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Rheinmetall surveillance and alert systems at MSPO 2017 – “Be prepared for the unexpected”

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. Deploying passive infrared systems can offset these disadvantages.

Rheinmetall’s 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 real-time 360° panoramic IR video, with an outstanding 5Hz video frame-rate and an adjustable elevation beam from -28° to +34°. At MSPO 2017 a model of the FIRST sensor system is on display, suitable for various land-based and naval system applications.

The MSP600 Multi Sensor Platform for enhanced target observation and evaluation – a long-range E/O sensor system for target evaluation, tracking and fire control, it features a thermal imager supplemented by a day-light camera, as well as a laser rangefinder with a high PRF ensuring precise 3D-target data for direct fire control. The sensors are mounted in a gyro-stabilized gimbal with an outstanding stabilization accuracy ensuring full performance of the sensors even on the move.

A sophisticated multi-mode multi-target tracker, the assures robust tracking capabilities and offers various search parameter settings for automatic target reconnaissance (ATR) and identification, thus reducing false alarms as well the workload of the operator during extended missions.

Rheinmetall AG · Corporate Communications · P.O. Box 104261 · 40033 Düsseldorf, Germany · Phone +49 211 473-4748

HEROLD – also available as HEROLDnavy for ship applications – features 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.)
- 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.

For more information, please contact:

Oliver Hoffmann
Head of Public Relations
Rheinmetall AG
Tel.: +49-(0)211-473 4748
oliver.hoffmann@rheinmetall.com