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E.ATIS[©]

ENHANCED

AUTOMATED TERMINAL INFORMATION SYSTEM



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1. Introduction

The E.ATIS[®] is a state of the art automatic system that converts selected meteorological products and air traffic control information into human speech. E.ATIS[®] uses the most modern technology in software and communication to ensure all the characteristics necessary for error free operation in the Airport environment.

E.ATIS[®] primary purpose is to convert ATIS (VOLMET) messages, generated from a variety of sources, into clear and concise human speech for distribution to aircraft and ground stations.

E.ATIS[®] offers the following:

- Attended or unattended operation.
- No periodic maintenance required
- Consistent and understandable speech in either digitized or synthesized voice.
- Reports in multiple languages either simultaneously on two different channels or alternating on the same channel.
- Operators need not be fluent in English.
- Remote operation.
- Information can be made available through several media such VHF transmitters, telephones, or the voice channel of a NAVAID.
- Remote monitoring.
- Configurable to meet the requirements of practically any airport.
- Configurable for redundant operation.
- Integration of control and weather data available to to any number of displays thus reducing the need for additional equipment or verbal communication
- Digital communication with aircraft via service networks.

The E.ATIS[®] is a stand-alone system that can be networked with meteorological or other airport systems.



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2. System description.

The complexity of the system is dependent on any particular application and varies from a simple, single workstation system to a fully networked system, which comprises redundant stations, monitoring stations and several ATC and TRACON displays.

Due to the high modularity of the software, the processing need not be performed on one station but can be performed on several stations that exchange data through the local network. Thus it is possible to locate the ATIS processor in a separate location from the operator and the meteorological office.

The E.ATIS[©] single station system may use one or more of the following depending on the application:

LAN (WAN)

Allows link with other devices, such as remote displays in the TRACON, to form an integrated distribution and display system.
Remote maintenance

DATA MODEM

Long line distribution of ATIS/VOLMET decoded messages.
Incoming data to be processed

TELEPHONE (VOICE MESSAGE)

Automatically answers incoming calls and repeats the voice message prior to disconnecting automatically.

HANDSET

Allow operators to monitor the voiced message or actually speak new voice messages to be repeated by the system.

VOICE LINE

Provides a low impedance output to drive transmitters or other voice distribution systems.

3. Operator Workstation.

The Operator workstation consists of an Intel PC platform, its associated hardware, the operating system and the application software, which provide the interface and processing to control the voice system. In addition, the workstation may contain one or more voice card to generate the spoken ATIS message.

The Operator Terminal performs the following tasks:

- Processes and displays incoming information.
- Generates and displays warning and error messages.
- Allows operator to generate, edit and approve or reject messages.
- Allows reviews of archived data and transfer to other media.
- Allows system control.



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The default ATIS display is totally customer configurable.
Figure 3.1 below illustrates a possible layout





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4. Application Software.

E.ATIS© software is highly modular and allows for easy implementation of specific customer requirements. System parameters and display screens are user programmable and sensitive functions are protected by security requirements of up to four different levels of authorization. The software is Windows compliant and all operator functions are accessible via keyboard or mouse.

Perhaps one of the most useful features is the ability to completely configure the operator display from the font size and color to the size and position of the viewing window for each individual parameter. [Appendix A](#) shows the principles involved in the customization of the screen.

The following rules control the application software

- ATIS messages are constructed in accordance with ICAO Annex 11 using data from various sources and operator input. Vocabulary and abbreviations follow ICAO PANS-ABC and ICAO Lexicon (Doc. 9294). Some data (i.e. Transition levels) may be automatically generated.
- All data is verified, whenever possible, to ensure validity.
- Messages are repeated continuously and updated whenever required by conditions or regulations. A programmable pause may be inserted between messages.
- Message updates can be either manual or automatic depending on the system configuration.
- In both the automatic or manual update mode, the system can be configured to issue an alert whenever the information is being updated or needs to be updated.
- Meteorological data is decoded and processed according to the guidelines and formats specified in ICAO Annex 3, Annex 10, Annex 11 and WMO No. 306 (FM15-IX Ext.). Custom data formats are accommodated through plugins. Syntactical or lexical errors are logged and presented to the operator for correction
- All Aerodrome parameters, such as Instrument Approaches, Runways, applicable runway conditions, are selectable by the operator from lists stored in a database. The lists can be updated by a user with the proper permission settings. Operators can also be granted permission to edit meteorological data,
- All incoming and output messages, operator logins and actions and system changes are logged in the database and available for review. Data from the database can be automatically purged after a specified period
- Message recorded in voice can be stored and used as part of the systems vocabulary.

