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## **“Be prepared for the unexpected”: Rheinmetall surveillance and alert systems at Eurosatory 2016**

Successful surveillance and reconnaissance operations require comprehensive detection capabilities and reliable identification of ground, surface and airborne threats at various altitudes – both day and night and under adverse weather conditions.

Despite their many advantages, radar-based solutions feature a number of drawbacks: they are active, susceptible to jamming, and may generate clutter when the radar beam bounces off non-targets such as mountains or trees. Finally, when radar detects a potential threat it generates an electronic signal rather than a real image of the target. These disadvantages can be offset by deploying passive infrared systems.

One of a number of state-of-the-art Rheinmetall system solutions, HEROLD is on display at Eurosatory 2016 in Paris.

HEROLD is an electro-optical surveillance and fire-control system which assures continuous 360° surveillance, detection, alerting and simultaneous tracking of more than 256 moving ground/surface and airborne objects. The combined key capabilities of the HEROLD system solution enable the operator to constantly generate and maintain optimum situational awareness.

The HEROLD system configuration encompasses three main system elements:

- **FIRST Sensor System** – covering the complete angular range in azimuth, the “Fast InfraRed Search and Track” (FIRST) surveillance sensor delivers outstanding performance, assuring simultaneous detection and display of multiple ground/surface and airborne targets within a complete real-time panoramic thermal video stream, with a 5Hz repetition rate and an adjustable elevation beam from -29° to +35°. At Eurosatory 2016 the FIRST sensor head is on display, usable for various land-based and naval system applications.
- **Multi Sensor Platform MSP600** for enhanced target observation and evaluation – a long-range E/O sensor system for target evaluation, tracking and fire control which features a thermal imager, a switchable eye-safe laser rangefinder and a high performant daylight camera.
- **MMT** - the sophisticated multi-mode multi-target tracker assures robust tracking capabilities and offers various search parameter settings for automatic target reconnaissance (ATR) and identification to reduce false alarms as well the workload of the operator during extended missions.

The HEROLD Rheinmetall is deploying at Eurosatory 2016 is fully functional and will operate live. "Targets" in the surrounding airspace will be detected and tracked during the entire period of the exhibition and displayed to visitors.

HEROLD – also available as HEROLDnavy for ship applications - feature the following key capabilities:

- automatic detection, alert, verification and tracking of ground, sea and airborne targets
- high sensor sensitivity and long-range capability due to cooled IR sensors
- multi-mode multi-target tracking of more than 256 targets (FIRST)
- 3D-target data (coordinates, speed, course, altitude)
- multiple dedicated deployment strategies (virtual fence, scanning, etc.)
- map display for improved situational awareness
- data recording
- target assignment and fire control
- network-enabled operations

HEROLD/HEROLDnavy provide dynamic, high-precision, reliable surveillance capabilities in a wide array of operational scenarios: airspace, ground/surface and coastal surveillance; air defence; border control; monitoring of harbour and airfield/airport installations; forward operating base protection; and air, ground and surface defence applications for various gun and missile systems.

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