internet connection
- Powerful wizard for the reliable creation of error-free messages
- Additional interface to the European AIS Database (EAD)

CADAS PRODUCT FAMILY APPLICATION			
FUNCTIONS / FEATURES	ATS MESSAGING	AIS CENTER	AIS SELF BRIEFING
FPL	✓	✓	✓
FLIGHT DATABASE	OPTIONAL	OPTIONAL	-
NOTAM	-	✓	-
METEO	-	OPTIONAL	-
AIP/CHART VIEWER	-	OPTIONAL	OPTIONAL
SELF-BRIEFING	-	OPTIONAL	✓
FSP	OPTIONAL	OPTIONAL	-
EAD INTERFACE	-	OPTIONAL	-





NOTAM Template

OPMET

OPMET services include TAF, GAMET, SPECI, SIGMET, and METAR templates, message retrieval, and OPMET database management. The possibility of including meteorological information in the CADAS Pre-Flight Information Bulletins and embedding image data for briefing purposes from external sources allow for a maximum of information for the operators.

AIS Architecture Overview

AIS APPLICATION

The AIS Application provides user services for Airlines, NOTAM Officers, MET Officers, and Tower Controllers and helps the user with the production, distribution, and management of FPL, NOTAM, and OPMET data. Depending on the individual responsibilities of a user and the preset access rights, the AIS Center Terminal provides flight plan handling, access to the flight database, NOTAM and OPMET handling.

NOTAM

Message creation is facilitated by means of a multitude of templates offered by the NOTAM module. NOTAM checklist and summary production help the user to check database consistency. Active NOTAMs are listed in a customized database viewer.

EAD INTERFACE

To round off the system's outstanding features, CADAS can be supplemented by an interface for the exchange of NOTAMs with the European AIS database (EAD).

