

PROJECT MARTINA


Multi-source satellite imagery artificial Intelligence Analysis challenge

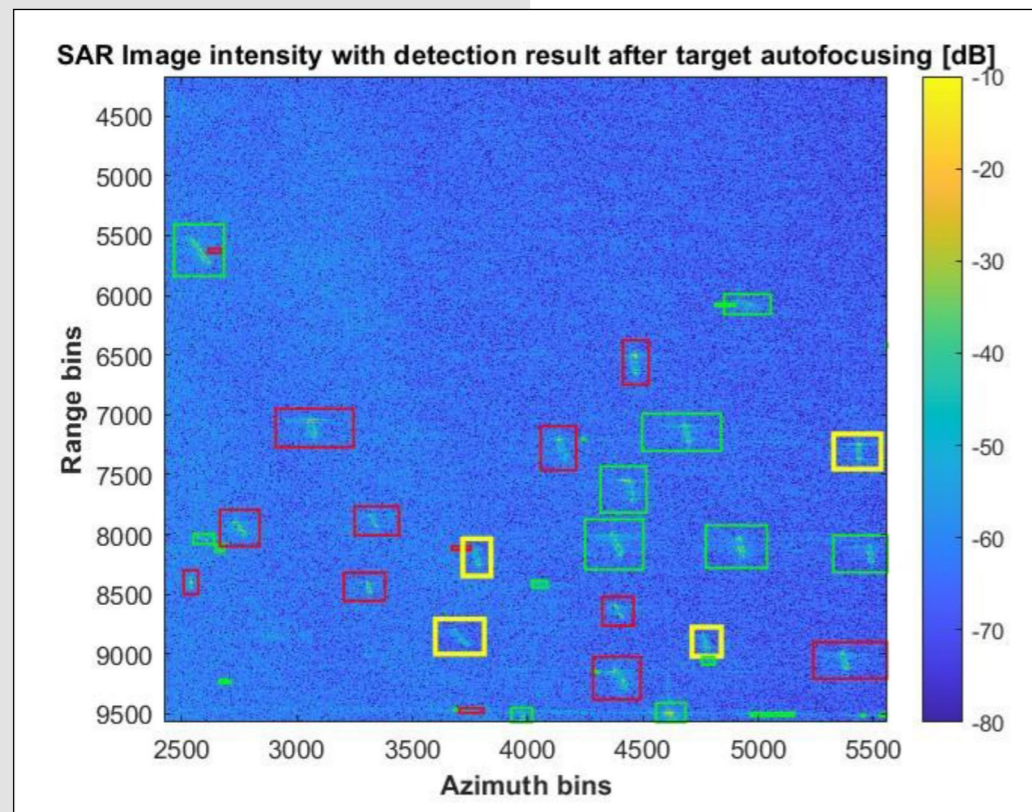
Defence intelligence organisations across the EU face an overwhelming growth in areas of interest and in the volume of available satellite imagery. Artificial Intelligence offers a way to accelerate image analysis by automating processing, feature extraction, and other labour-intensive tasks. Yet, the effectiveness of AI in this domain depends on rigorous validation, as models can suffer from bias, overfitting, and sensitivity to the complex conditions typical of satellite data, such as atmospheric variability or sensor differences. Ensuring reliability therefore requires diverse datasets, robust metrics, and systematic evaluation. MARTINA addresses this need by establishing the necessary hardware infrastructure, a collaborative testing platform, curated and annotated datasets, and comprehensive test and evaluation plans. The project will organise a multi-year technological challenge in which at least three Participant Consortia will develop and validate AI solutions for analysing multi-source, multi-modal satellite imagery for defence use. Four progressive campaigns will test AI systems across a wide set of operational scenarios and increasing levels of complexity. A consortium of 17 partners – including research organisations, industry, SMEs, and satellite data providers – has joined forces to define requirements, provide high-quality data, and ensure meaningful validation procedures. Use cases are grouped into major functional areas such as site analysis and monitoring, damage assessment, and mapping and tracking, progressively integrated into higher-level information products throughout the challenge. By the end of the project, MARTINA will have created a reusable environment, validated datasets, and standardised procedures

to support future challenges and the transition of innovative AI-based solutions into operational and commercial products for EU Member States.

Keywords: AI, Radar, Electro-optical, Satellite, Multimodal, GEOINT.



Technical Sheet
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SATCEN, OPT/NET, Bullet Prove, Flysight, Wiser Technology, ONERA, LIST, CEIIA, GEOSAT, ICEYE, DLR, SATLANTIS, CNIT, HAA, Fraunhofer, NLR, Hisdesat
Project duration
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Involved countries
Netherlands, Poland, Portugal, Italy, Bulgaria, Germany, Greece, Spain, Finland, Luxembourg, France.



(a) Example image of the output of a detection algorithm applied to a SAR image obtained with the COSMO-SkyMed constellation.

