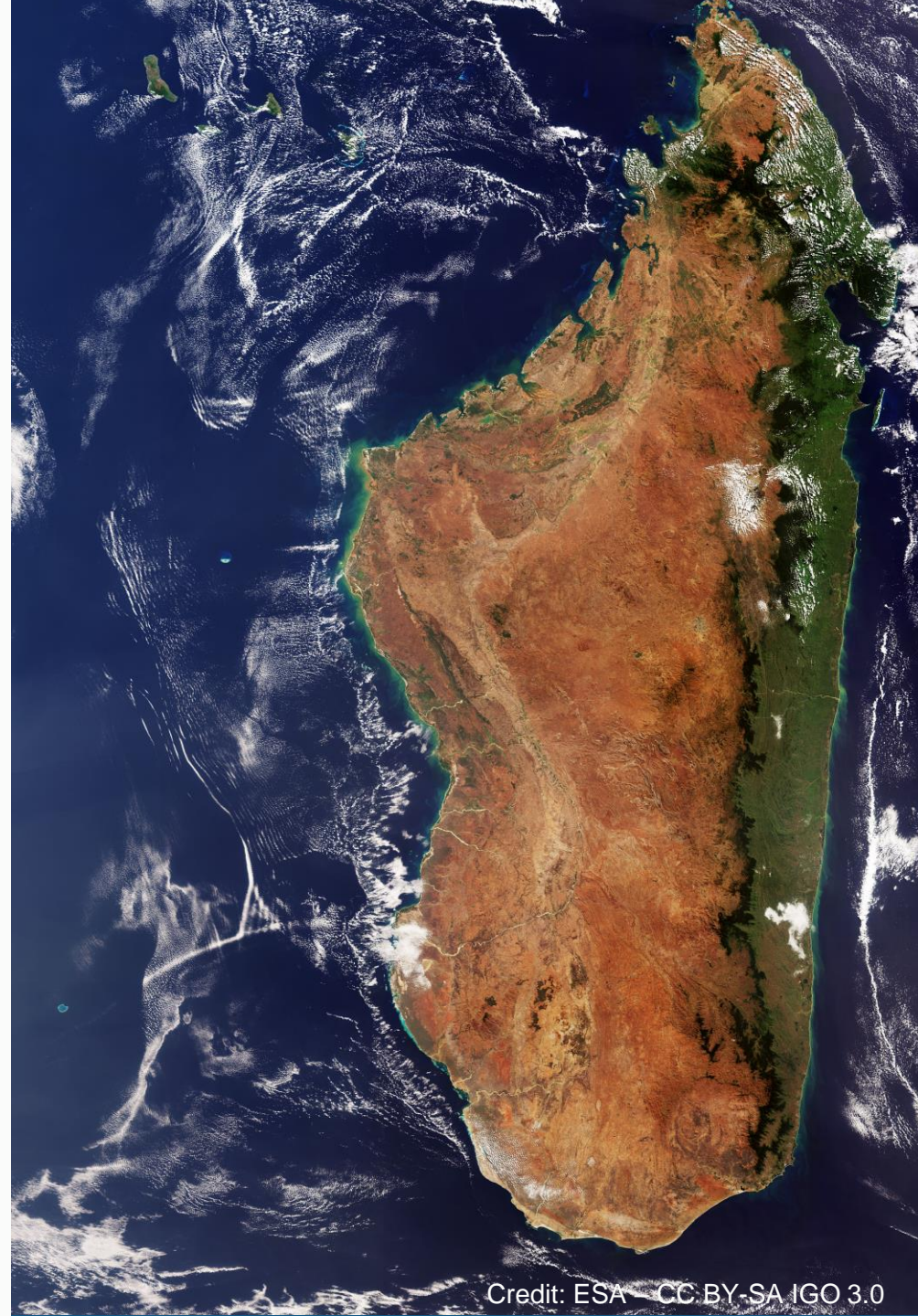




PASS-SWIO

Portagauge And Satellite Sea level monitoring system for the Southwest Indian Ocean



