

Utilities Management System



**Innovative
Solutions & Support**

Utilities Management System (UMS)

Technical Overview

The IS&S Utilities Management System (UMS) is an open architecture modular system for use in part 23/25 aircraft and helicopter platforms. The UMS monitors aircraft sensors, controls aircraft systems and is scalable to meet the requirements of any aircraft. This allows the aircraft manufacturer configuration capabilities through table based configuration files supporting parameter modifications and simple control algorithms that eliminate the need for costly software updates and recertification efforts.

The UMS acts as the aircraft central maintenance computer allowing for a maximum of six (6) units to be included in the communication ring. The system provides a significant power and weight saving over the use of federated boxes and utilizes the latest IS&S technological advancements in avionics circuit design.

Provides Control and Monitoring of Aircraft Functions such as:



- Autoflight
- Autoland
- Autotrim
- Primary Flight Controls
- Secondary Flight Controls
- Autothrottle Controls
- Powerplant
- Fuel System
- Landing Gear
- Flap
- Slats
- Wheel Brake System
- Nose Wheel Steering
- Lighting
- Oxygen and Pressurization System
- Cabin Systems Integration
- Health and Trend Reporting
- Probe Heating
- Avionics Suite Integration
- Cockpit Controls & Indicators
- Environmental Control System
- Bleed Air System
- Electrical Power System
- Fire Protection System
- Ice/Rain Protection
- Windshield Heating
- Probe Heating
- Central Maintenance
- General Airframe
- Data Concentration and Analysis
- Crew Alert and Warning Computations

The UMS reduces the need for costly interface and distribution boxes and consolidates the various aircraft sensors allowing for centralized processing. It significantly reduces the wiring requirements due to the distributed location of the UMS. It also significantly reduces the weight associated with the installations of the standard support equipment and wiring. The UMS meets the most stringent environmental conditions and can be mounted in pressurized or non-pressurized aircraft locations.

Each UMS contains internal mass-storage capability allowing for data recording and subsequent data analysis of critical or non-critical flight parameters. The mass storage uses solid-state-memory through a high-speed SATA interface supporting data recording rates. The non-volatile solid state memory size is 64 gigabytes with the option for the addition of a secondary data storage drive. The UMS system is centrally data-loadable through a standard Ethernet interface. The same interface is used for data retrieval from the UMS.

