

Tide Gauge Task Team

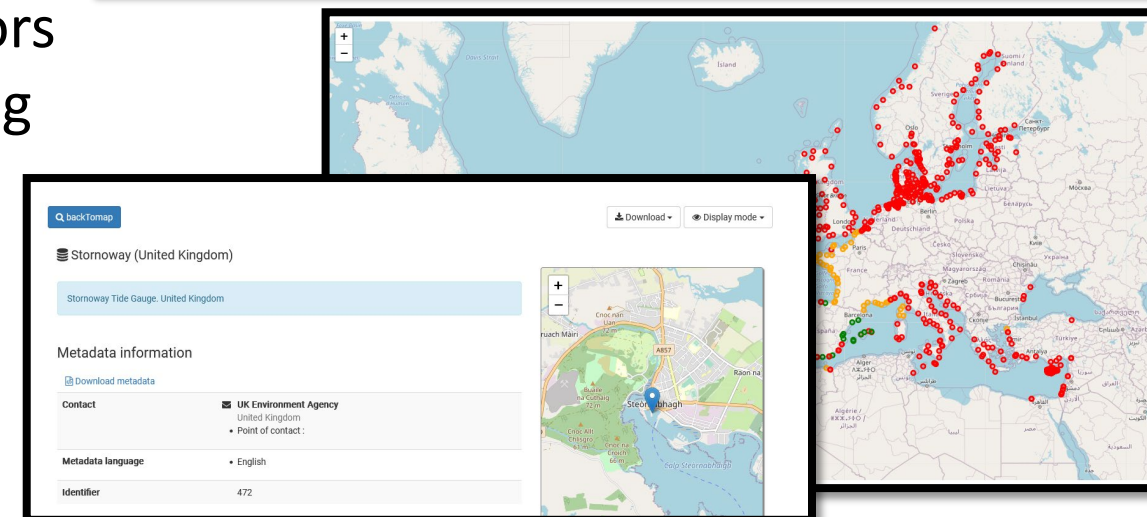
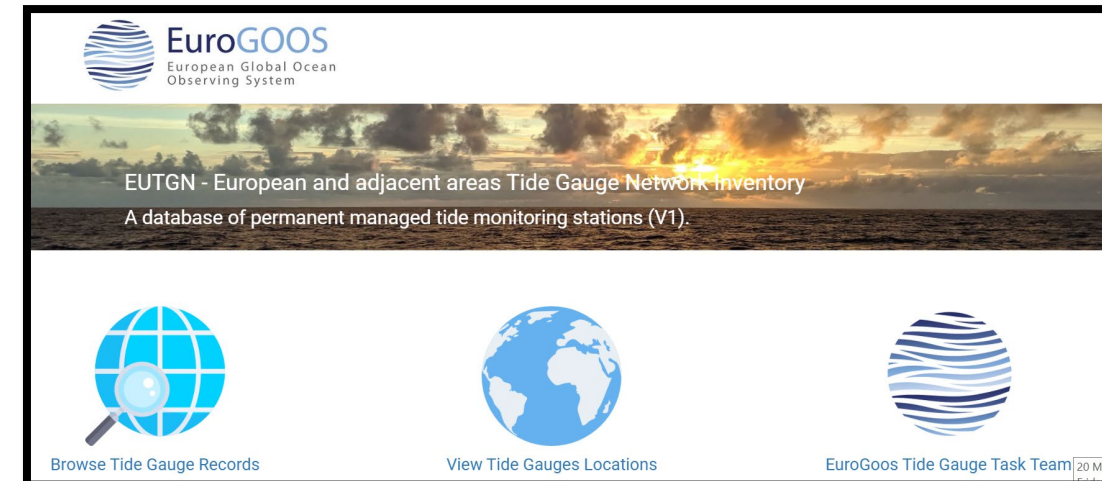
EuroGOOS General Assembly
24-25 May 2022

Angela Hibbert, Elizabeth Bradshaw, Claire Fraboul
With thanks to Begoña Pérez Gómez (ex-chair)

Strategy 2030: main achievements (last year)

Tide Gauge Inventory (<http://eutgn.marine.ie/>)

- Led by the Marine Institute, Ireland
- Funded by the EuroSea project
- A online live, managed metadata catalogue to register all permanent tide gauges deployed in European and adjacent coastlines
- Released for population by tide gauge operators
- Supplements tide gauge data portals, providing metadata to ensure that data are fit for users' purposes
- Supports goals of stimulating communities of practice and co-ordination and integration of observing systems

