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## **“Force protection is our mission”: Rheinmetall’s comprehensive, made-to-measure protection**

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.

A great strength of Rheinmetall is its unsurpassed ability to integrate new and existing technology into a highly effective system of systems.

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. With Rheinmetall Chempro GmbH, Rheinmetall Ballistic Protection GmbH and ADS Gesellschaft für aktive Schutzsysteme mbH, the Group has a unique range of sophisticated protection technologies at its disposal – all from a single source.

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 and vessels in countries around the globe.

At DSEI 2013 Rheinmetall is displaying its comprehensive force protection concept, highlighting systems and components as diverse as add-on armour and spall-liners, or the ROSY smoke/obscurant system as well as the ADS Active Defence System.

### **Protection in accordance with the “Onion Principle”**

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

Rheinmetall Chempro und Rheinmetall Ballistic Protection are the Group’s experts for passive protection products. Among the passive protection systems on show at DSEI 2013 is the VERHA line of products from Rheinmetall Ballistic Protection GmbH.

These include lightweight high-performance ballistic protection materials which are integrated into many military and civil armoured vehicles, helicopters, naval vessels as well as furniture, plus insert plates for ballistic vests all over the world.

Rheinmetall Chempro focuses on passive protection systems for wheeled and tracked armoured vehicles against mine blasts, Improvised Explosive Devices (IED's), tandem warheads as well as 120 mm Kinetic Energy warheads. In recent years, Rheinmetall Chempro has equipped more than 40,000 vehicles with highly sophisticated protection systems.

In addition, Rheinmetall offers the Mobile Modular Protection System, or MMS. Reinforcing checkpoints, hardening shelters in combat outposts and forward operating bases and shielding portholes or machine gun positions on board ships are just a few of the potential applications for the highly flexible MMS, which can be quickly deployed in all climate zones in accordance with STANAG 4569, even in difficult terrain.

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 Bullfighter and MASS naval countermeasures systems set the global standard. MASS is a decoy-based system that creates phantom targets that reliably divert incoming enemy missiles from their intended objectives. The latest version of ROSY, "ROSY\_mod" ("mod" stands for modular) is premiering at this year's DSEI. It is specifically designed for small weapon stations and light vehicles of the kind used by special operations forces. Moreover, ROSY\_Mod can be integrated directly into the vehicle without a launcher, making it undetectable.

Though these are not on display at DSEI, Rheinmetall also supplies 66mm and 76mm smoke/obscurant systems and ammunition. In its capacity as subcontractor to Finnish vehicle maker Patria, last year Rheinmetall booked an order for the first serially produced "Light Vehicle Protection System LVPS 66mm". A total of 113 Armoured Modular Vehicles (AMVs) are being equipped with the system on behalf of the Swedish armed forces. Additional orders, likewise for Swedish end-customers, have come from BAE-H for the BvS10, and from Patria for the upgrade of the XA203S. The armed forces of Sweden and the Netherlands already deploy the system in Afghanistan.

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, 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.

In 2012 an international customer qualified the ADS in an extensive trial programme, including static and dynamic ATR and ATGM firings and comprehensive environmental tests. Series delivery of the system has started.

A European agency has carried out generic qualification of the system, to include integration into a 4x4 vehicle, plus handling and EMC tests. Full qualification is expected to be finalized in 2013.

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.

Armies around the globe are currently showing great interest in ADS technology. Experts put the number of military vehicles requiring an active protection system of this type in the tens of thousands worldwide.

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