Avionics

TACTICAL DIGITAL MAP SYSTEM

Operational capability enhancement is a requirement forced by the evolution of the operational scenario. This is common to many 'aged' fixed and rotary wing aircraft that are requested to accomplish new mission objectives without having the adequate capabilities.

Although operational capability enhancement involves the entire aircraft, avionics plays a major role in the modern operational scenario which is dominated by the coordination and sharing of information among participating forces.

The Tactical Digital Map System (T-DMS) has been developed to introduce, as an upgrade, state-of-the-art operational capabilities for 'aged' fixed wing avionics systems.

SYSTEM DESCRIPTION

The T-DMS is:

- Largely derived from products already in use on well proven helicopter platforms
- Suitable for a wide range of applications and competitive, either as a simple cost-effective add-on, or as the core of a major avionics upgrade
- Compatible with the unique features of each aircraft, its avionics/mission configuration and its operational role, key for the optimal enhancement of its operational capabilities
- Not limited to just a set of black boxes, but consists of a comprehensive package, including all of the necessary elements required to introduce and bring the operational capability enhancement into operative service.

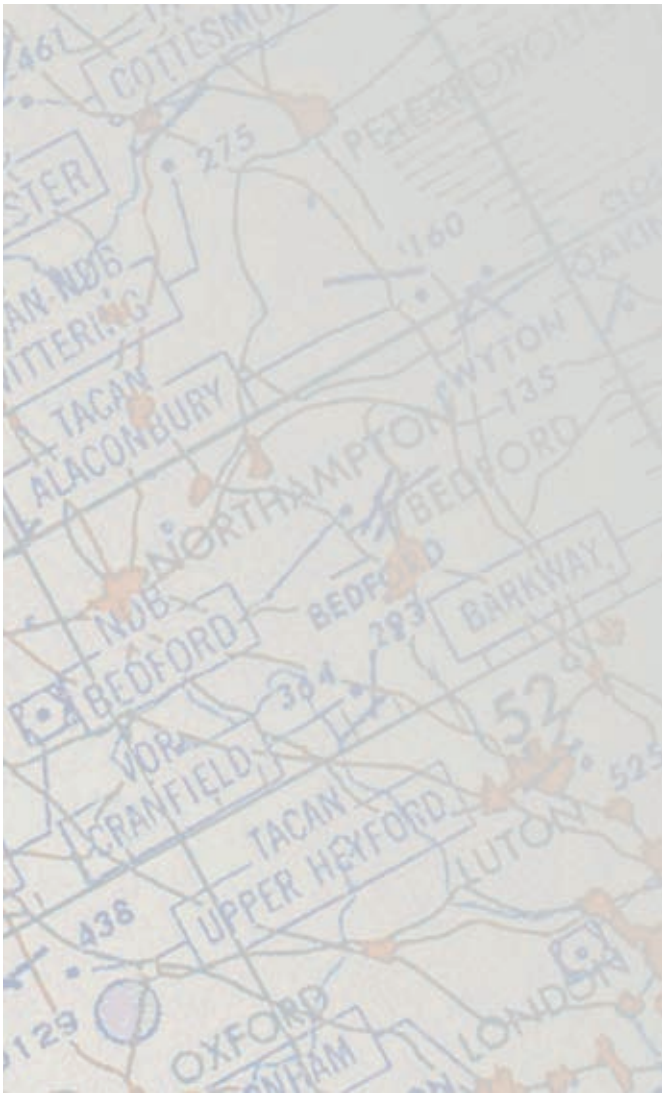
T-DMS

SYSTEM DESCRIPTION

The T-DMS is composed by an On-Board Sub System (OBSS) and a Ground Support System (GSS).

On Board Sub Sytem
The OBSS is composed by:

- MCSG (Mission Computer Symbol Generator) directly derived from the basic mission computer configuration.
  It includes a combination of HW & SW modules providing the following capabilities:
- Data processor (based on Power PC processor)
- Digital I/F (ARINC 429, MIL STD 1553, Serial Links)
- Raster symbol generator
- Digital map generator
- Video multiplexing and mixing
- Analogue and discrete input/output signal sampling and fast acquisition
- HDDUE-S (Head-Down Display Unit Enhanced Short) and a multifunctional AMLCD 5"x 5" Display, providing high performance with a full colour capability in all conditions from full sunlight to NVG operations
- Control and Display Units (CDUs), as required by the specific application
- DTU (Data Transfer Unit) that provides the mass memory storage capability (by means of the removable data cartridge) for the on-board downloading of the map database and navigation / mission database
- DC (Data Cartridge) that can be pre-loaded by GSS tools.



Ground Support System
The GSS is composed by:

- A COTS workstation for map data base preparation
- A COTS workstation for tactical data base preparation
- A Special To-type Test Equipment (STTE).

The GSS provides a user friendly tool for:

- Creation and editing of the navigation/mission database including the database for the removable DC;
- Creation and/or modification of the digital map database including the database for the removable DC.

In addition the GSS provides a STTE which allows a fast Go - No Go test of the OBSS equipment set.

BASIC FUNCTIONAL CAPABILITIES

The T-DMS-OBSS is integrated with the on-board Doppler/GPS* navigation system, radar altimeter and baro altimeter provides:

- Awareness of its own A/C position with respect to the geographical and tactical scenario via an embedded advanced digital map generator
- Terrain avoidance and terrain masking functions for tactical flight via the digital map generator
- Advanced HMI functions for:
- Extended navigation database management
- Presentation and interactive editing of flight plans and functional interface with the FMS (part of the Doppler/ GPS Navigation system)
- Display of video generated by on-board sensors (i.e. FLIR, Radar...) according to the standard STANAG 3350 A,B or C.