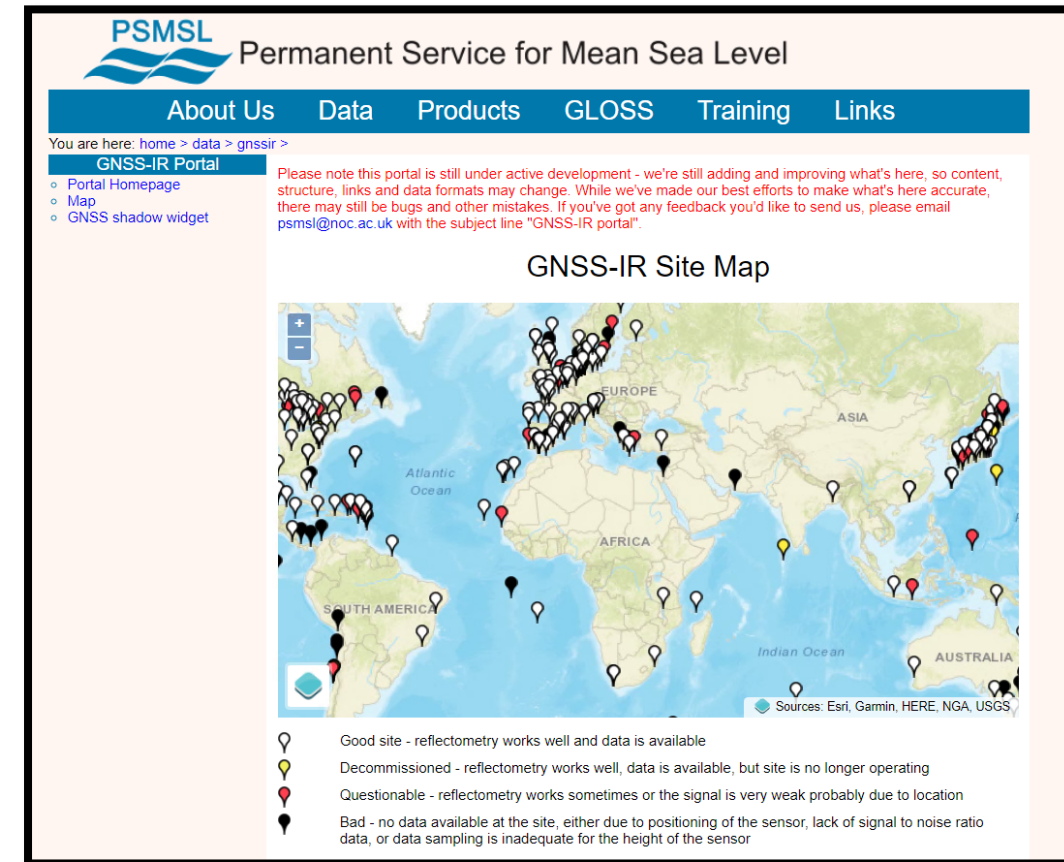


Strategy 2030: main achievements (last year)

New sea level data portal

(<https://psmsl.org/data/gnssir/map.php>)

- Led by the National Oceanography Centre (UK)
- Funded by the EuroSea project
- Uses global navigation satellite system-interferometric reflectometry (GNSS-IR), which allows sea level to be measured from systems designed for vertical land motion
- Contains data from almost 400 GNSS stations globally
- Some records extend back 15 years
- Multi-purpose instrumentation supports co-ordination and integration of observing systems



PSMSL Permanent Service for Mean Sea Level

About Us Data Products GLOSS Training Links

You are here: home > data > gnssir >

GNSS-IR Portal

- Portal Homepage
- Map
- GNSS shadow widget

Please note this portal is still under active development - we're still adding and improving what's here, so content, structure, links and data formats may change. While we've made our best efforts to make what's here accurate, there may still be bugs and other mistakes. If you've got any feedback you'd like to send us, please email psmsl@noc.ac.uk with the subject line "GNSS-IR portal".

