



COASTAL CHANGE FROM SPACE

Remote Sensing Solutions for Coastal Management

The ongoing effects of **climate change** could be devastating for coastal areas: sea level rise, more intense storm events and damage to coastal buildings and infrastructure can all have an impact on coastlines, while producing repercussions on people, the economy and the environment.

The **Coastal Change from Space** is a global service developed by ARGANS to detect annual and seasonal changes along long stretches of shorelines over **25 years of observations**. This can provide significant insights into determining where investments by governments should be focused and how corrective actions can be best targeted, in the framework of a **climate adaptation strategy**.

OUR APPROACH TO PRODUCE SHORELINES



IMAGE CO-REGISTRATION

We correct spatial registration mismatches between very high resolution and Sentinel and Landsat imagery to increase the ground-position accuracy of the image. The slave image inherits the position of the master one, considered to be the best image of the area.



WATERLINE

Our processor takes the co-registered imagery and derives the land/water boundary using a remote sensing index tailored to a specific region. The waterline provides a basis for monitoring geomorphology over the last 25 years.



SHORELINE

The waterline is converted into a shoreline, which calculates the land/water boundary at a fixed water level, relying on in situ measurements or numerical models. By comparing old to new shorelines, erosion or accretion can be detected.



Commissioned by 



APPROACH VALIDATED

The original project involved four pilot sites in England, Ireland, Spain and Canada. Our approach was validated by national experts from these countries.



QUALITY GUARANTEED

Quality control is key in such an innovative sector. We engaged with scientists and end users to develop from a monitoring into a risk assessment and prediction service.



APPLICABLE EVERYWHERE

The service enables a large spatial scale and a high temporal and spatial resolution to be delivered in an affordable manner everywhere in the world.

OUR SERVICES VIA THE



BASELINE (S2 ONLY)

- Co-registration is conducted BUT the co-registered imagery is not provided
- All available waterlines (using best indices and threshold selection)
- Datum related shorelines (based on slope generation and MetOc data scraping)

PRECISION (S2 & L5/L8)

- BASELINE +
- Co-registered imagery provided
- An annual coastal strip classification map based on a year of the clients choosing

PRECISION PLUS (S2 & L5/8)

- PRECISION +
- Datum shorelines supported by auxiliary data provided by client in specific areas
- Annual coastal strip classification maps based on three individual years of the clients choosing

The spatial accuracy of the waterlines derived is based upon the accuracy of the commercial VHR data selected during co-registration and is typically in the order of +/-3m on the ground.

**GET IN
TOUCH**

coastalerosion@argans.co.uk
coastalerosion.argans.co.uk