Webinar objectives



- Introduce the PASS-SWIO project
- Discuss impacts of sea level rise for Madagascar
- Describe the Portagauge
- Provide context on sea level variability and measurements
- Introduce user requirements questionnaire

	Time BST/EAT	Item	Speaker
1	1200/1400	Welcome - Introductions	Amani Becker
2	1210/1410	Overview of the PASS-SWIO project	Amani Becker
3	1225/1425	Impacts of Sea Level Rise in Madagascar	Haja Razafindrainibe
4	1240/1440	Measuring Sea Level - Tide Gauges and Satellites	David Cotton
5	1255/1455	Description of the Portagauge	Geoff Hargreaves and Dave Jones
6	1310/1510	Introduction to Sea Level Variability in the context of the SWIO	Angela Hibbert
7	1325/1525	Introducing the questionnaire	David Cotton
8	1330/1530	Close	

There will be time for questions after each presentation

The PASS-SWIO Team



**National
Oceanography
Centre**



Amani
Becker



Dave
Jones



David
Cotton



Rhino
Rajaonarivony



Angela
Hibbert



Geoff
Hargreaves



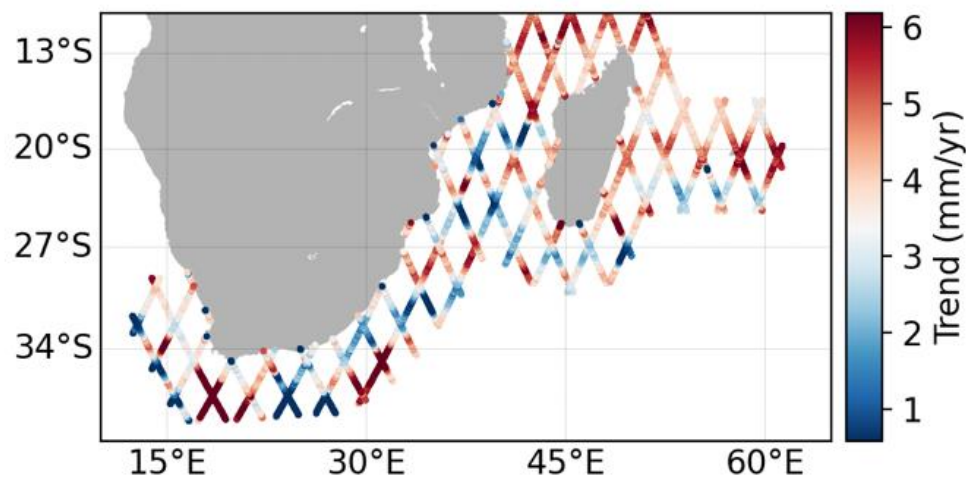
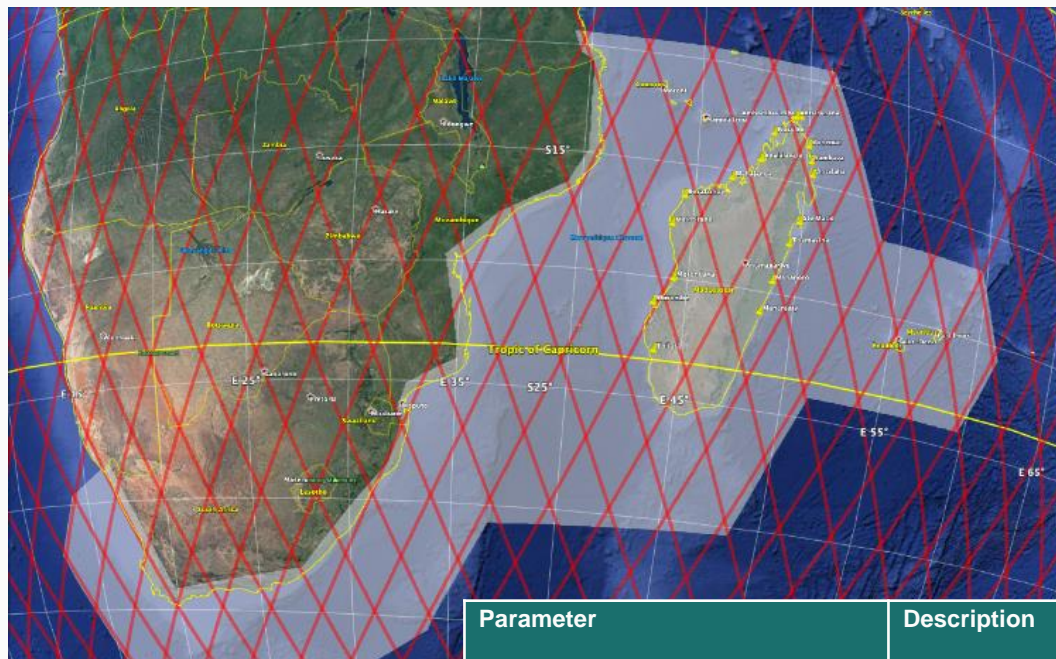
Haja
Razafindrainibe