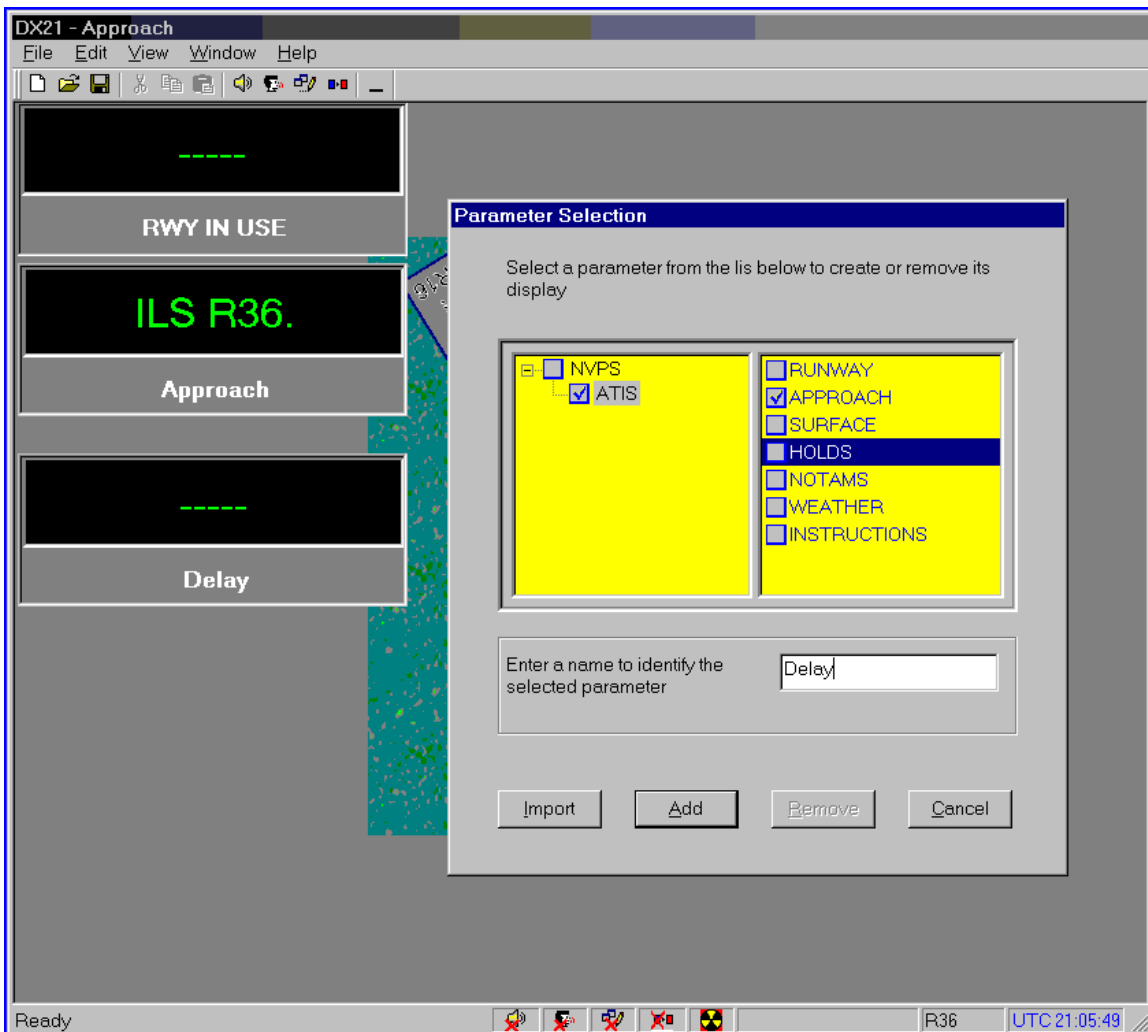
[Figure 4.1](#) illustrates the core components of the E.ATIS software. Click on the highlighted links on the drawing for more information

