P13: Monitoring Changes in Port Activity Patterns	
Maturity score	
Mean: 2.4	**STD:** 0.66

Constraints and limitations

- Cloud presence near large water bodies
- No observation at night
- Cost of VHR satellite imagery

Relevant user needs

UN37: Projection of risk to portfolio assets into the future.

R&D gaps

- Limited available labelled data of port activities.
- Temporal resolution and cloud presence of the satellite data can limit the frequency of monitoring and timely detection of rapid changes in port activities.
- Discerning fine-scale details of port activities.
- Limited nighttime observations

Potential improvements drivers

- More frequent VHR optical satellite imagery.
- More investigation of the use of VHR Synthetic Aperture Radar (SAR) imagery.
- Fusion, with in-situ sensors, long time series of data to model the specificities of the location, combination of optical sensors, hyperspectral, and SAR, but they need to be acquired at the same time.
- Provide more labelled data on port activities.
- VHR nighttime light observation.

Utilisation level review

Utilisation score	
Mean: 2.33	**STD:** 0.94

No utilisation

Low utilisation

Unawareness of the existence of commercial EO products with better specifications.

Medium utilisation

High utilisation

High importance and relatively accurate versus comparable methods of gathering this type of information.

Critical gaps related to relevant user needs