

GeoInformation Space Technologies & Needs for Infrastructures

Sistemi, Servizi e Applicazioni spaziali a sostegno delle grandi infrastrutture nazionali,
ASI 04/11/2021

NATIONAL CRITICAL INFRASTRUCTURES



OIL & GAS



TRANSPORT



UTILITIES &
ENERGY

GEOINFORMATION PORTFOLIO FOR INFRASTRUCTURES AND CRITICAL ASSETS



DEFORMATION ANALYSIS

Identifying deformation and landslides in an early stage is crucial to plan maintenance, inspections and prevent major events. PSP-IFSAR proprietary algorithm enables high quality, millimeter precision, high density InSAR analysis (historical and monitoring) for slow deformations. A continuous monitoring can be also set up through GNSS-based services for critical situations or critical assets.



CHANGE DETECTION AND ENCROACHMENT ANALYSIS

Keeping track of the surroundings of an infrastructure can be vital to guarantee safe operations. AWARE provides multi temporal analysis based on optical/radar satellite, aerial and drones data to identify changes in the territory: vegetation along railways or toxic dumps close to aqueducts are just a couple of AWARE basic services.



ADVANCED MAPPING

Through the AWARE platform it is possible to access the advanced mapping services responding to specific requirements: characterization of the territory for planning new infrastructures: estimated population impact analysis, transport infrastructure inventory, flooding risk maps, Land Cover Change Map supporting the Sustainable management of natural resources, etc.



3D MODELLING

AWARE provides high resolution 3D models based on satellite, aerial and RPAS with different accuracy level from DSM to realistic models, according to the application case. 3D modelling linked to other analysis can give a complete knowledge of an asset and its health. Moreover 3D models can be used for Urban Planning, flight simulations and flooding events analysis.



Web platform for service provisioning and analysis



ADVANCED CLOUD
WEB PLATFORM



BIG DATA
MANAGEMENT



DATA ANALYTICS,
REPORTS & TOOLS

NEED FOR AN INTEGRATED APPROACH: MULTIPLATFORM – MULTISOURCE – MULTITEMPORAL



SATELLITE



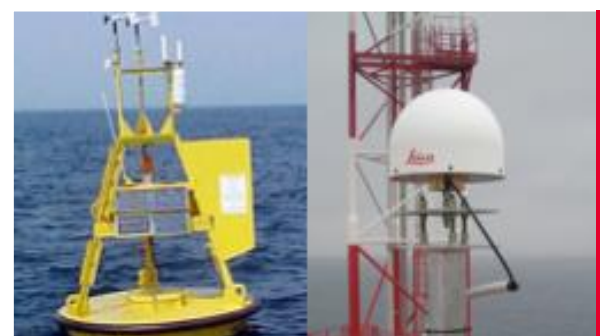
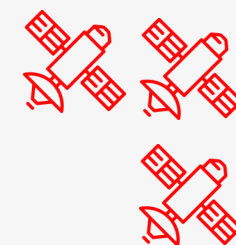
AERIAL SURVEY



