AIRCRAFT AND MISSION MANAGEMENT SYSTEM

The AMMS is a powerful computing system designed to provide processing features to rotary wing aircraft, including Navigation & Flight Management, Cockpit Display Management and Aircraft Plants Management.

The System is composed of:
- Two AMMCs Units (the Computer Core)
- Two Data Transfer Units
- A Control Panel.

The AMMS provides the capabilities to acquire, process and manage information and aircraft plant data from EFIS/EICAS, relevant CNI equipment and AFCS, in a reliable, high performance environment.

It is based upon a core consisting of two identical computers (AMMC, Aircraft and Mission Management Computers), synchronised and concurrently performing the same operations in a master/hot-standby architecture, which allows, in case of failure of the Master, a totally automatic reconfiguration for the all system functionalities, therefore resulting in an high mission availability.

Key Features
- Redundant LRI configuration
- PowerPC G4 MCS-E 500Mhz processor
- Easy addition of additional processor module and I/O
- I/O configuration for different aircraft
- COTS RTOS based on I-178B by Green Hills
- Dedicated equipment software and ADA development environment for application
- Digital maps: symbol generation & vectorial layers
- Synthetic voice generator
- Redundant MIL-STD 1553B I/F operates as BC/BM/RT
- High communication throughput
  - Ethernet 10/100 baseT
  - MIL-STD-1553b
  - ARINC 429
  - ARINC 739
  - RS485 HDLC)
- AFDX Copper/Optical I/F compliant with ARINC664
- High data storage capability (up to 8GB)
- Civil specification compliance
  - RTCA/DO-160D
  - RTCA/DO-254
  - RTCA/DO178B.

AMMS

The AMSS in the Mission Management System for the AgustaWestland EH101 helicopter

FUNCTIONALITY

Flight Management System (FMS)
- Area Navigation Management
- Tactical Patterns Management
- Navigation Database Management
- Navigation Display data management
- Helicopter and Navigation Performance computation
- Horizontal and Vertical Steering commands generation for AFCS.

Data Control and Equipment Management/Preset
- Mission Equipment
- Communication/Identification Equipment
- Navigation Sensors.

Aircraft Systems Interfacing, Data Acquisition, Status monitoring and Alert generation
- Engines - Rotors and Transmission - Hydraulics - Electrical - Fuel.

Helicopter plants Health and Usage Monitoring and Maintenance (HUMS)
- Vibration signal acquisition and processing for Transmission Monitoring
- Engines Health and Usage Monitoring
- Structural Usage Monitoring.

Display Management for EICAS and Navigation information

Digital Map and Symbol Generation for tactical symbol capability
- Helicopter Data Upload/Download
- Navigation and COMMS Data
- Map and Mission Data
- HUMS Data
- Maintenance Data.

TECHNICAL SPECIFICATION

- AMMC is a 1 ATR size housing, with integrated power supply and up to 13 MCS standard boards.
- Processor G4 MCS-E Power PC 500 MHz, 256MB RAM, 96MB Flash, 2MB cache, with a 2MB NOVRAM.
- Synthetic Voice Generator
- Digital Map Generator: G4 MCS-E with graphic mezzanine for map generation functionality.

Interfaces
- 2 MIL-STD-1553 BUS I/F BC/BM/RT
- 20 TX ARINC 429 and 34 RX ARINC 429 channels
- 4 TX and 4 RX ARINC 429 Non-Time-Framed channels
- 250 Discrete Input Signals
- 17 Discrete Output Signals
- 6 AC Analogue High Level
- 54 DC Analogue Input
- 17 Accelerometers sensors
- Magnetic Pick-Up
- STANAG 3350 RGB Video output
- Synthetic Voice Generator.

Technical Features (AMMC)
- Size: 1 ATR Short
- Weight: 15.2Kg (bi-processor)
- Power requirements: 115VAC @ 400Hz
- Power consumption: 180W
- Cooling: Forced air cooling (ARINC 600)
- MTBF: 2500 operating hours.

LEONARDO
AIRBORNE & SPACE SYSTEMS

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