Hydra-G
Emergency Monitoring and Special Application

Balduina Collapse
Rome, 2018
On February 14th 2018, a collapse happened in Balduina district in Rome. The picture on the right presents the interested area.
This place contained an open building site for the construction of a new building. In the image above we see how the foundations have collapsed, causing the road failure, resulting in several cars falling along the body of landslide. The soil in this area is mainly composed of loose sand non-lithified.
The day after the event, in order to verify the stability of the buildings above the landslide crown and the slope, an HYDRA-G was installed in a stable area. The investigation was carried out in collaboration with the Rome Fire Brigades.
Immediately, a campaign started to monitor the main landslide slope (A, in the image above) and the buildings above the crown (B), in order to verify its stability. The picture above shows the radar view and the area covered by the radar beam.
HYDRA-G: Emergency Monitoring

Monitoring of buildings and soil movement due to Balduina Collapse

HYDRA-G, took a photo of the scenario thanks to the integrated camera and recreated, through the acquisition and processing software SURF SCAN, a cloud of 3D points superimposed and referenced respect to the photo itself. For each point the radar every 30 sec, recorded parameters such as:

- signal phase and amplitude;
- x, y, z coordinates;
- displacement respect to the radar line of sight on each point.
Following the monitoring carried out on the day after from 2pm to 4.30pm, it was observed that the buildings above the landslide crown were almost stable, while there was a movement **up to 3mm** of the foundations that have been affected by the landslide body.
The following day was carried out a monitoring by translating the system a few meters and raising the radar head tilt so that the 3 buildings located above the landslide crown could be completely centered in the radar measurement scenario.

Monitoring didn’t show any particular movements, defining the safe area.