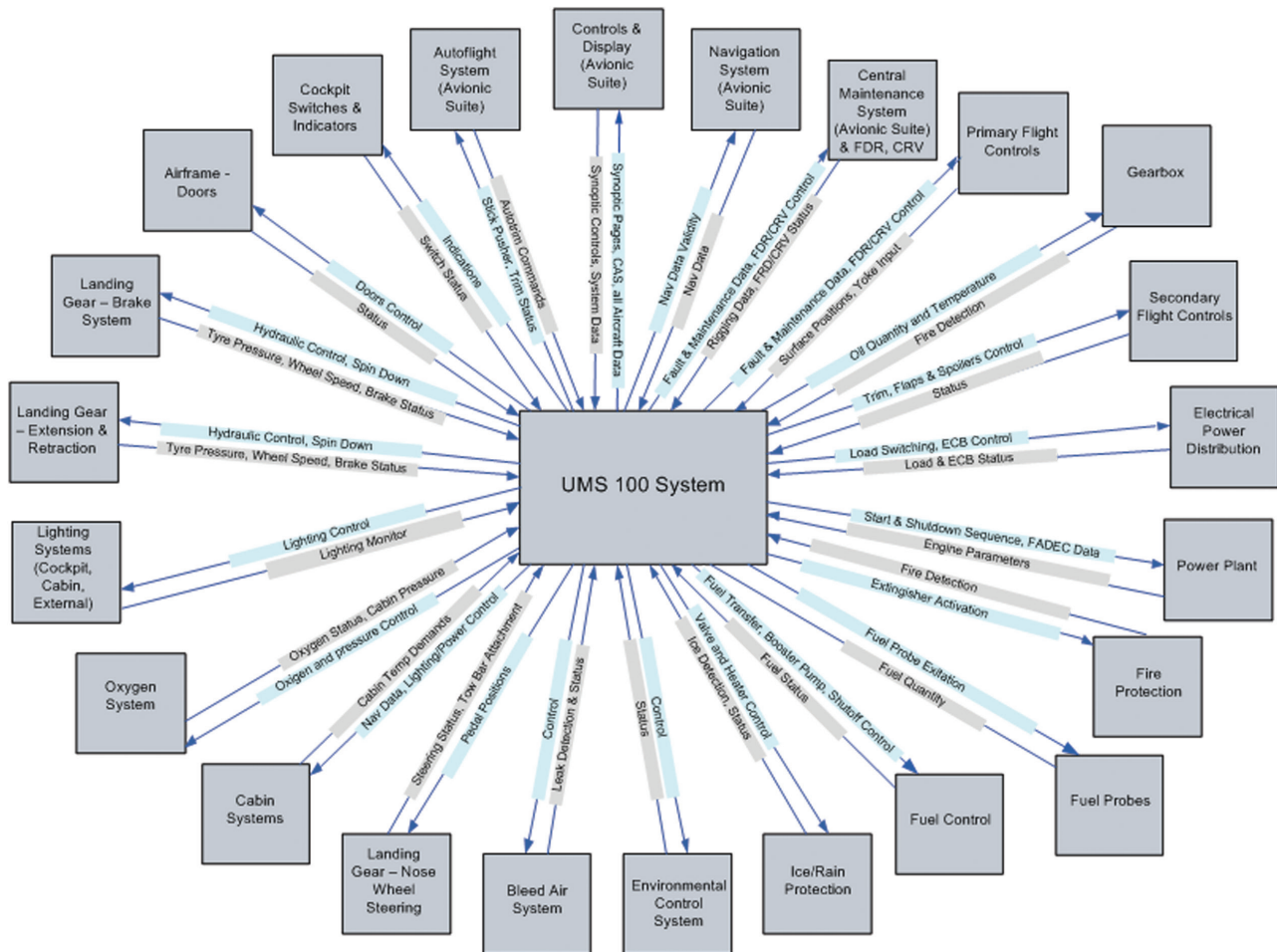
Features:

- Controls 20+ Independent Federated Systems
- Versatile unit that monitors aircraft sensors and controls aircraft actuators
- Allows OEM to configure and program specific applications

Benefits:

- Weight Savings
- Reduced Power Consumption
- Less Wire Clutter
- Improved Redundancy

Examples of UMS Inputs and Outputs:

