HEIMDALL

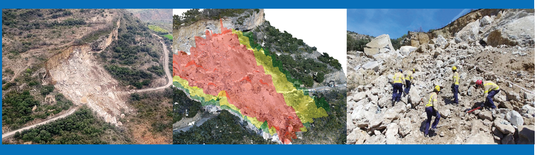
HEIMDALL PROVIDES TOOLS FOR SUPPORTING DECISIONS ON LANDSLIDE & TERRAIN MOVEMENTS CRISIS SITUATIONS

(Training, preparedness and response)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No. 740689

1 LANDSLIDE SIMULATOR:

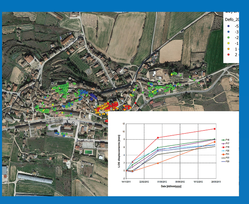
- Enables the delineation of areas susceptible to landslides.
- Helps end-users select safe places to install Advanced Command Centres near incidents.
- Provides an analysis of the rainfall that triggered the landslide event and determines how the weather forecast will affect stability over the following days.



2 MONITORING SYSTEMS

Geotechnical and hydrogeological in-situ sensors & GB-SAR

- Tool to gather information on ground movement or instability at a place where a landslide has occurred or where there is evidence that one could occur (EOS or field observation).
- High resolution spatial and temporal data.
- Pre-event monitoring: detection of precursors (e.g.: crack aperture).
- Post-event monitoring: evolution of movement post-crisis (e.g.: acceleration of displacement).

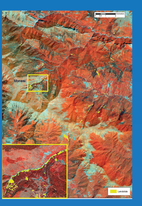


3 EARTH OBSERVATION

Tools to automatically detect areas affected by landslides

- Uses pre and post event satellite imagery for landslide area detection and mapping.
- Exploitation of Sentinel-2 imagery; high spatial and temporal resolution, systematic acquisitions, free.
- Processing of large areas enabling situation overviews.
- Automatic extraction highlighting, through change detection, both landslides and a major reactivation of the local riverbed with much vegetation loss.
- Assists in impact assessment pointing out affected infrastructure and land use / land cover types.

Pre event false color Sentinel-2 composite around Moneo (Italy) with landslide localisation, (C) ESA 2016/2017, processing ©cube-SERTIT



Semi-automatic landslide extraction around Moneo (Italy) derived from Sentinel-2 data acquired the 23/08/2016 and the 07/07/2017, (C) ESA 2016/2017, analysis and processing ©cube-SERTIT

THANKS TO HEIMDALL END-USERS CAN:

- + Identify areas susceptible to be affected by landslides
- + Delineate safe areas nearby the incident
- + Identify potentially affected infrastructure
- + Monitor the evolution of terrain movement
- + Evaluate Building impact
- + Estimate affected population
- + Create landslide event scenarios
- + Compare past scenarios based on previous parameters

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