



COLIBRI - LIGHT ANTI-AIRCRAFT FIRE CONTROL SYSTEM

The reduction in military budgets in recent years has called for the need to maintain the existing assets in service, whereas modern threats require the upgrading of weapon performances at a cost far lower than new systems.

For this purpose SELEX Galileo, a leading European Company in optronic Fire Control Systems (FCS) and manufacturer of command and control systems for anti-aircraft guns, has designed a family of FCSs which makes retrofit operations highly cost-effective.

All of these FCSs have been designed in a modular way to enable simple adaptation to a wide range of guns:

- Towed guns, new or retrofit
- Light turrets for armoured vehicles
- Upgrade of in-service light calibre AA Guns
- Missile launchers.

KEY FEATURES

The open architecture of these systems allows the highest potential growth for the equipment including:

- Battlefield Management System (BMS) integration
- Image representation on display, in either day and night views, in addition to standard text messages/ indicators
- Specific SW modules (such as Symbol Generator-SG) can be added to create a full graphic overlay, inserting the image data and information originating from the BMS
- Gunner capability and station duplication can be extended to the Commander in a two man turret (tank application)
- Extended ballistic computations, including corrections provided from meteo sensors (such as air temperature, external pressure and wind).

Description

COLIBRI is an electro-optical FCS capable of engaging targets in all-weather conditions; it represents a cost-effective solution against low-level attacking aircraft and ground tactical objectives.

The FCS consists of the following units:

- Sensor head
- Console with monitor and command panel
- Back-up reflex sight.

The sensor head integrates the following modules:

- InfraRed (IR) camera
- TV CCD camera
- Eye-Safe Laser Range Finder
- FCS management computer, capable of performing cinematic and ballistic computation and video tracking; such capabilities are integrated in the same housing of the IR camera.

The IR and TV CCD channels together are capable of granting “all-weather” and back-up capabilities. When having to detect or engage the target the operator can select the best type of vision according to the environmental conditions, both with air and ground targets.

The tracker function integrated into the COLIBRI FCS operates in both types of vision (IR and TV CCD).

The presence of these two types of vision, besides granting excellent back up capabilities, is essential when operating in specific environmental conditions.

Features inside ERICA

The signal processing is performed by an integrated Digital Signal Processor (DSP) on the Versatile Control Processor (VCP) board. The DSP processes the image signals before the TV analogue conversion, with the maximum internal signal dynamic range.

ERICA is controlled by an operator panel connected through an RS422 serial line or CAN bus.

The VCP board includes standard image processing such as: automatic gain and brightness control, graphics, image processing (2.4x zoom) and BITE. It also includes the tracking function available for the IR image as well as for a day TV image supplied by the TV camera.

The VCP can be programmed for the control of the following operations: computation of ballistic and cinematic lead angles, control of external devices as a Laser Range Finder, CCD camera and interface of motor drivers.

TECHNICAL CHARACTERISTICS

Thermal Imager

Spectral Band	3-5 μm
Detector	3 rd GenMWIR Staring Focal Plane Array
Video Output	CCIR-625 lines / 50 Hz
Field Of View (FOV)	8°x6° or 10°x7.5° ; E-Zoom
Narrow FOV	Available as an option

TV Camera

Spectral Band	480-650 nm B/W
Resolution	768 x 576 pixels
Dynamic Range	100 to 100000 Lux
Output	TV standard
FOV	8°x6° or 10°x7.5°; E-Zoom (15°-1.5° optical zoom – optional)

Laser Range Finder

Wavelength	1.57 μm (eye-safe)
Pulse Rate	3Hz / 5Hz burst
Cooling System	Air
Processing Range	200 m to 10000 m
TX Beam Divergence	2mrad
RX FOV	3 /4.5 mrad

Optical Sight

Size (L x H x W mm):	410 x 190 x 325
Weight (std) approx:	20 kg



ERICA Infrared camera