DRONE



POSITIONING/GNSS



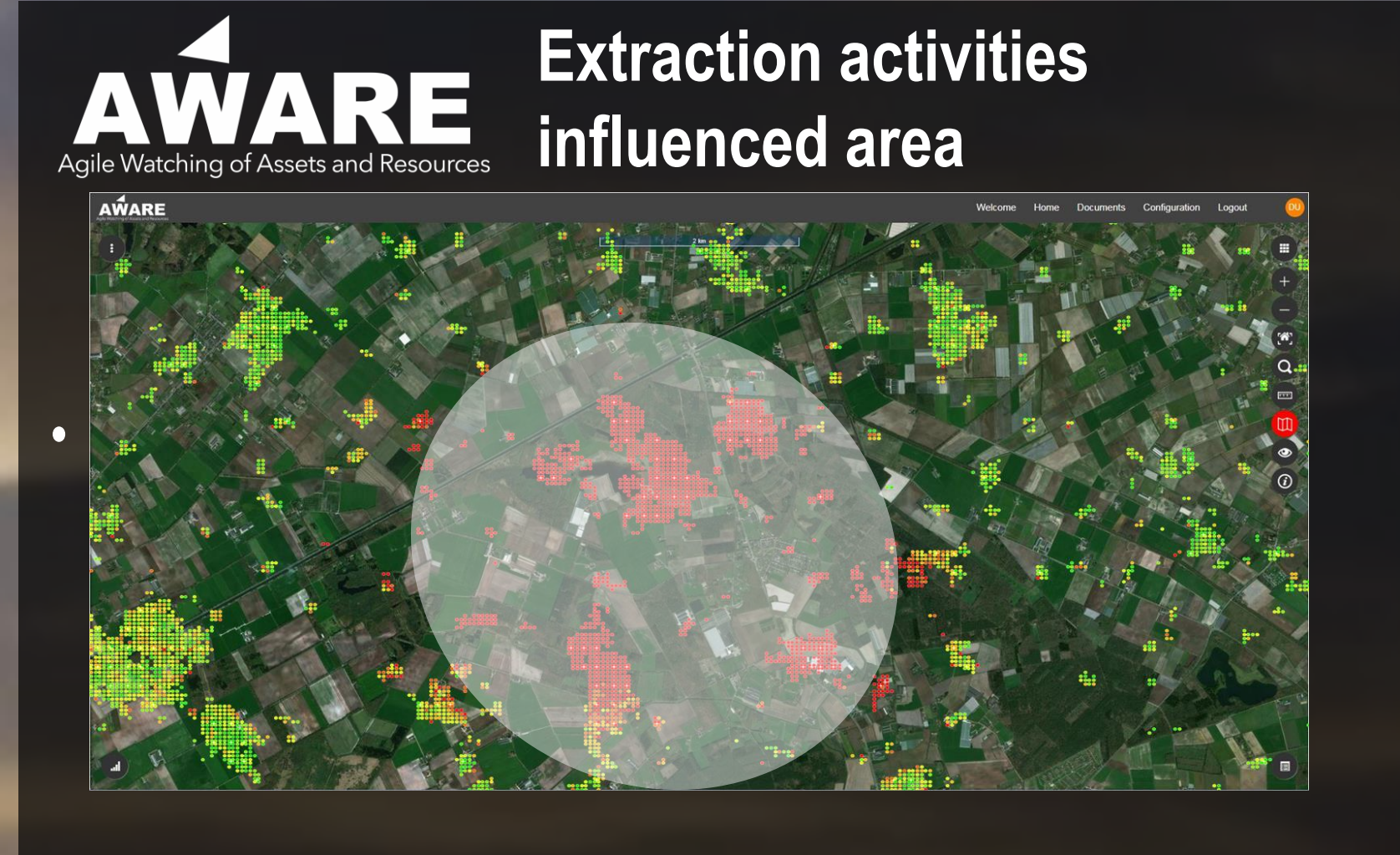
IN SITU SENSORS



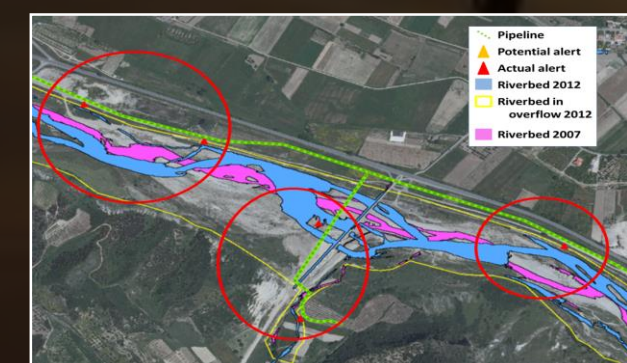
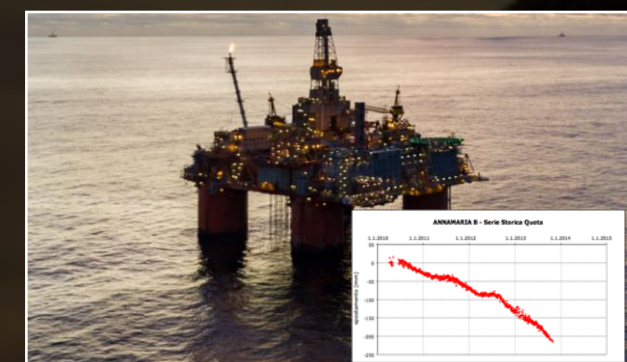


