# C-RISe – Coastal Risk Information Service
# Satellite Products Data Update

D Cotton SatOC Ltd., 16/09/20

## 1 Introduction

The C-RISe project team has acquired additional funding to support an update to the satellite products already distributed. This short note describes the upgrade to the data sets

## 2 Near Real Time Data Web Page

The Near Real Time Data demonstration Web Page will continue to be maintained until the end of March 2021 at https://www.satoc.eu/projects/c-rise/demo.html. This page presents the latest available wind, wave and surface current data, as follows:

- Satellite altimeter significant wave height and surface wind speed
  - Along-track at 7km intervals.
- Satellite scatterometer surface wind speed and direction
  - 25km gridded data; 2 x 500km swath
- Satellite measured surface current data
  - Total surface current estimated from satellite data. 0.25° resolution. Daily mean
- NOAA Wavewatch II forecast model output: Significant wave height, mean eave period, mean wave direction, surface wind speed and direction.
  - 0.5° grid, 3 hourly updates

Please note that the satellite data are produced by a Fast Delivery Processing chain, which may contain data gaps due to anomalies in data transmission or processing.

Figure 1 gives an example of these data for the 15th September 2020.

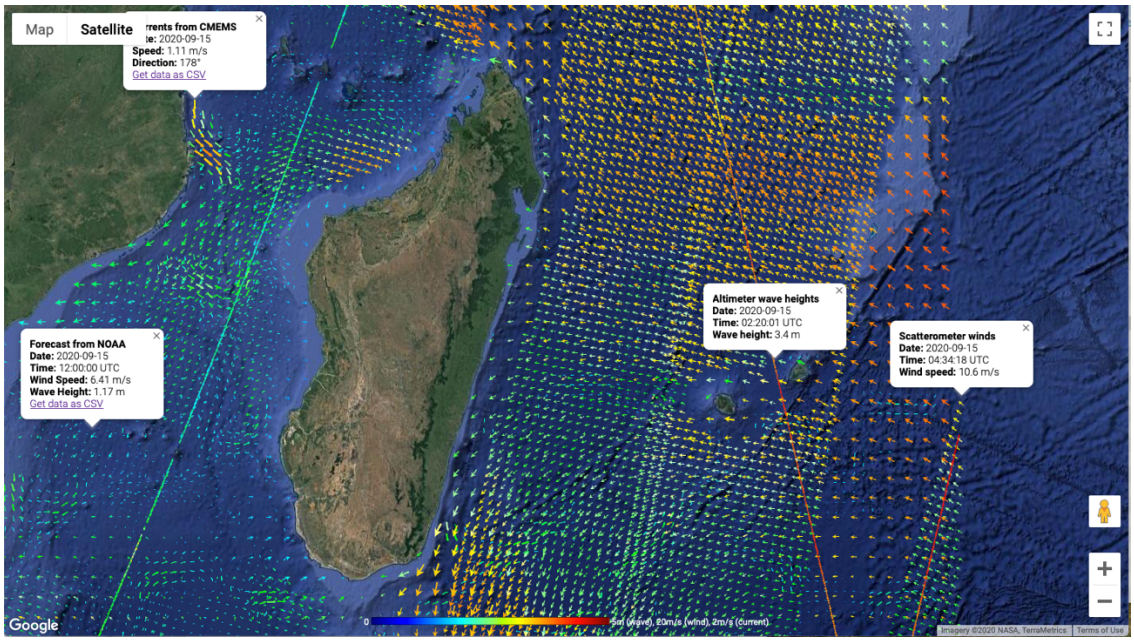


*Figure 1 Screenshot from C-RISe Near Real Time data demonstration page 15th September 2020*

# 3 Extension of Wind, Wave, Surface Current Climatology data

A one year extension to the satellite wind, wave and surface current climatology data, and sea level data, will be provided, as specified in Table 1. This extended data set will be distributed early on 2021, on USB / hard drive and online.

