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## **Rheinmetall presents its future oriented concept for ground-based air defence – in close cooperation with Raytheon**

Successful air defence demands a holistic approach. This is why Rheinmetall – Europe's foremost maker of military systems and equipment – wants to supply the German armed forces with a path-breaking solution encompassing the whole complexity of ground-based air defence. Here the Düsseldorf-based high-tech group is cooperating closely with America's Raytheon.

Rheinmetall's plan calls for networking all relevant sensors, effectors, platforms and C4I assets into a single, scalable, system of systems. This will create a highly effective, modularly scalable and flexible air defence system covering the Bundeswehr's full mission spectrum.

### **Short- and very short-range air defence**

The phasing out of the Roland and Gepard mobile air defence systems leaves the Bundeswehr with very limited capabilities in the area of short- and very-short range air defence, or SHORAD. Rheinmetall's lightweight air defence system ensures that this capability is maintained through to 2025.

Effective SHORAD – NNbS in German military parlance – requires a total system concept, one which is capable of neutralizing incoming rockets, artillery and mortar rounds – the so-called RAM threat – as well as bringing down unmanned aerial systems, especially in the low, slow, small (LSS) subset, e.g. quadcopter drones. Finally, the system has to be able to deal effectively with conventional aircraft flying at close range. As an experienced SHORAD supplier, Rheinmetall's proposal calls for a mix of automatic cannon and guided missiles, and in the nearby future augmented with high-energy laser weapons.

### **Tactical air defence systems**

Over the next few years, the Bundeswehr will be utilizing the Patriot integrated air and missile defense for defence e.g. against tactical ballistic missiles. Rheinmetall is Raytheon's national partner for evolving Patriot in Germany.

A phased upgrade from the current Patriot Config 3+ system to next-generation (NextGen) status will meet the future requirements for a long range ground-based air defence system.

Even in the concept phase, the systemic approach embodied by Rheinmetall SHORAD and the Patriot NextGen meets the requirements for comprehensive, adaptable, modular air defence, enabling a single-source approach covering all aspects of air and missile defence.

Patriot is in the backbone of integrated air and missile defense for six NATO nations and eight other partner countries, making it globally interoperable. A multinational solution, it significantly lowers lifecycle costs thanks to a common threat database and modernization costs shared across the 14-nation partnership.

### **Scalable tactical C2 design**

Rheinmetall envisages a flexible, role-based command and control architecture for its ground-based air defence system. The scalable tactical operation centre concept with flexible C2 architecture enables optimized force composition in line with the given specific operational task.

### **“VSHORAD” army programme**

Complementing the German Air Force capabilities of ground-based air defence, the German Army has articulated the demand for an organic air defence capability against microdrones, to be available for NATO-VJTF 2023. The operational demand envisages a wheeled air defence vehicle protecting units in the very short range from aerial threats during deployed operations. Here, Rheinmetall can offer a market-ready system. Future utilization and integration of those VJTF 2023 components into the SHORAD system is assured, thus representing sustained investment.

### **Rheinmetall – a powerful systems supplier for the modern military**

Headquartered in Düsseldorf, Rheinmetall AG is a publicly traded, globally operating high-tech enterprise. Founded in 1889, the Group today consists of two operational components: Rheinmetall Defence and Rheinmetall Automotive. Last year Rheinmetall AG's 21,600 employees generated sales of around €5.9 billion.

Today Rheinmetall numbers among the world's top makers of cannon-based air defence systems and is pioneering the use of high-energy laser effectors. Besides the Patriot missile air defence system, all other ground-based air defence systems in the Bundeswehr inventory come from Rheinmetall: the Wiesel-mounted LeFlaSys lightweight air defence system and the C-RAM protection system Mantis for very close-range engagements. LeFlaSys is currently deployed in the Baltic States, and Mantis in Mali. Follow us on [Twitter: @rheinmetallag](#).

### **Raytheon – a technology and innovation leader**

Raytheon Company, with 2017 sales of \$25 billion and 64,000 employees, is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions. With a history of innovation spanning 96 years, Raytheon provides state-of-the-art electronics, mission systems integration, C5I products and services, sensing, effects, and mission support for customers in more than 80 countries. Raytheon is headquartered in Waltham, Mass. Follow us on [Twitter: @Raytheon](#).

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