



SAAB

ADVANCED, LIGHT-WEIGHT, LOW-COST **HEAD-UP** **DISPLAY** SYSTEM





A NEW GENERATION **HEAD-UP DISPLAY**

RIGS, Saab's new generation HUD for business aircraft and helicopters, is a multi function system optimised to give operators a cost-effective display/EVS solution.

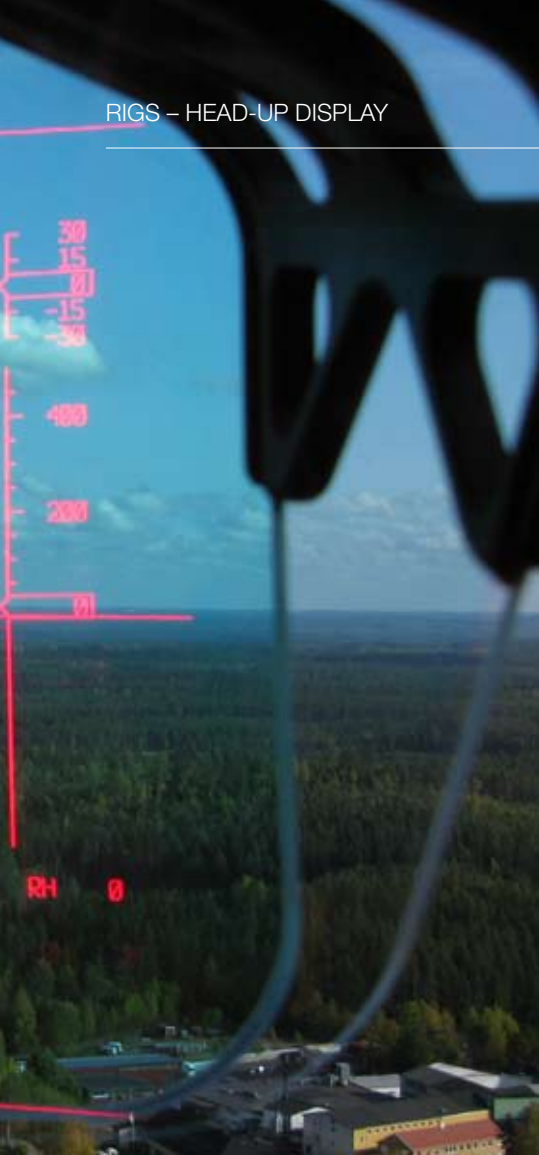
RIGS provides an electro-optical presentation system (head up display), which is used for presentation of navigation, attitude, flight, reticle and video (EVS/SVS) information to the aircraft or helicopter crew by day, night and in adverse weather conditions.

Today's new generation Enhanced Vision Sensor (EVS) technology connected to RIGS, enables pilots to see through darkness, smog, smoke and various levels of snow, rain and fog. Safety is therefore enhanced via early detection of runway incursions and improved awareness of terrain during night and day operations and to prevent controlled flight into terrain (CFIT).

The RIGS development benefits from the experience accumulated from over 100,000 flight hours operating Saab's present HUD configurations in different aircraft programs.

RIGS open system architecture allows fast integration into new or upgraded platforms. RIGS can be installed as a stand-alone system or integrated with the avionics system. RIGS can accept standard video formats.

RIGS represents a compact HUD solution that can be integrated in platforms earlier excluded from the use of HUD.



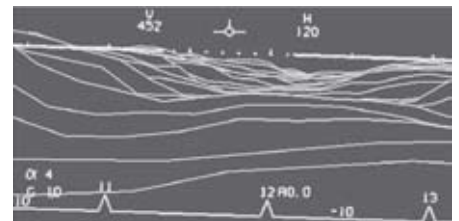
UNIQUE FEATURES OF RIGS

- Very low weight
- Compact, one single unit and single installation point
- All solid state technology, no lamps or CRT
- High resolution of 1400 x 1050, which gives 2.5 pixel per mRad
- NVG compatibility with no limitations in Class C goggles
- Can accept most video formats
- Excellent pixel quality giving crisp and clear easy-to-view images and symbols
- RIGS can be provided with either green or red symbols
- Intuitive and easy to understand symbol concept
- Large field of view and large exit pupil to facilitate comfortable use
- Fixed or foldable installation
- Modular design