# 4 Extended Sea Level Data Set

In addition to the one year extension to the existing sea level data set from the Jason-3 satellite (red tracks in Figure 2), an improved spatial resolution in the sea level data will be achieved by processing altimeter data Envisat and AltiKa (yellow tracks in Figure 2).
Because of the different repeat orbits, the data from the Jason satellites provide a measurement once every 10 days, and the data from Envisat and AltiKa provide a measurement once every 35 days (but at a higher spatial resolution).

| Parameter | Description | Time Coverage | Satellites |
|---|---|---|---|
| Significant Wave Height and Wind Speed | Monthly, 1° x 1° gridded climatologies, from ESA CCI+ sea state | 1992-2020 | ERS-1, ERS-2, Envisat, Topex, Jason-1, 2,3 |
| Wind speed and direction | Monthly, 0.25° x 0.25°, gridded climatologies from ASCAT | 2007-2020 | Envisat, Jason-1, 2,3 |
| Total surface current (geostrophic + Ekmann) | Daily, 0.25° x 0.25°, gridded climatologies, from Globcurrent | 2002-2020 | Envisat, Jason-1, 2,3 |
| Sea Level | Along track data from the NOC coastal processor, 10 day repeat. | 2002-2019 | Jason-1, Jason-2, Jason-3 |
| Sea Level | Along track data from the NOC coastal processor, 35 day repeat. | 2002-2010, 2013-2016 | Envisat, AltiKa |

*Table 1. Satellite Climatology and sea level data to be provided by C-RISe*

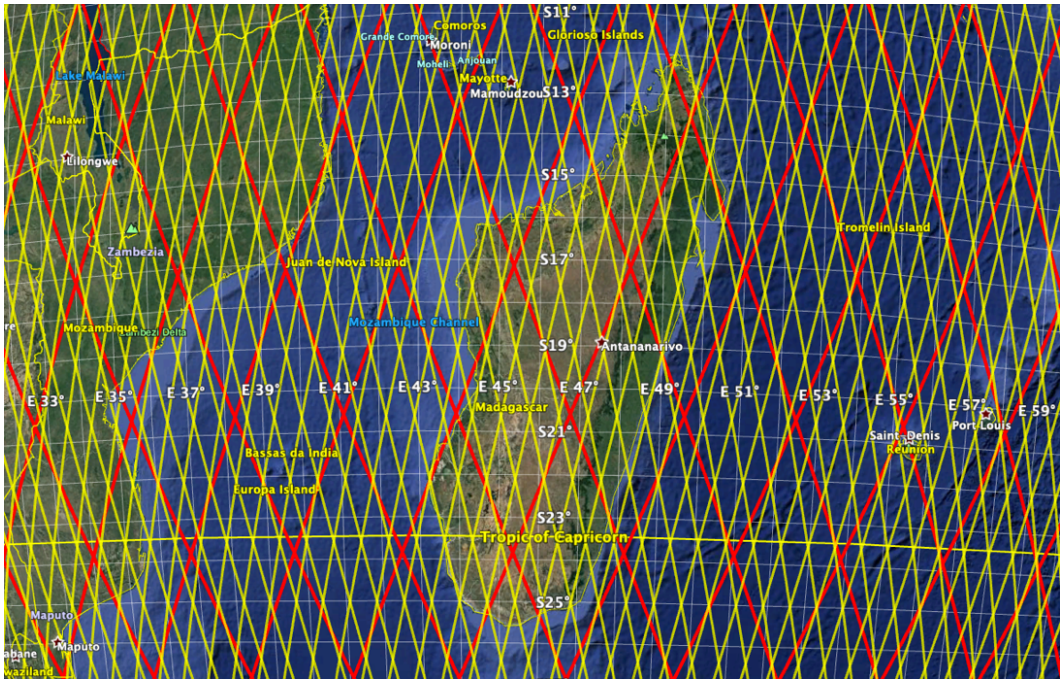


*Figure 2 Coverage of the extended sea level data set. A time series of one measurement every 10 days (2002 – 2019) will be provided on the Jason satellite tracks (red), and a time series of one measurement every 35 days (2002-2010, 2013-2016) will be provided on the Envisat / AltiKa satellite tracks (yellow)*