



A personnel carrier almost invisible to radar

Camouflage characteristics are regularly investigated and examined. Since August 3 this year, S+T has been measuring the radar signature of an armored personnel carrier (APC) in the test chamber in Thun and will continue to do so until September 11. The measurement infrastructure being used is part of a long-term study investigating just how visible vehicle camouflage characteristics are, in order to produce improvements in camouflage.

At first sight, it looks like something from a science fiction film: making an object completely invisible to sensors. How is this done? Using a special infrastructure, S+T tests the camouflage characteristics of appliqué camouflage kits in the millimeter wave range. The trials are conducted with an Inverse Synthetic Aperture Radar (ISAR). The radar scans the vehicle at 94 Gigahertz, allowing every single spot to be checked. This creates a radar-generated image of the most significant scattering centers on the vehicle. By subsequently comparing these images with images produced without a camouflage kit, patterns and materials can be evaluated and improvements made. Only after a thorough analysis of the results and optimization of the materials are camouflage kit equipped vehicles subjected to field troop trials to check the effectiveness of the camouflage. Even an armored personnel carrier detected by radar reconnaissance sensors will then appear as a distorted or unidentifiable image.



Radar antennae (in the foreground) measuring a rotating APC fitted with a camouflage kit

Authors: Dr. Hans Pratisto, WTS, Dr. Matthias Renker, WTS