Simon
Williams

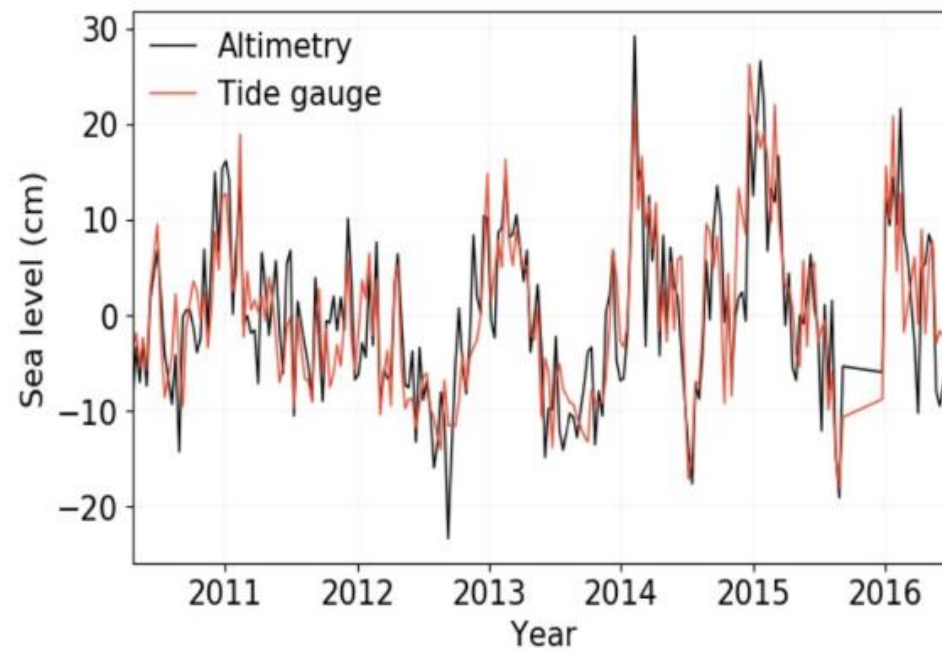
