

Context

The convergence of Augmented Reality (AR) headset technology and miniaturized computing/sensor systems presents novel opportunities for connected soldier applications. Advances in AR technology have led to current implementations in various industrial sectors, enhancing efficiency in processes ranging from manufacturing to construction inspection. Integrating advanced sensing capabilities such as multi-spectral infrared (IR) cameras and radio frequency (RF) detectors with state-of-the-art AR hardware constitutes a significant research area for the Belgian Defence, potentially extending the limits of human sensory perception in operational contexts.

Objective

The goal of this study is to integrate:

- a) the most recent compact infrared cameras with AR headsets for real-time, wearable and hands-free usage;
- b) a RF spectrum sensing device together with our AR system.



DFR DAP/22-01: BeyVAR Beyond Visual Augmented Reality

Methodology

For IR: Development of an automated multi-spectral calibration framework, development of multi-spectral SLAM system, development of onboard processing methods for threat detection capabilities.

For RF: Development of an automated RF spectrum sensing with detection of arrival, development of a SLAM-based RF triangulation system, development of onboard processing threat detection capabilities.

Who



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