OIL & GAS

EXTRACTION SITE AND PIPELINE



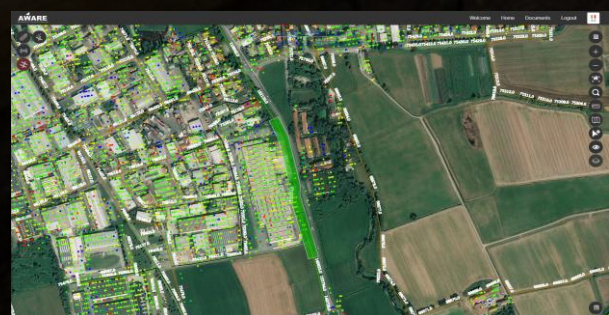
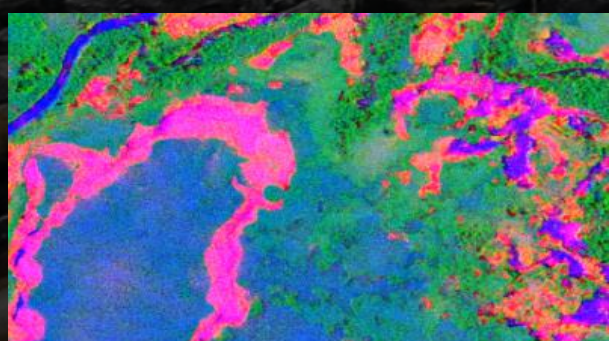
- O&G SITES & PIPELINE DEFORMATION MONITORING
- THIRD PARTY INTERFERENCE ANALYSIS AND CARTOGRAPHY
- GNSS SERVICES FOR OFFSHORE PLATFORM
- INTEGRATED MONITORING OF PIPELINES (SATELLITE + DRONE)