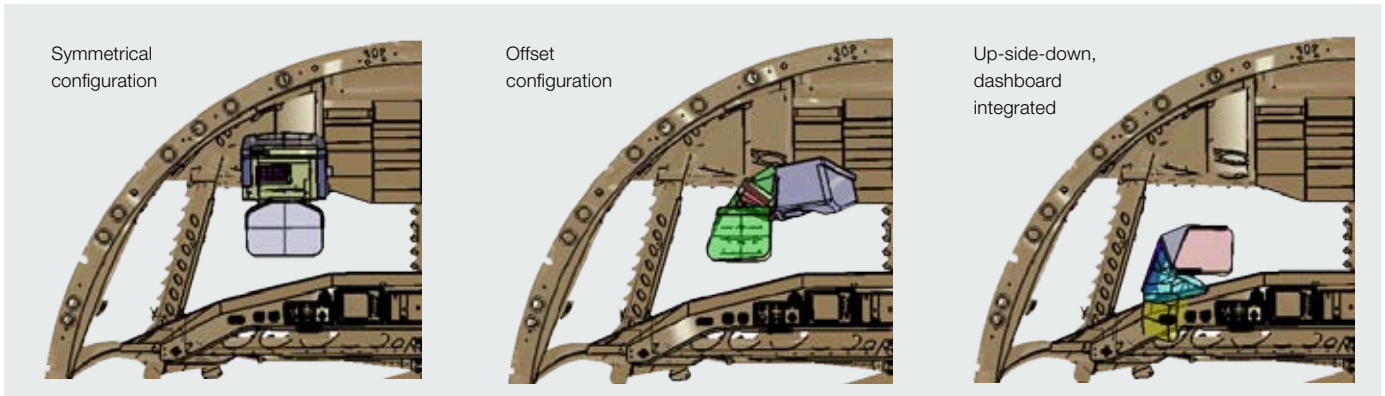
RIGS is protected by two patents and one patent pending



Enhanced Vision System, EVS



The high resolution built into RIGS makes new technologies such as synthetic terrain presentations possible with even higher fidelity



Installation configuration examples

TECHNICAL DATA

FOV

30° horizontal, 22.5° vertical

Focus

Infinity

Transmission

> 75 %

Weight

Display Unit 6.5 kg, Electronics Unit 5.5 kg

Power

24 to 32 VDC

Temperature ranges

-20° to +55° Operating
-40° to +80° Non Operating

Communication interfaces

ARINC 429 (in and out)
RS422
Ethernet
Video input SMPTE 170M
Discrete



Green display version

Functions

- Flight data presentation.
- Landing presentation (with skyway presentation or flight director bars).
- Enhanced Vision System - EVS (external FLIR or other image sensor).
- Compatible with Night Vision Devices
- Reticle and GRM.

Symbol colour considerations

Green symbols would be recommended for commercial fixed wing aircraft use, while red symbols are better adapted to the situation in military helicopters.

Green version:

- Human eyes have the best sensitivity in green.
- Traditionally all HUD systems have used green due to the phosphor in CRT displays used to achieve necessary brightness.
- NVG capability when using green is achieved in the same way as for a traditional HUD system: NVIS class C equipment is used.

Red version:

- Red has proven best for helicopter air-to-ground sighting testing relative to the cluttered ground/sky background.
- Red is a colour at the end of visible spectra implying improved photopic transmittance in the combiner.
- NVG capability with red color is achieved with a change of wavelength during NVG mode, and NVIS class B equipment is to be used.

Environmental characteristics and testing references

Operating temperature (low/high)	-45°C/ +70°C, DO-160F Section 4 Category B2
Ground survival temperature (low/high)	-55°C/ +85°C, DO-160F Section 4 Category B2
Altitude	25 000 ft, DO-160F Section 4 Category B2
Temperature variation	5°C/min, DO-160F Section 5 Category B
Humidity	DO-160F Section 6 Category B
Operational shock	6g in all directions, DO-160F Section 7 Category B
Crash safety	20g in all directions (a/c type 5, test type R), DO-160F Section 7 Category B
Operational vibration	DO-160F Section 8 Category U Curve G
Vibration during transport	MIL-STD-810F Method 514.4 Category 1

For more about the following requirements and testing methods please contact Saab: Explosive atmosphere Waterproofness, Fire/Flammability, Sand and dust, Fungus resistance, Salt fog, Power input, Magnetic effect, Voltage spike Audio frequency conducted susceptibility, power inputs, Induced signal susceptibility, Radio frequency susceptibility, Emission of radio frequency energy, Electrostatic discharge (ESD) susceptibility and Lightning induced transient susceptibility.

Specifications subject to change without notice