

# OCEP SYSTEM

## Operational Capability Enhancement Package



Fast, deep, undetected



SELEX GALILEO

DRAFT

# OCEP SYSTEM

## Operational Capability Enhancement Package



For more information please email [sales.marketing@selexgalileo.com](mailto:sales.marketing@selexgalileo.com)

SELEX Galileo S.p.A. - A Finmeccanica Company  
Via A. Einstein, 35 - 50013 Campi Bisenzio (FI) - Italy

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## OPERATIONAL CAPABILITY ENHANCEMENT PACKAGE

Operational capability enhancement is a need, forced by the evolution of the operational scenario, which is common to many "aged" fix and rotary wing aircraft which are requested to accomplish new mission objectives, without having adequate capabilities.

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

The OCEP system has been developed by SELEX Galileo to introduce, as an upgrade, the "state of the art" operational capabilities on "aged" helicopter avionics systems.

### SYSTEM DESCRIPTION

The OCEP system is:

- Largely derived from products already in use on well proven helicopter platforms;
- Suitable for a wide range of applications, and competitive, either as 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, for which unique is also the optimal tradeoff for the enhancement of its operational capabilities;
- Not limited to just a set of "black boxes", but consisting of a comprehensive package, including all what is necessary to introduce and bring into operative service the required operational capability enhancement.



### SYSTEM COMPOSITION

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

#### On Board SubSystem

The OBSS is composed by:

- MMSG (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) a multifunctional AMLCD 5"x 5" Display. It is a 5 inches by 5 inches high performance AMLCD with full colour capability under 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 data base and navigation / mission data base.
- DC (Data Cartridge) that can be pre loaded by GSS tools.

#### Ground Support System

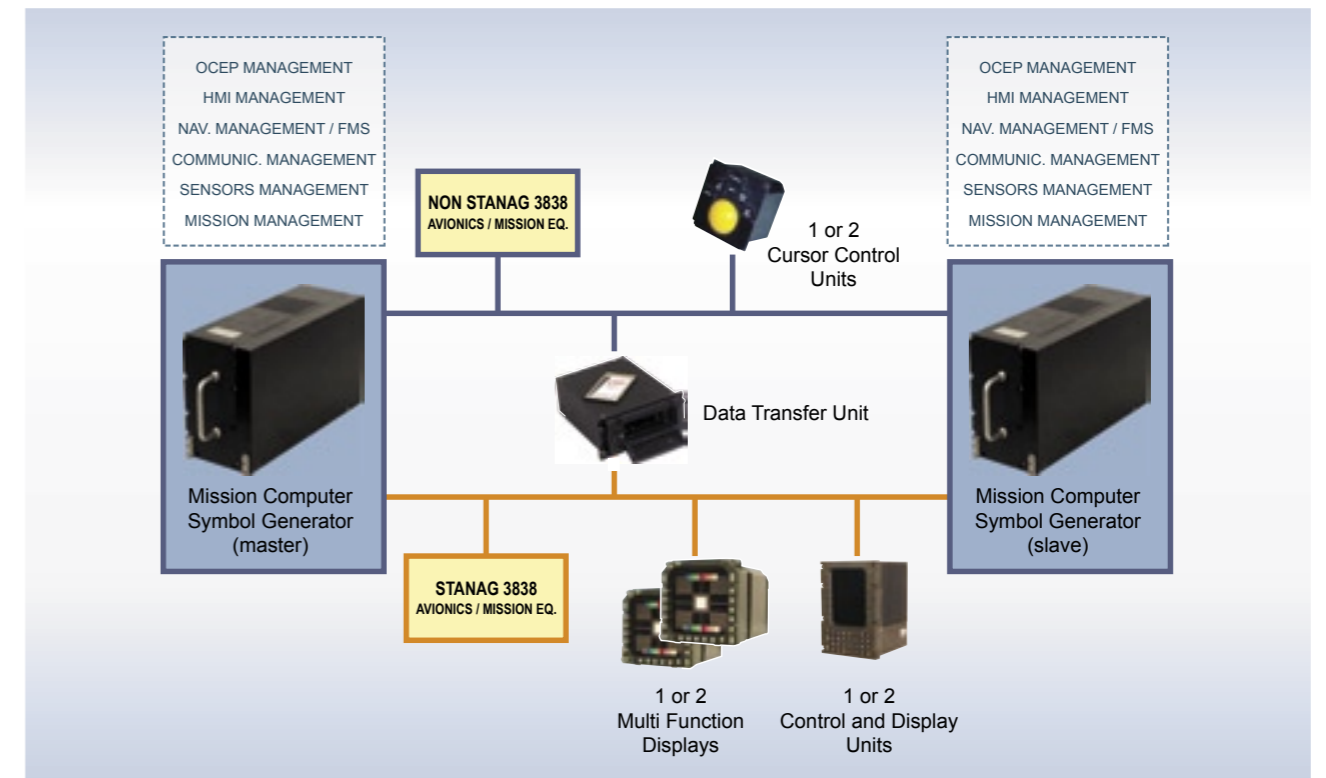
The GSS is composed by:

- 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's friendly tool for:

- creation and editing of the Navigation/Mission data base including the data base to be loaded in the removable DC;
- creation and/or modification of the Digital Map data base including the data base to be loaded in the removable DC.

In addition, the GSS provides a STTE which allows a fast Go-NoGo test of the OBSS equipment set.



### BASIC FUNCTIONAL CAPABILITIES

The OCEP-OBSS, integrated with on-board Doppler/GPS\* navigation system, radar altimeter, baro altimeter provides:

- Awareness of own A/C position with respect to the geographical and tactical scenario by means of an embedded advanced digital map generator;
- Terrain avoidance and terrain masking functions for tactical flight by means of 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 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 OCEP-On Board SubSystem can be enhanced with:

- Additional HDDUE-S display on cockpit or cabin stations (depending by helicopter platform installation constraint).
  - Use of a 6"x 8" AMLCD landscape display instead of the basic 5"x 5".
- In this latter case an additional 6"x 8" AMLCD landscape display can be also provided at the cockpit or cabin stations (depending on helicopter platform installation constraints).

The "Basic" OCEP OBSS already provides HW and SW resources (e.g. interfaces, memory and processing power) which allow growths such as:

- 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 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).

Growth capabilities are related to the specific platform and the relevant avionics system configuration, and can be tailored to meet specific User needs.

