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Rheinmetall and Hensoldt demonstrate successful integration of passive sensor technology into a modern air defence system

During the German Air Force exercise Timber Express 2026 in Manching, Rheinmetall Air Defence and Hensoldt achieved a milestone for future networked air defence. During a German Air Force exercise, the air picture generated by Hensoldt's Twinvis passive radar was successfully integrated into Rheinmetall's Skymaster command and weapon engagement system, which was directing the Skynex Air Defence battery deployed in the scenario.

The integration took place under realistic NATO networking conditions and demonstrated the high flexibility and open architecture of the Skymaster system. A common air picture could be generated by fusing and correlating sensor data within NATO's Link 16 network. The Hensoldt passive radar demonstrated excellent performance in detecting and tracking air targets. This confirms the high operational value of modern passive sensor technology for air defence. Twinvis is a passive radar based on the latest digital technology that can be used for wide-area military airspace surveillance or civil air traffic control.

Particularly noteworthy is Skymaster's ability to combine active and passive radar sensors with electro-optical sensors into a comprehensive air picture within the air defence network. This creates new opportunities for resilient, low-emission air surveillance in line with a modern emissions control strategy (EMCON), while at the same time improving situational awareness for the protection of high-value infrastructure, critical facilities and mobile military units.

The demonstration highlights the future viability of distributed and interconnected sensor networks and illustrates how passive sensor technologies can usefully extend and complement existing air defence systems. Furthermore, passive systems increase network survivability due to the absence of a distinctive identification. The findings provide an excellent foundation for the integration into stationary Skynex systems, mobile Skyranger solutions and modern counter-UAS systems such as the Skyspotter.

The success of this trial was possible through the close and constructive cooperation between the participating German Air Force organisations, the exercise management team and the expert teams from Rheinmetall Air Defence and Hensoldt. Together, they achieved a NATO-compatible integration of the highest quality in a challenging technical environment, making an important contribution to the continued development of modern integrated air defence capabilities.

