ClearVision™ i-FMS

Interactive Flight Management System

- ARINC 653 Operating System
- ARINC 661 Display Standard
- Third-Party Hardware Support
- Modular Design Allows Proprietary Add-On Applications
- Supports Head-Up, 'Fly by Sight' Operations

UA **continues to take the avionics industry forward with the latest iteration of its flagship product, the Flight Management System (FMS). Designed from the ground-up by a company with decades of Flight Management experience, the next generation ClearVision Interactive FMS (i-FMS) presents a new, software-based FMS to the market for easier management of all phases of flight – from flight planning to takeoff, approach, and landing. The i-FMS offers the latest in connectivity between Head-Up Displays (HUD) and Head-Wearable / Helmet-Mounted Displays (HWD / HMD), and the flight deck itself, allowing pilots to safely 'fly by sight.'**

Avionics. Simplified.

Featuring a software-based, flexible open-architecture system, the i-FMS can run on a variety of hardware options – from OEM supplied platforms, to commercial or paramilitary versions.

The i-FMS features a portable FMS with highly modular architecture for ready deployment to any ARINC 653 compliant platform and a separate Human-Machine Interface (HMI). Customers may run the application in many third-party options to best suit their flight deck, with no need for specific hardware or Line Replaceable Units (LRU). UA has extensive interface experience with a wide variety of sensors and third-party equipment.

The HMI, implemented with an ARINC 661 User Application, connects to the core operating system and allows the pilot to communicate with the application. With UA's state-of-the-art touch-based HMI, customers can customize their own flight deck with the hosted FMS software. Since the system is modular, customers may specify future functionalities, allowing for easy adaptation to address upcoming requirements. Support for a third-party HMI is also offered. Additionally, customers may integrate their proprietary functions by interfacing to the core operating system or by customizing menus and operational logic.

The i-FMS provides an integrated, flexible path to simplified avionics, eliminating many of the current challenges in pilot interfaces.

Features

- Advanced API support for external system integration
- Wireless interface for integration with tablet-based flight planning applications and maintenance functions
- Extended innovative algorithms for superior navigation performance
- Two alternate routes in addition to active flight plan
- 250 Waypoint flight plans to support the most complicated clearances
- Support of special mission operations, SAR patterns, Transition to Hover, and rig approaches
- Advanced performance (V-Speeds, N1 targets, required field length)

Benefits

- Simplified installation, integration, and upgrade capabilities
- Reduced weight, wiring, and power requirements
- Fuel savings
- Increased reliability
- Lower installation and maintenance costs
- Pilot-centric navigation

The Future of Flying

Designed to support the potential for augmented reality capabilities, the i-FMS is the future of flying. The i-FMS tackles one of the main challenges pilots face today with FMS operations; the need to propose changes to the FMS during critical phases of flight such as takeoff and landing.

Typically, during this time the pilot is required to shift their attention from outside the cockpit window to the FMS display unit – to reprogram the FMS and validate changes are correct – requiring last-minute updates and head-down operations. The i-FMS better supports this, allowing the pilot to project waypoints and information from the FMS onto the real-world, superimposed on a HUD, UA SkyLens™ HWD, or SkyVis™ HMD. The pilot is able to interact with these features by Line-of-Sight (head/eye tracking) and a select/deselect button on the aircraft controls, minimizing head-down operations.

With the i-FMS's more streamlined working environment; performance, safety, and efficiency are all enhanced, improving the overall pilot experience. In addition, the i-FMS provides a platform for NextGen and SESAR capabilities and mandates such as FANS 1/A+, CPDLC, and ATN B1/B2. Support of low RNP (<0.3), A-RNP, and RNP-AR operations are also afforded.

Specifications

System Architecture

The i-FMS architecture complies with ARINC Specification 653, Avionics Application Software Standard Interface, for Integrated Modular Avionics (IMA). Communication with external devices is accomplished via host hardware.

Configuration

The i-FMS supports the following installation options:

- Single FMS / Single Control Display Unit (CDU)
- Multiple FMS / Single CDU
- Multiple FMS / Dual CDU
- Multiple FMS / Triple CDU

Databases

The i-FMS supports commercial or government (DAFIF) databases.

Security

The i-FMS provides electronic cyber security protection against access by unauthorized sources internal and external to the aircraft.

Certification

The i-FMS's ARINC 653 software is developed to RTCA DO-178C, Software Considerations in Airborne Systems and Equipment Certification, and RTCA DO 200B, Standards for Processing Aeronautical Data.

- TSO C-115d, Required Navigation Performance equipment using Multi-Sensor inputs
- TSO C-146e, Stand-alone airborne navigation equipment using the Global Positioning System augmented by the Satellite-Based Augmentation System (SBAS)
- RTCA/DO-178C, Software Considerations in Airborne Systems and Equipment Certification (Design Assurance Level B)

UNIVERSAL™ AVIONICS
an Elbit Systems Company

Corporate Offices
3260 E. Universal Way
Tucson, Arizona 85756 USA
+1 520 295 2300 / 800 321 5253
Fax: +1 520 295 2395

Internet
uasc.com
E-mail: info@uasc.com