Appendix A

Customizing the display

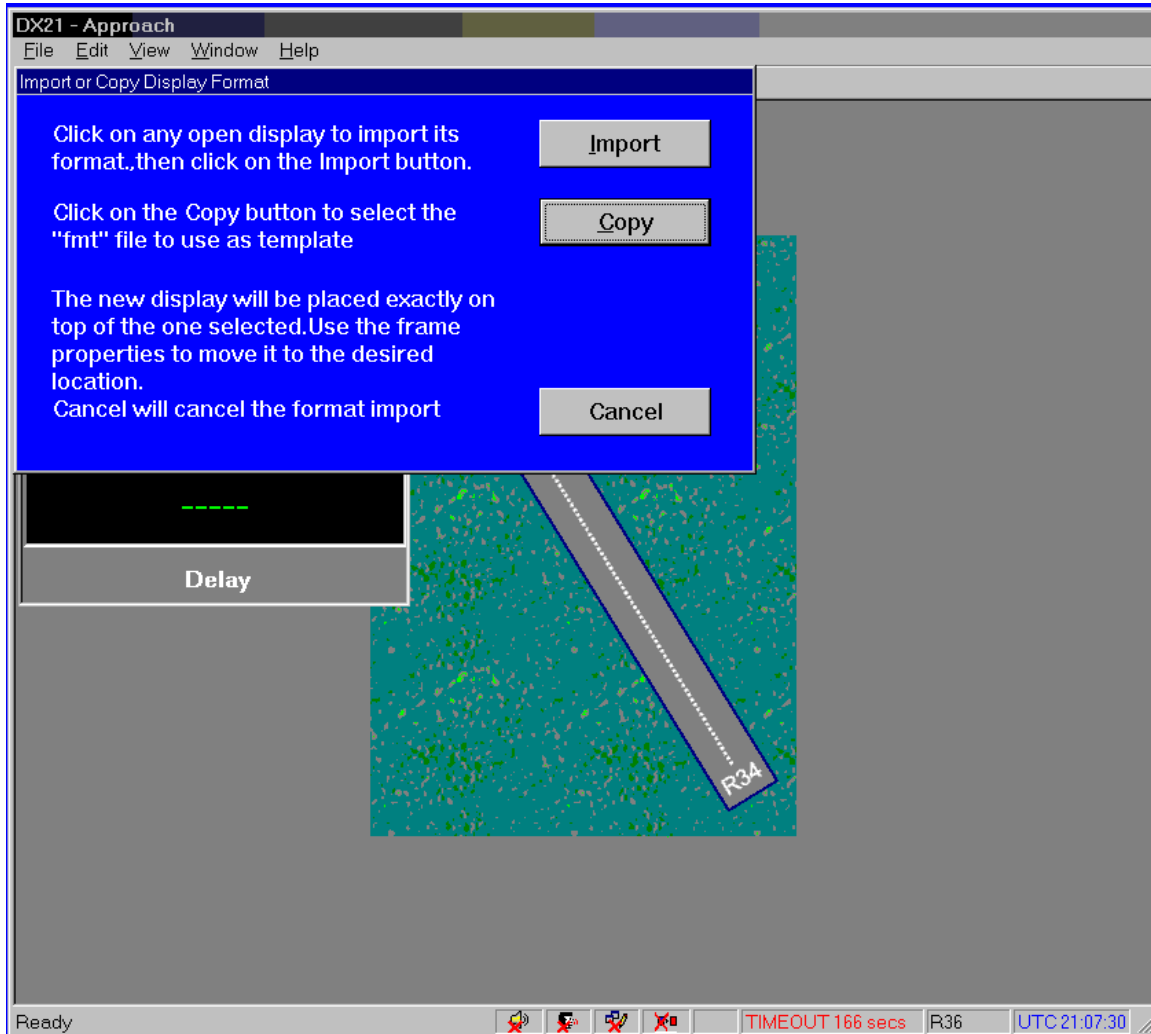
Customizing the display begins with the choice of parameters to display. Parameters are selected from the Parameter Selection Applet, which derives a list of the parameters available for the application by looking at the DTD (Document Type Definition).

