# Sea turbidity monitoring

Success Story on the use of EO to monitor water quality

#### Summary



Very high-resolution satellite images can effectively support the monitoring of water quality during dredging activities for the installation of new off-shore infrastructures.

Project Background Saipem S.p.A, an Italian oil and gas industry contractor, which was contracted for designing and constructing several pipelines all around the world, has adopted this innovative approach in water quality monitoring. The new approach integrates traditional analysis methods with daily collections of highresolution satellite images over the area of interest. (The project have been presented at Coast Esonda Expo 2014. On the event page of our website more details are available)

### Issues & Needs

During trench excavation, small soil particles remain temporary suspended in the seawater creating a peak of turbidity at the excavation time that progressively reduces its own values until reaching natural ranges.

The aim of the activities described is to evaluate in near real-time the possible presence and diffusion of sediments and their impact on the surrounding area.

## Solution

The performed activities consisted in near real-time turbidity monitoring through high resolution satellite images.

The new methodology offered by Planetek, starting from raw satellite data and through several processing steps (e.g.: atmospheric correction, conversion from digital number to reflectance), realizes a fast production of turbidity maps ready to be used few hours after the satellite acquisition.

# **Results & Perspectives**

The performed activities consisted in turbidity monitoring through high-resolution satellite images, using an innovative near real-time methodology and considering as a real case of application the excavation works. The advantages, proving that the satellite methodology and the automated workflows, can be resumed as:

- capability to define spatially and quantitatively the sediment dispersion;
- capability to receive the turbidity data in near real-time;
- capability to carry out the monitoring without involvement of workers on site;
- capability to document in a detailed and indisputable manner the work footprint, in case of any observations or claims by the client;
- capability to use the monitoring data for the predictive modelling calibration.

Related Info

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