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Comprehensive, made-to-measure protection from Rheinmetall: “Force protection is our mission”

Small arms fire, guided missiles, explosively formed projectiles and improvised explosive devices are among the most serious threats facing troops during deployed operations today.

Whether the object is preventing optical, optronic or electronic detection, or developing individual body armour, innovative vehicle systems or even safeguarding large-scale critical infrastructure, Rheinmetall supplies cutting edge systems and total solutions – all from a single source.

One of the best-known names in the international defence industry, a great strength of Rheinmetall is its unsurpassed ability to integrate new and existing technology into a highly effective system of systems.

At Eurosatory 2012 Rheinmetall is displaying its comprehensive force protection concept with the aid of a demonstrator, highlighting components as diverse as vision blocks, add-on armour, mine protection seats, the ROSY smoke/obscurant system and ADS.

In addition, the new HX2 from Rheinmetall MAN Military Vehicles is on public view for the first time. Its protected cab and integrated ADS make it the world's only truck at present that offers comprehensive protection from RPG attacks.

Protection in accordance with the “Onion Principle”

Rheinmetall's comprehensive protection concept involves a multi-layer approach.

Rheinmetall Chempro und Rheinmetall Verseidag Ballistic Protection Systems are the Group's experts for passive protection products. They are made of lightweight, high-performance materials, designed for inclusion in tactical vehicles, helicopters or ships for protecting passengers and crew. Body armour inserts made of these materials also form part of this product line. Rheinmetall's innovative products are breaking new ground in this field, enabling the Group to offer military customers complete solutions from a single source, including bullet-resistant driver's cabs for logistical vehicles and trucks.

High-performance “soft-kill” solutions offer excellent active protection by making vehicles harder to detect and hit. Here, too, Rheinmetall can supply solutions for ground vehicles as well as fixed-wing aircraft helicopters and ships. Smoke/obscurant systems like “Rosy” make vehicles invisible to the enemy in the event of an ambush, etc. At sea, the Group's MASS naval countermeasures system now sets the global

standard. This decoy-based system creates phantom targets that reliably divert incoming enemy missiles from their intended objectives.

Constituting the last line of defence, “hard-kill” standoff systems such as Rheinmetall’s ADS neutralize incoming projectiles before they reach their target, and thus present an especially innovative and effective solution.

Active Defence System (ADS)

Successfully tested just last year, the Active Defence System (ADS) is the world’s most advanced and effective standoff hard-kill system for protecting military vehicles in practically every weight class from operational threats. The sensor system detects incoming projectiles such as shaped charge warheads or antitank guided missiles. In a matter of microseconds, the system activates a protective sector and neutralizes the incoming object by means of directed pyrotechnical energy immediately before it reaches its target. Because it operates in a downward direction, ADS is the only high-performance close-quarters protection system that minimizes collateral damage in the immediate vicinity of the vehicle.

The German Bundeswehr began testing ADS intensively at the beginning of 2011. For test purposes, an ADS was integrated into a Fuchs/Fox 1A8 armoured transport vehicle. Here, the German Federal Agency for Defence Technology and Procurement (BWB) was not merely interested in determining the integration potential of the new system, but also in conducting driving performance tests (principally at Defence Technology Detachment 41 in Trier) in order to assess its impact on mobility. The trials were successfully concluded in June 2011.

ADS Gesellschaft für aktive Schutzsysteme mbH, in which Rheinmetall AG of Düsseldorf holds a majority 74% share, with the remainder owned by IBD GmbH of Lohmar, Germany, has already booked its first series order for the new product: an Asian nation has selected the Active Defence System for protecting its military vehicles. In the meantime, ADS has progressed from the development and testing phase to full-scale production.

European armies are currently showing great interest in ADS technology as well. Experts put the number of military vehicles requiring an active protection system of this type in the tens of thousands worldwide.

Rheinmetall’s comprehensive protection concept

In recent years, the Rheinmetall Group has been systematically adding to its portfolio of advanced protection technologies through a strategy of well-targeted corporate buyouts. Thanks to Rheinmetall Chempro GmbH, Rheinmetall Verseidag Ballistic Protection GmbH and ADS Gesellschaft für aktive Schutzsysteme mbH, the Group now has a unique range of sophisticated protection technologies at its disposal.

A growing number of defence contractors and end-customers place their trust in Rheinmetall’s force protection expertise. The Group is currently taking part in performance upgrade programmes for a wide variety of vehicles in countries around the globe.

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