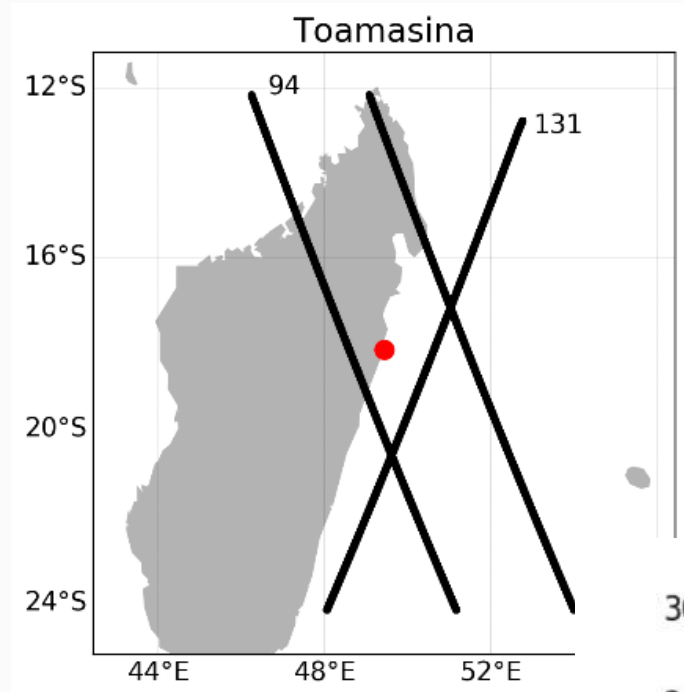
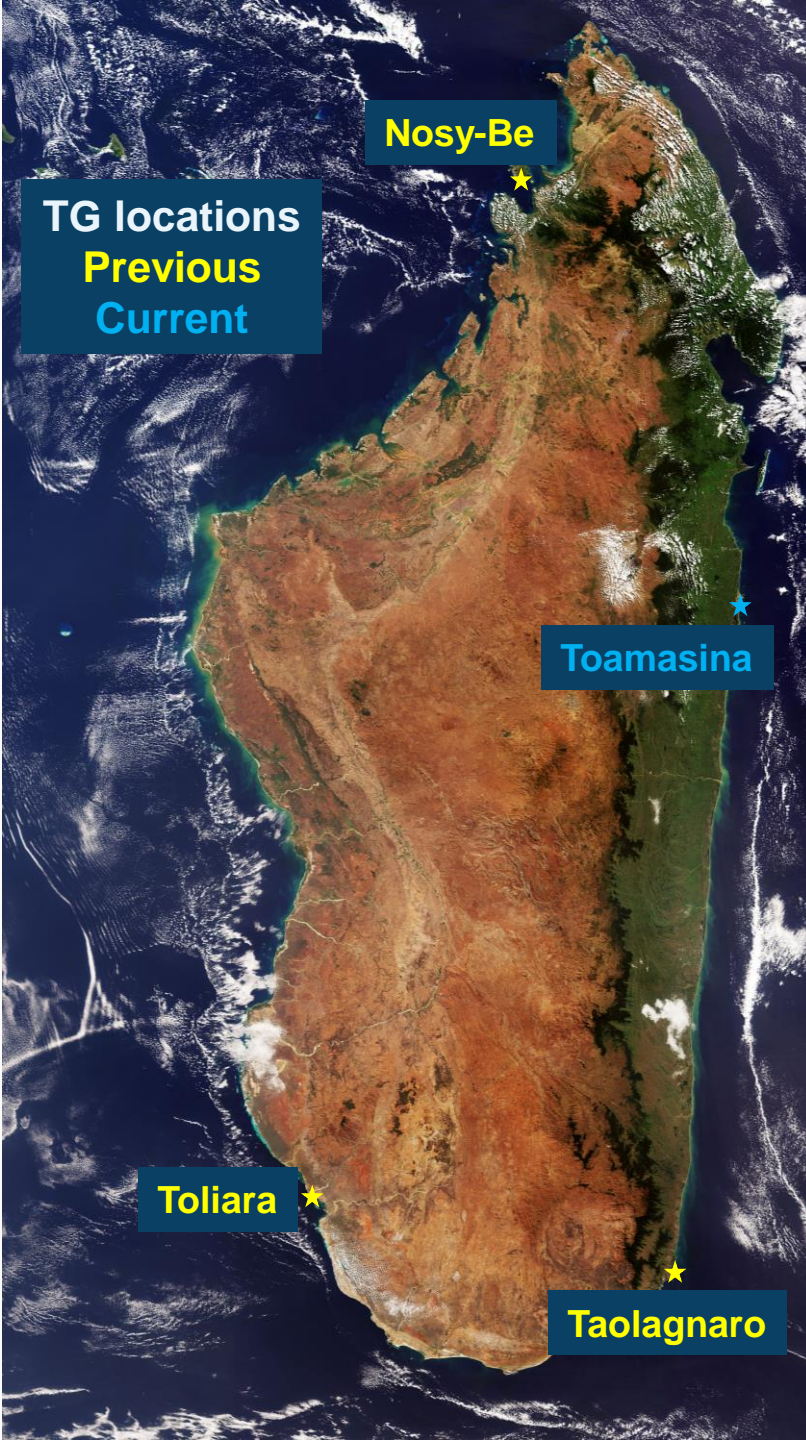