Figure A.1 below illustrates the Parameter Selection Applet

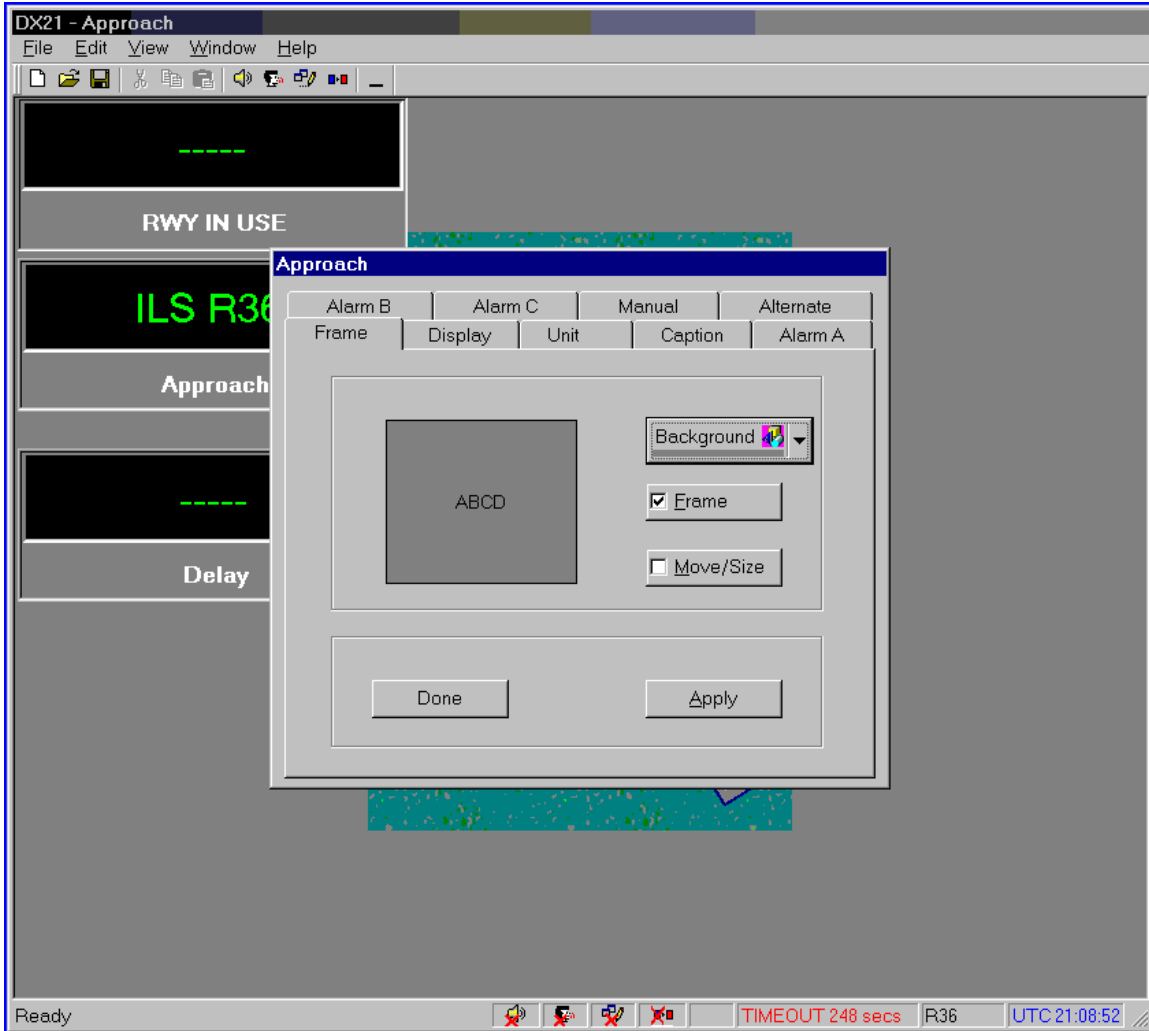


Once a parameter has been selected, a display can be created by importing it from another parameter with a similar display configuration or by using the standard template. Either way, the display can be modified further.

When selecting the "Import" option, the screen in figure A.2 below appears.



After selecting either Import or Copy, the new display appears on the frame and E.ATIS displays the configuration applet illustrated in Figure A.3 below





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The configuration applet allows customization of all the components of each individual display such as Size, Position Colors, Text, Labels including, when applicable, the assignment of programmable alarms. The ability to edit labels allows localization of the applet since labels can be entered in any supported language.

Figure A.4 illustrates the selection tab for the programmable alarm.