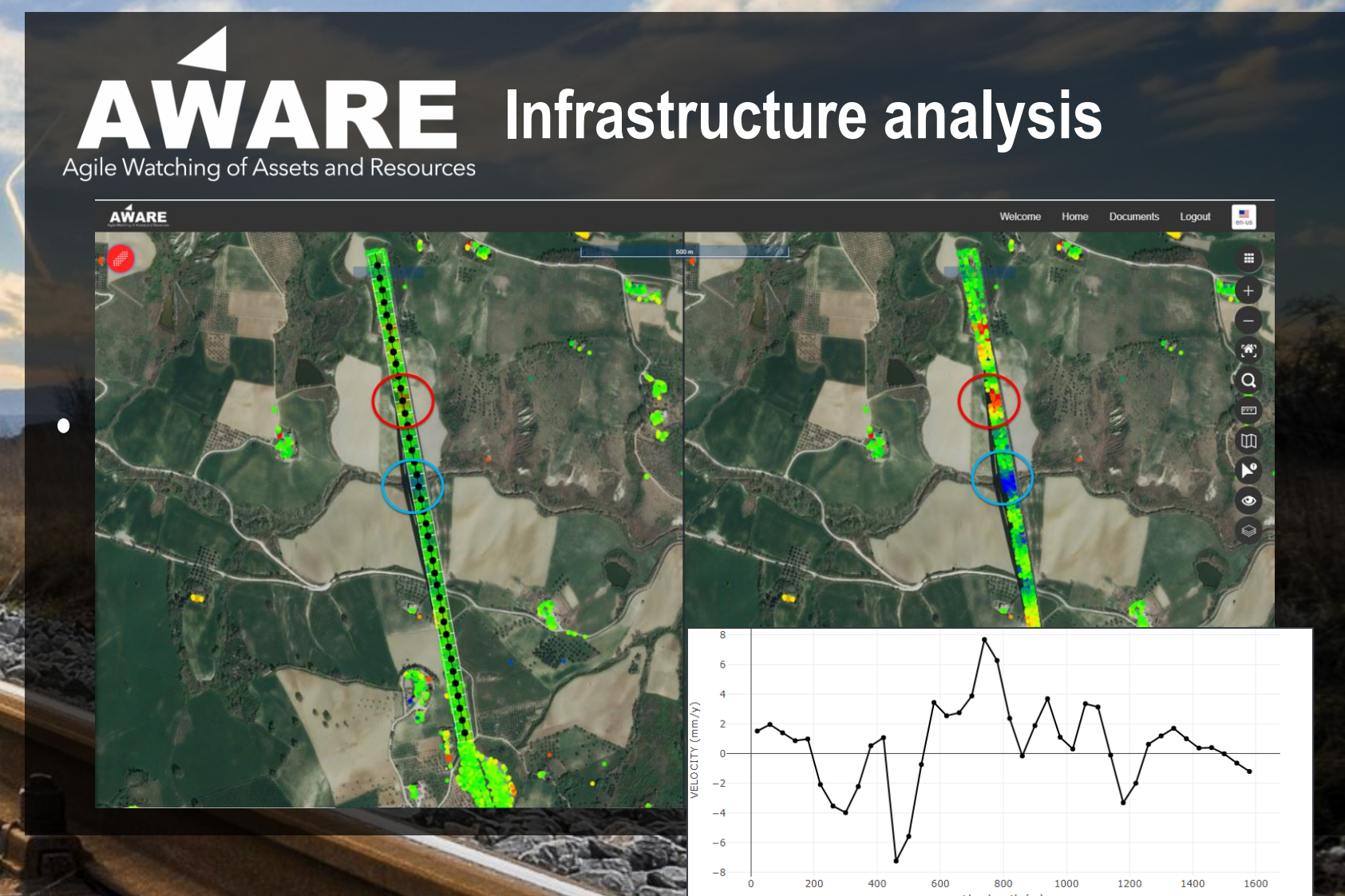


TRANSPORT

ROADS, RAILWAYS,
HARBOURS, AIRPORTS



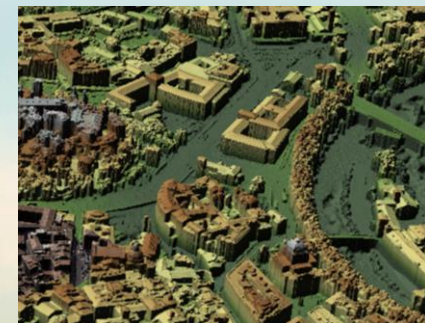
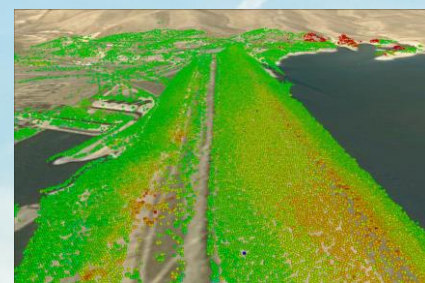
- INFRASTRUCTURE AND SURROUNDING SLOW DEFORMATION ANALYSIS
- THIRD PARTY INTERFERENCE ANALYSIS AND CARTOGRAPHY
- VEGETATION ENCROACHMENT
- WORKS PLANNING AND MONITORING