Francisco
Mir Calafat



Sea level trend (mm/yr), Jason 1, 2 and 3 (2002-20)

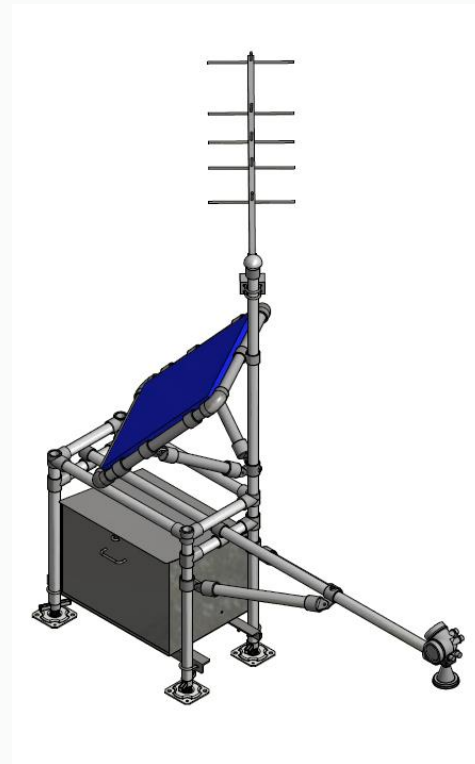
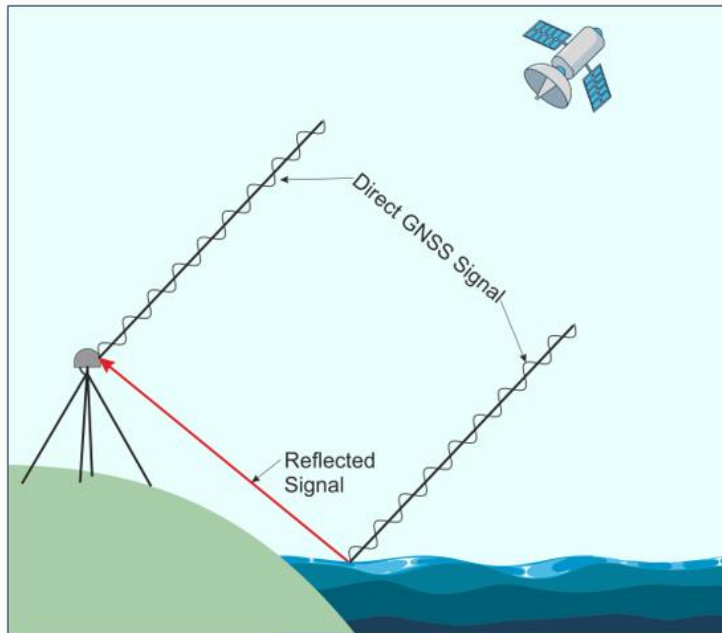
Parameter	Description	Time Coverage	Satellites
Sea Level	Along track data from the NOC coastal processor, 10 day repeat	2002-2019	Jason-1, 2 and 3
Sea Level	Along track data from the NOC coastal processor, 35 day repeat.	2002-2010, 2013-2016	Envisat, AltiKa
Significant Wave Height climatologies	Monthly, 1° x 1° gridded climatologies, sourced from Globwave	1992-2019	ERS-1, ERS-2, Envisat, Topex, Jason-1, 2 and 3
Ocean Wind Speed and direction climatologies	Monthly, 0.25° x 0.25° gridded climatologies, (CMEMS)	2007-2019	Metop-A, Metop-B
Total surface current (geostrophic + Ekman)	Daily, 0.25° x 0.25°, gridded climatologies, sourced from Globcurrent	1993-2019	Envisat, Jason-1, 2 and 3
Significant Wave Height, wind speed	Near Real Time along track data	Daily updated	Jason-2 and 3, AltiKa, Sentinel-3
Wind speed and wind direction	Near Real Time data across scatterometer swath (25km resolution)	Daily updated	Metop/ASCAT-A
Total surface current (geostrophic + Ekman)	Near Real Time data, 0.25° x 0.25°	Weekly updated	Jason-2 and 3
Coastline change mapping	Annual shoreline position, shoreline change rate, forecast shoreline position for 10 and 20 years	2000-2020	Landsat 7 and 8