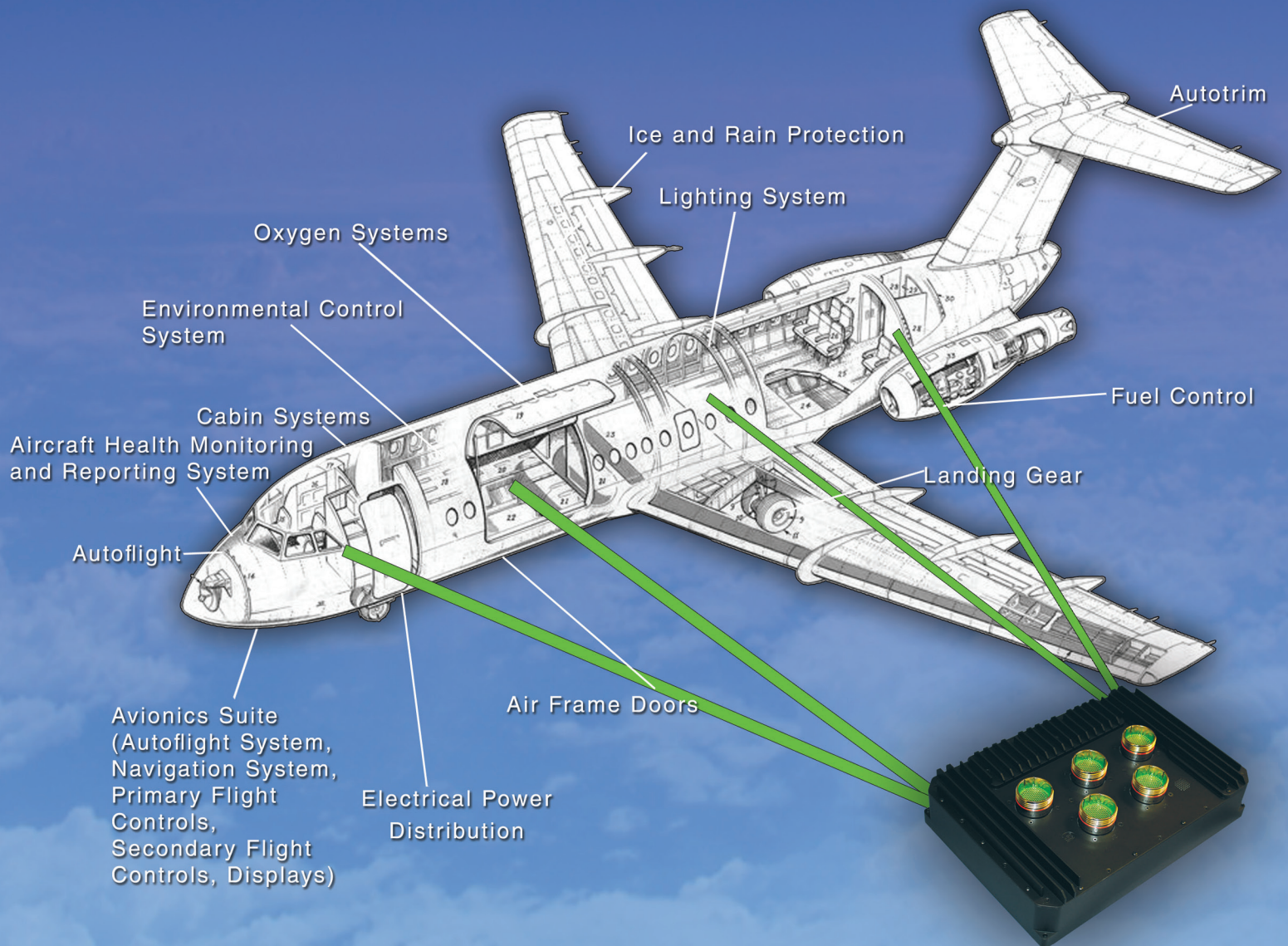


The UMS Provides Configurable Control for the Following I/O Signals:

- Discrete Inputs (Gnd/Open, 28V/
Open, Tristate, Configurable)
- Discrete Outputs (Gnd/Open, 28V/
Open, Tristate, high power)
- Switched Input Signals
- Switched Power Inputs
- Thermocouple Inputs
- Multi-Purpose Inputs
- RVDT/LVDT Inputs
- Differential Voltage Inputs
- Analog Inputs
- Capacitor Input
- Constant Current Outputs
- Analog Programmable Reference Outputs
- H-Bridge Outputs
- Excitation Outputs
- ARINC 429 Input
- ARINC 429 Output
- RS-485
- RS-422
- CAN-bus
- Ethernet

The criticality of the UMS supports Level A design assurance for both hardware and software in support of aircraft controls with catastrophic failure category. Software is fully compliant with guidelines of DO-178B and in compliance with the latest EASA SW memo. The UMS also meets the latest DO-254 guidance in compliance with the latest EASA HW memo.

Rethink the way you design aircraft systems



Data Sheet and all information contained in it is proprietary to Innovative Solutions & Support, Inc.
All specifications subject to change without notice from the manufacturer.



**Innovative
Solutions & Support**

720 Pennsylvania Drive
Exton, PA 19341 USA
+1 610 646 9800
www.innovative-ss.com