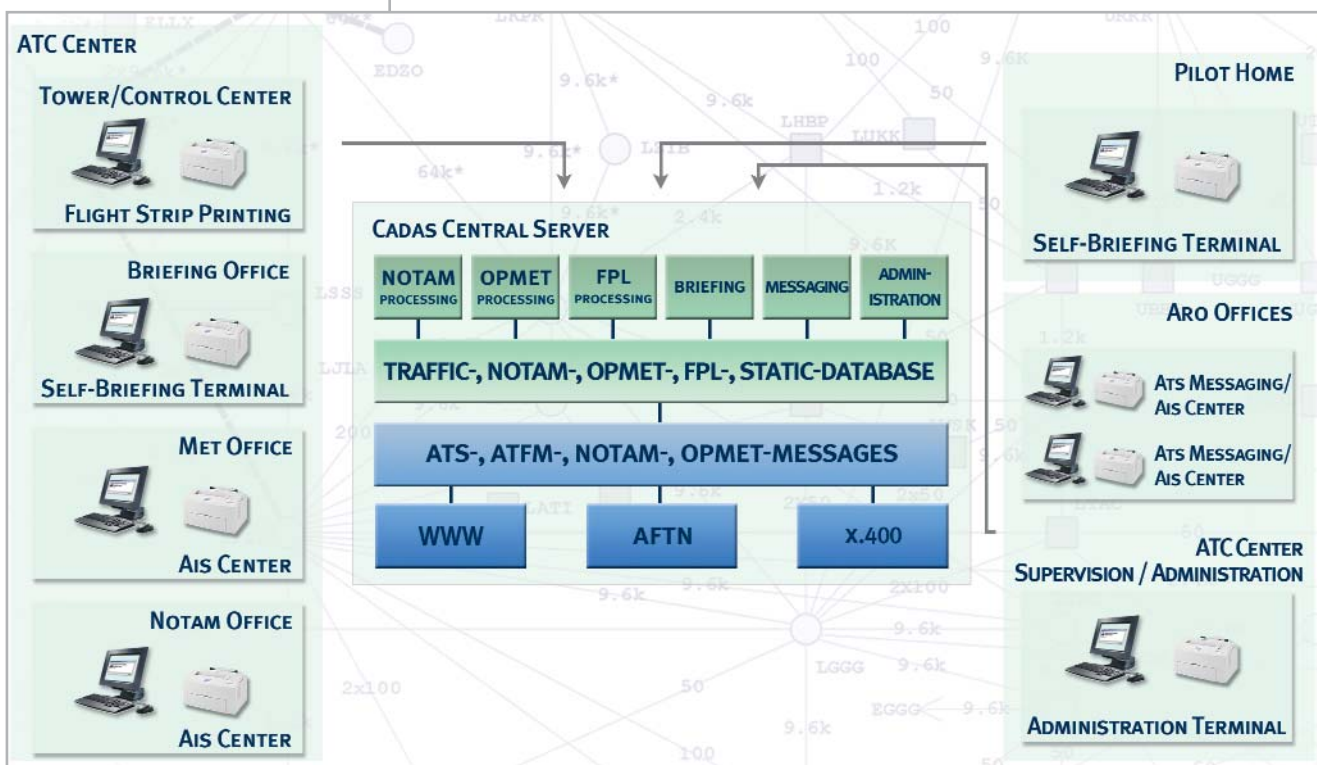
FPL

A powerful built-in field wizard assists the user in creating messages. Field checker and online field checks

guarantee the composing of correct messages so that no erroneous message will ever leave the system. Message operations are further facilitated by the possibility of storing pre-edited messages, flight plans, and routes in databases. Addressing FPLs and related messages is done automatically, which again reduces the possibility of errors. Special addressing features are provided if the system is operated within the IFPS zone.

FSP

Flight strips containing flight-relevant information for controllers can be printed as paper strips via the FSP terminal application. The system supports inbound, outbound, and over flight categories.



SELF-BRIEFING

The CADAS self-briefing application provides pilots with the latest and most accurate flight-relevant information and covers all aspects of an internet-home-briefing solution. Following the standards of the EUROCONTROL AIS AHEAD program, it implements the 'one stop shopping' model by providing information and services of AIS, OPMET, and ARO. Users can file flight plans, create PIB-based flight data, view, and select AIPs and Charts.

Depending on the flight category the system provides the following briefing types:

- Area Bulletin,
- Aerodrome Bulletin,
- Route Bulletin,
- Narrow Route Bulletin.

The system's strong graphical capabilities, such as NOTAM and chart visualisation, combined with a sophisticated filter with appropriate selection criteria, help to quickly get a clear overview of current conditions. Users can always be sure to be provided with the latest information as the system quickly reacts on bulletin updates and immediately sends a respective notification e-mail containing an amendment to the opening PIB.

AIP & CHART INTEGRATION

CADAS interfaces with COTS AIP- and chart-production systems. CADAS supports the standard ARINC and EUROCONTROL AIXM formats.

ATS MESSAGING APPLICATION

CADAS ATS Messaging provides a most flexible way to easily exchange, process, and visualize ATS messages. The system consists of an ATS message server and ATS messaging terminals. The ATS message server acts as a store-and-forward system, which stores incoming traffic in mailboxes and forwards it to the client terminals as soon as an operator starts to monitor a mailbox. A powerful load balancing mechanism enables the system to handle even a very large number of terminals.

Thanks to the automatic software deployment and the central user profiles, the ATS Terminal operators do not have to perform any set-up or configuration procedures.

The web-based ATS messaging terminal application offers a variety of convenient functions and features that facilitate the operators' routine work considerably. The features include ATS and ATFM message templates with built-in field wizard, which guides the operator through each message template. Thus, the creation of erroneous messages is virtually impossible, even more so because of field checkers and online field checks.

Special features are provided to automate and facilitate the addressing of messages. Various database filters are available, allowing to view sent and received messages, as well as to search for specific message types, aircraft callsigns, etc.

The system enables operators to monitor several AFTN addresses, represented by mailboxes, on a terminal simultaneously. In case of high traffic load, operators can also share the messages of a mailbox according to predefined filters.

DATABASES

CADAS maintains several databases, which are designed to handle

- international NavData ARINC 424 reference data set,
- all kinds of ATS messages,
- NOTAM / SNOWTAM / ASHTAM messages,
- MET Data messages,
- Flight Plan and related messages,
- on-demand and scheduled PIBs.

