SPS-H INTEGRATED SELF-PROTECTION SYSTEM FOR HELICOPTERS
SPS-H is a complete system offer to provide helicopters with dependable self-protection:

- because combat, peace keeping and tactical mission occur in a great variety of hostile or unknown environments,
- because widely spread Surface-to-Air Missiles (SAM) are the major threat.

A dedicated self-protection system is essential for survivability of helicopters:

the system ensures early detection of threats and provides the crew with full EW situation awareness, to avoid hostile weapons sites.

**SPS-H: a robust system approach**

**Individual assets integrated through high-speed digital links:**
- maximum flexibility,
- faster reaction-time,
- minimum interface with other avionics equipment,
- back-up modes (individual assets can still operate independently).

**Programmable central computer for complete EW system management:**
- threat data fusion (radar, missile and possibly laser),
- smart link to countermeasures (automatic, semi-automatic and manual modes),
- security and reflex decoy ejection available,
- electromagnetic compatibility functions,
- full capability for interfacing with a multiplex bus (ARINC or RS links, 1553B...).

**User self-sufficiency for software control:**
- Operational Flight Program (OFP) clearly separated from the threat library,
- quick reprogramming of mission threat library,
- software documentation and support tools.

**Easy maintenance:**
- high reliability and full Built-In-Test (BIT),
- integrated maintenance policy,
- low Life-Cycle Cost (LCC).
Acting as a “switch-on and forget system”, the SPS-H V1 requires no crew action thus reducing its stress and workload. Operating in all adverse conditions, the SPS-H V1 features an extremely low false alarm rate and has demonstrated high-level performance through extensive tests, showing its ability to perform overall self-protection against missiles.

**PRINCIPLES OF OPERATION**

- **Missile Approach Warning**: Missiles fired at the aircraft are detected and tracked in real time.
- **System Management**: Missile flight data are used to launch decoys at the most suitable time.
- **Chaff & Flare Dispensing**: Decoying is initiated at the most suitable time, either automatically or after validation by the crew.

### MWS-20 H Missile Approach Warner

Several types of Chaff & Flare Dispensers can be integrated upon customer’s choice.
SPS-H V2 is a comprehensive system to provide enhanced EW situational awareness and self-protection. The SPS-H V2 is a complete turnkey solution to protect helicopter against both active and passive threats in modern warfare environment. In all operating conditions, threat is detected, tracked and countered using minimum chaff and flare load. Full EW situational awareness is provided by the SPS processing which combines the data issued from the various sensors.

Core system:
- SPS system processing.
- TDS-H Radar Warning Receiver.
- Chaff & Flares Dispensers.

Optional equipment:
- Various types of Laser Warning Receivers.
- Interface for optional Infra-Red and/or Radio-Frequency Jammer.

Protecting the helicopter and providing situational awareness
**PRINCIPLES OF OPERATION**

**Navigation and Weapon System**

**Self-Protection System Management**

**Assessment of the tactical situation**

- **Missile Approach Warning**
- **Radar Warning**
- **Laser Warning** (optional)
- **Chaff & flare dispensing**
- **Jammer** (optional)

### Detection and identification of emitters and missile approach warning:
- Emitters in the environment are detected and identified.
- Missiles fired at the aircraft are detected and tracked in real-time.

### Data fusion and EW situation assessment:
- Parameters relevant to the missile approach data (including speed and Time-To-Impact) are correlated with those related to detected emitters and compared to the EW system library data.
- The complete situation (including identification, status and lethality of the various threats) is presented to the pilot and crew.

### A complete EW situation assessment:
- EW system dedicated display unit (night vision goggle compatible).
- Audio warning issued to the crew via the Inter-communication Control System.
- Fully user programmable.
- Weapon system symbols positioned according to direction and lethality.
- Missile symbols indicating Direction-Of-Arrival and Time-To-Impact.
- Indication of associations between missiles and weapon systems.
- Display of on-going countermeasure actions.

### Chaff & Flare Dispenser management:
- For a given threat, the most appropriate decoy sequence is selected.
- Decoying is initiated at the most suitable time, either automatically or after validation by the crew.
Thales Airborne Systems
know-how in EW systems

A unique experience in aircraft self-protection:
• acquired over 40 years of activity in this domain,
• illustrated by a comprehensive line of advanced equipment.

The ability to conduct EW system integration programs:
• proven during numerous domestic and international programs,
• as per ISO 9001 quality standards,
• from system specification to aircraft qualification.

An extensive record of co-operation with other EW equipment manufacturers:
• resulting in the capability to offer alternative solutions.

An unmatched expertise in EW:
• enabling to provide customers with comparative data related to various solutions,
• guaranteeing first class technical assistance throughout all program phases.