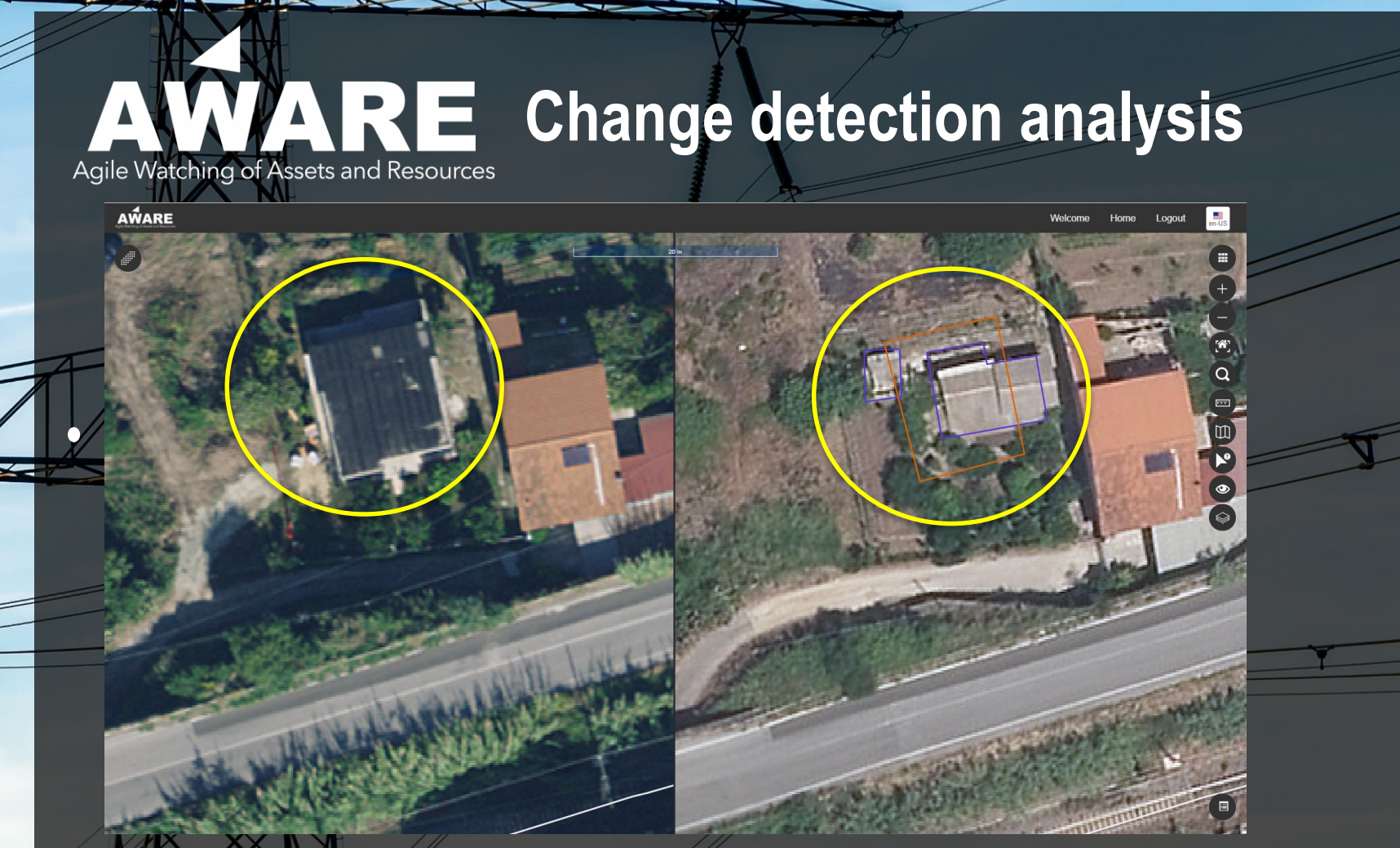


UTILITIES & ENERGY

POWER LINES, TELCO INFRASTRUCTURES,
WATER INFRASTRUCTURES



- ASSET AND TERRAIN DEFORMATION ANALYSIS
- DAM & BASIN MONITORING
- THIRD PARTIES AND VEGETATION INTERFERENCES
- 3D MODELLING FOR PLANNING AND OPERATIONS



SPUNTI PER L'EVOLUZIONE DEI SERVIZI

- Acquisizioni distribuite sulle 24h (sia ottico che SAR con ottiche diverse dalle tradizionali)
- Rapido accesso al dato & response time ridotto (dal tasking alla disponibilità del dato)
- Potenziamento delle capacità di acquisizione per rispondere a richieste sul territorio extra programma MapItaly



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