PASS-SWIO Project Overview



The project aims to establish a sea level monitoring system for Madagascar based on the installation and deployment of a low-cost relocatable tide gauge (Portagauge), which uses GNSS-IR technology, combined with the analysis of satellite altimeter sea level data to provide validation and wider scale knowledge on sea-level variability.



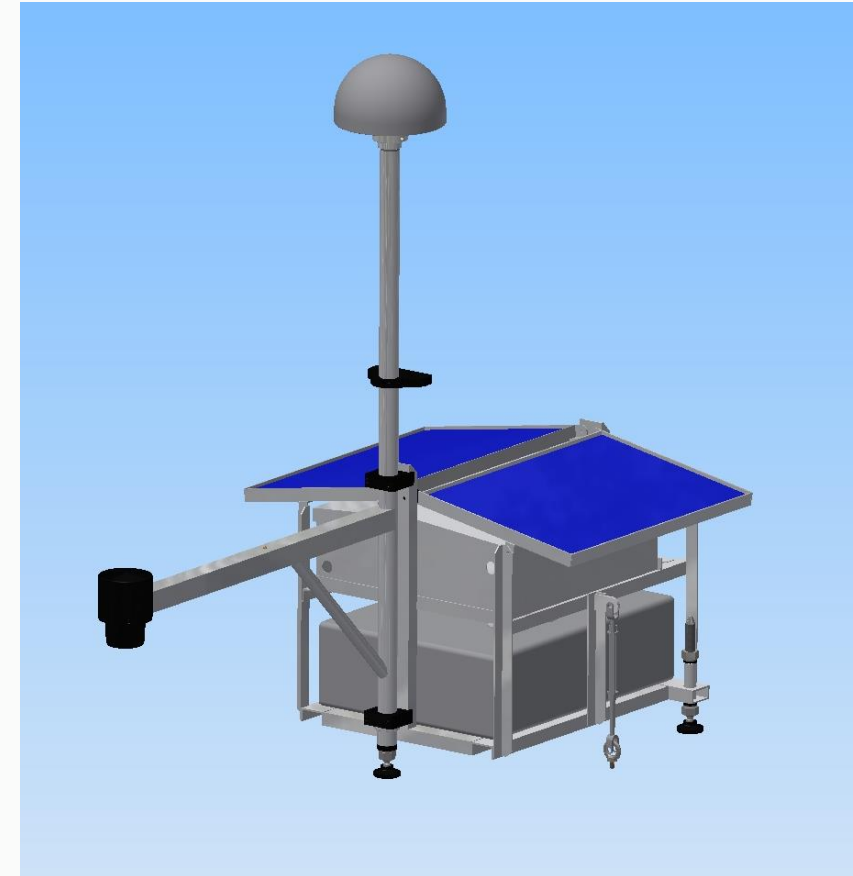
Portagauge

Campaign measurements can be used to:

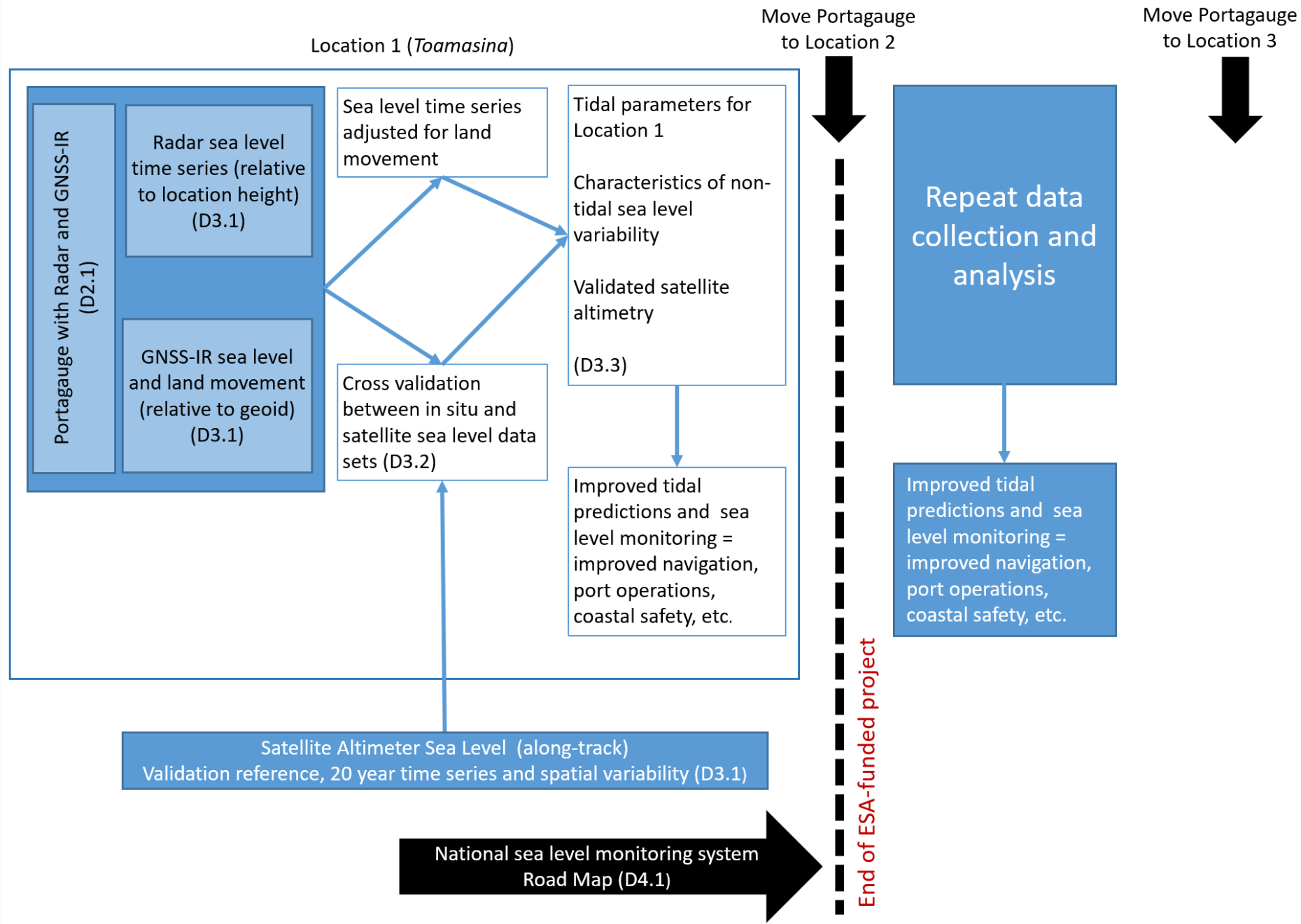
- validate models
- monitor and/or predict tides, waves and surges
- estimate design levels for port redevelopments
- check data from permanent tide gauges