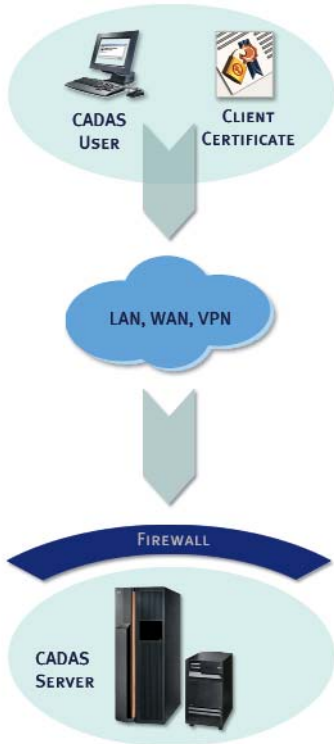
The screenshot shows the CADAS Aeronautical Information Services interface. It displays a Pre-Flight Information Bulletin (PIB) for Aerodrome EDDF. The interface includes fields for Service Type (FULL), Date (26 Jul 2004), Time (11:17 UTC), and Flight Info (Lower 000, Upper 000). It also lists Aerodromes (EDDF) and provides a legend for message types. The main content area shows a list of METAR and OBSERVED messages for EDDF - FRANKFURT/MAIN, including details like METAR EDDF 230502Z 02000KT CAVOK 1815 Q1015 NOSIG and OBSERVED: 23 Jan 2004 23:50 UTC.

Pre-flight Information Bulletin (PIB)

The screenshot shows the start-up screen of the CADAS ATS Terminal. The window title is 'Java Web Start 1.4.2'. The main content area displays the logo for COMSOFT GmbH and the text 'Starting application...'. There is a 'Cancel' button at the bottom right.

Start-up Screen

SECURITY CONCEPT



Security Concept

APPLICATION LEVEL

CADAS provides multi-level dedicated access profiles that can be adapted to the responsibilities of the users and their respective duties. The system administrator can easily assign access rights to each user individually.

The access to the system is protected by a highly secure two password access procedure: The first password gives access to network level, the second password is required to log into the CADAS application. Central supervision and event tracking of system user activities allow the administrator to initiate appropriate measures in the case of faulty system operation or system abuse.

ADMINISTRATION &

SUPERVISION

The system supervision, set-up, and database maintenance is provided by an advanced Administration Terminal. This monitoring tool also allows any time a quick overview of the current health of the system and application, as well as of the status of the system resources. All users currently logged in and all monitored resources can be checked at a glance. The users' transactions relevant from the operational point of view can easily be monitored in the system's event database.

TECHNOLOGY

The system is based on a client-server architecture; it consists of clustered LINUX database servers and COTS PCs. The servers as well as the databases are fully redundant, thus ensuring high system availability and data security.

By means of automatic software deployment, any standard WINDOWS- and LINUX-COTS PC can be used as CADAS client terminal. The terminal software is automatically deployed,

NETWORK LEVEL

All data transfer between client and server can be encrypted by using the VPN (Virtual Private Network) option. VPN also provides data integrity and user/terminal authentication.

To ensure a high operational availability and perfect system condition in the modern internet environment, network security and intrusion prevention have been thoroughly investigated during the last years, as security is considered crucial.

The results as well as the functional requirements for AIS/Messaging systems were decisive for the selection of a state-of-the-art firewall appliance. COMSOFT chose a real-time network protection appliance that is certified by the ICISA Labs, the global leader in information security product certification.

The appliance used for CADAS consists of a high-performance firewall, anti-virus module, content filtering gateway, and a VPN gateway. All network resources are protected against attacks and unauthorized access at both the network and application level by enforcing well-defined security policies.

installed, and updated without the need of manual interaction.

The terminals are linked to the server via TCP/IP-based LANs, WANs, or the Internet. The number of terminals can be easily upgraded by simply importing a new system license so that the user is free to extend and supplement the system at any point in time and following actual needs.

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