

## **Mark II CMU & ATSU AOC ART Reconfiguration Tool**

### **Overview**

Honeywell's Mark II CMU and our ATSU AOC software for the Airbus ATSU are user reconfigurable datalink systems. Reconfiguration is performed by creating / modifying either a CMU Database or ATSU AOC database, and loading the database into the avionics memory via a data loader (PCMCIA media can also be used for the Mark II CMU).

The database is created using a PC based software program called ART (ACARS Reconfiguration Tool). The ART tool is sold as an optional piece of ground support equipment to airlines.



The ART program allows the user to create or change the MCDU screens that are displayed to the flight crew. This allows airlines to define the MCDU screen hierarchy and MCDU screen content to meet airline specific operation. The ART program also defines the types and contents of the datalink messages that are sent from the CMU/ATSU AOC to the Airlines facility. Dozens of other features are also able to be modified that control the operation of the CMU or ATSU. This includes such features as activating message encryption, defining service provider regions and attributes (CMU Only), activating algorithms for having messages sent atomically at specific event points in flight, and defining input data that is received from other systems.

Note: There is also a separate ART program for Honeywell's older 965-0728-xxx ACARS MU. This ART program is referred to as ART95, and is a different program than the ART program used for the Mark II CMU / ATSU.

### **Configuration Information**

The ART program is periodically updated as the AOC software for either the Mark II CMU or ATSU is enhanced. The ART tool is released under base part number 998-2663-50X.

The ART program is designed to operate on standard Microsoft operating systems and in general should operate on most commonly used PC platforms without requiring any special adaptation.

### **Features**

The reconfiguration aspect of Honeywell's CMU and ATSU AOC systems are very extensive, allowing the airlines to perform such functions as:

- Add/Delete or Modify MCDU screens
- Specify the format and functions of the MCDU screens
- Define the MCDU screen Hierarchy
- Add/Delete or Modify Downlink messages and message contents and formats
- Specify the air-ground link mediums to be used for Downlinks
- Specify the priorities of Downlinks
- Specify Downlinks as whether they should be automatically or manually generated
- Modify the geographical boundaries used to select service providers and VHF characteristics

(CMU Only)

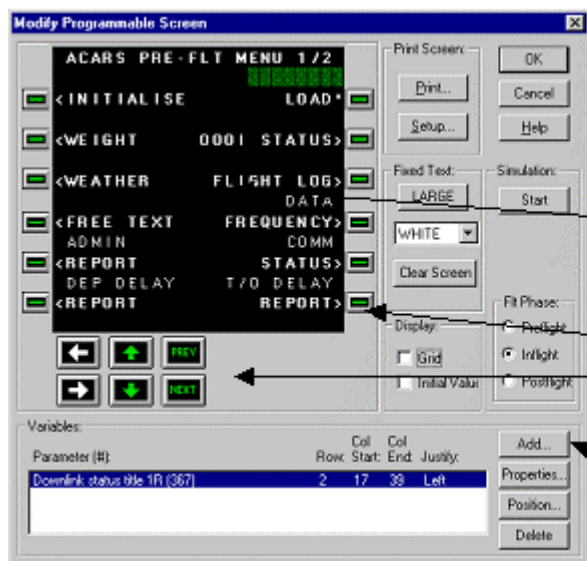
- Specify Service provider frequencies
- Specify Encryption of Downlinks and Decryption of Uplinks
- Specify various parameters and thresholds for various processing within the CMU, including trigger algorithms
- Specify customized uplink report formats for the MCDU and Printer
- Specify which CMC reports are to be Sent to the ground
- Specify mappings between 2 character and 3 character Airline Identifiers
- Specify initial and fixed values for parameters, to be used for displays on MCDU screens, printer and downlinks.
- Program which input ARINC 429 ports receive which broadcast labels
- Specify the type of printer, and default printer character attributes such as line size and character size for various reports
- Specify LRU configuration information
- Specify Special processing to be performed for Uplink messages, such as the title display on the received messages page and Action Prompts on the message display screen
- Define Password protected screens
- Define validation processing for parameter inputs by the flight crew on the MCDU
- Dozens of other features

As part of the ART system, capabilities are provided within the ART tool to:

- Specify the part number of the database (which is displayed on the appropriate MCDU Maintenance Screen and can also be sent down to the ground via a downlink message)
- Display an example of a downlink after it has been defined
- Display the reconfigurable MCDU screen images as they would appear to the flight crew
- Simulate MCDU screen changes of the reconfigurable screens
- Print reports on the database contents
- Modify multiple databases at once
- Specify Configuration control information for logging changes and reasons for change
- Provide On-Line Help
- Creating download media (to be used for loading the CMU)
- Password control for supporting limited access to ART functions

A few examples of the ART screens are shown below:

The following provides an example of the ART screen used to modify an MCDU page. This allows the user to define both fixed text and dynamic data on an MCDU screen; program the MCDU Line Select keys to perform specific functions (such as send a downlink message, display a new screen, perform a special function); as well as providing a simulate mode to traverse the screen hierarchy.



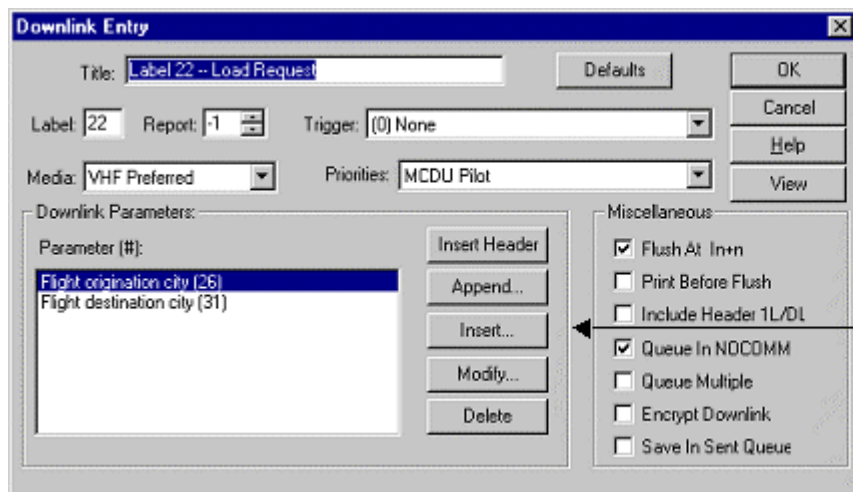
A picture of the selected MCDU screen, as well as the controls needed to edit the screen are provided in a single window.

By clicking the mouse on the MCDU screen, you can then add Text to the screen, by simply typing it in from your keyboard

Line Select Keys, arrows and prev/next keys are programmed by selecting them with the mouse.

To display parameters (dynamic data) on the MCDU screen, Select the **Add...** function.

Downlink messages are modified by selecting various options and data. This includes selecting the sub network media preference; algorithms for having a message sent automatically upon an event; selecting the data parameters desired in the body of the downlink message; and selecting a variety of other user defined options.



Example of a Load Request Downlink from a sample database. This window is used to review and modify the downlink

Select these buttons to change the contents of the downlink message