Portagauge connects altimetry data to physical datums on land

Can be used to establish long-term sea level trends without a 30-40 year tide gauge record



Mark 2 Portagauge design for Madagascar



TG locations

Previous

Current

Proposed

Nosy-Be



Toamasina



Manakara



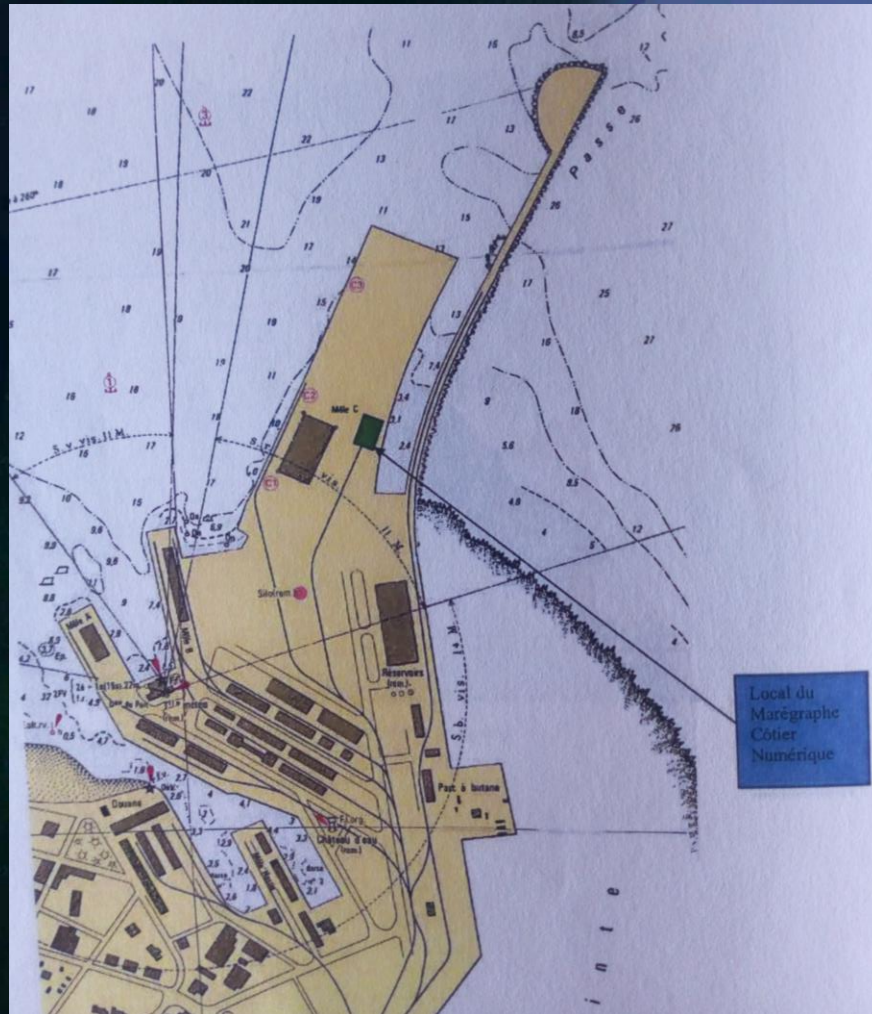
Morondava



Toliara



Taolagnaro





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Recap of project stages



Design and Build
Portagaugue

Ship Portagaugue
to Madagascar

Installation and operation
training at Toamasina

Data collection
portagaugue / tide gauge / satellite

Data analysis and
reporting

Training

Stakeholder
consultation

Roadmap

Deployment at new location



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Questions?



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