** Where GPS is not available on board, then OBSS can be provided with embedded GPS.*

OPTIONS & GROWTH CAPABILITIES

The T-DMS-On Board Sub System can be enhanced with:

- Additional HDDUE-S display on cockpit or cabin stations (depending on specific helicopter platform installation constraints)
- Use of a 6"x 8" AMLCD landscape display instead of the standard 5"x 5" display

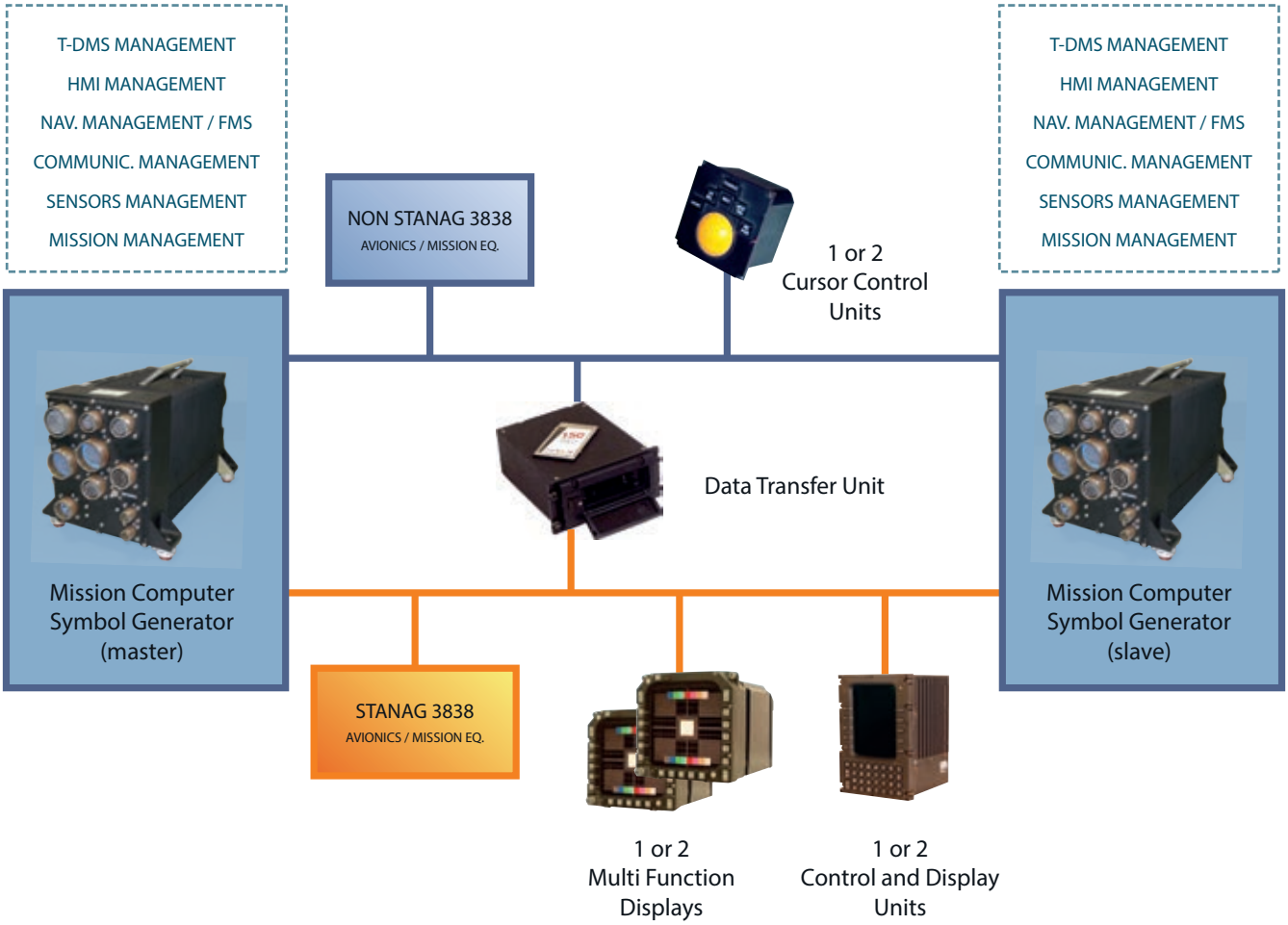
In this latter case an additional 6"x 8" AMLCD landscape display can also be provided for the cockpit or cabin stations (depending on helicopter platform installation constraints).

The standard T-DMS OBSS already provides HW and SW resources (e.g. interfaces, memory and processing power) which allows development for:

- Management of the radar data (e.g. synthetic presentation of radar tracks as part of a tactical situation display presentation)
- Management of FLIR (e.g. LOS control, target acquisition, SAR search patterns)
- Management of the self-protection system (synthetic presentation of the threats as part of a tactical situation display presentation)
- Management and integration of MIDS low volume terminal (Link 16)
- Control and integration of the CNI CDU (e.g. to provide integrated communications management).

T-DMS

The development capabilities are related to the specific platform and the relevant avionics system configuration, and can be tailored to meet specific user needs.



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