GNSS-IR Site Map

Sources: Esri, Garmin, HERE, NGA, USGS

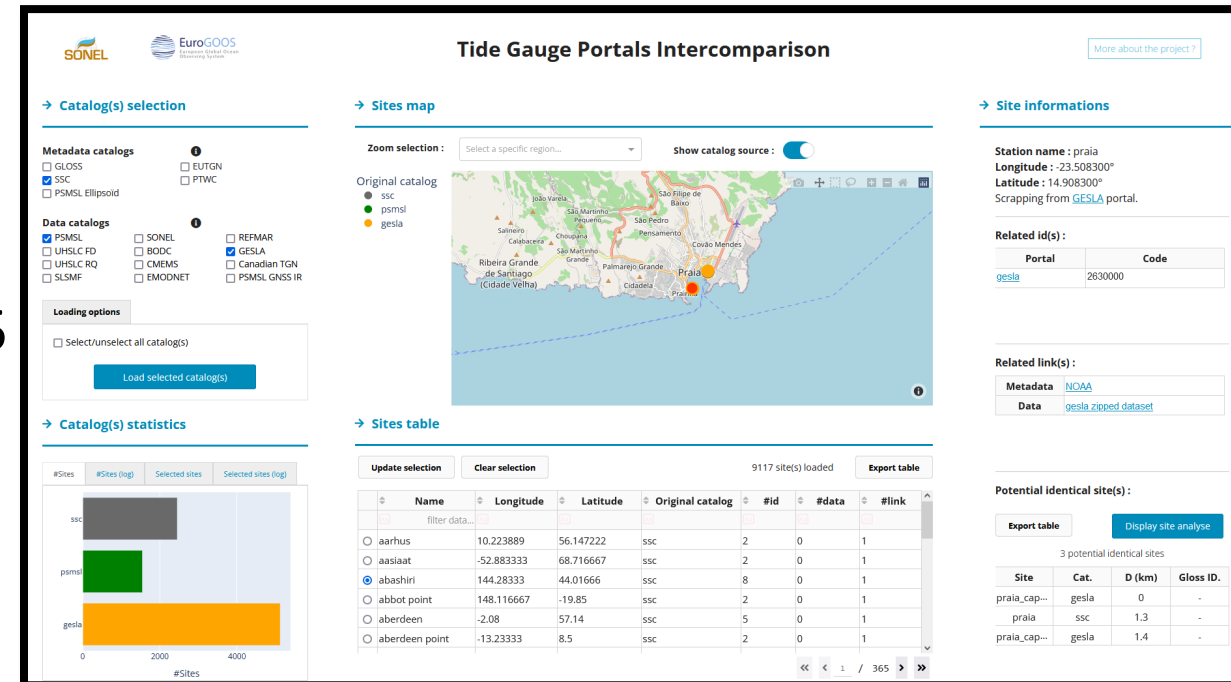
- 📍 Good site - reflectometry works well and data is available
- 🟡 Decommissioned - reflectometry works well, data is available, but site is no longer operating
- 🔴 Questionable - reflectometry works sometimes or the signal is very weak probably due to location
- ⬛ Bad - no data available at the site, either due to positioning of the sensor, lack of signal to noise ratio data, or data sampling is inadequate for the height of the sensor

Strategy 2030: main achievements (last year)

Analysis of gaps/duplicity of data portals

<https://www.sonel.org/tgcat/>

- Led by CNRS-SONEL
- Funded by the EuroSea project
- Cross-comparison of 12 data portals and 5 metadata catalogues
- IOC/UNESCO Sea Level Station metadata catalogue is the most complete
- Large variability data portal content. Few stations appear in all portals and some appear in one portal only.
- Content of data portals and metadata catalogues summarised in a web-based tool



Tide Gauge Portals Intercomparison

→ **Catalog(s) selection**

Metadata catalogs

- GLOSS
- SSC
- PMSL Ellipsoid
- EUTGN
- PTWC

Data catalogs

- PMSL
- UHSLC FD
- UHSLC RQ
- SLSMF
- SONEL
- BODC
- CMEMS
- EMODNET
- REFMAR
- GESLA
- Canadian TGN
- PMSL GNSS IR

Loading options

Select/unselect all catalog(s)

→ **Catalog(s) statistics**

#Sites | #Sites (log) | Selected sites | Selected sites (log)

Bar chart showing the number of sites for each catalog: SSC (dark grey), PMSL (green), GESLA (orange).

→ **Sites map**

Zoom selection: Select a specific region... Show catalog source:

Original catalog: ssc, pmsl, gesla

→ **Sites table**

Update selection | Clear selection | 9117 sites loaded | Export table

Name	Longitude	Latitude	Original catalog	#id	#data	#link
aarhus	10.223889	56.147222	ssc	2	0	1
aaslaat	-52.883333	68.716667	ssc	2	0	1
abashiri	144.28333	44.01666	ssc	8	0	1
abbot point	148.116667	-19.85	ssc	2	0	1
aberdeen	-2.08	57.14	ssc	5	0	1
aberdeen point	-13.23333	8.5	ssc	2	0	1

→ **Site informations**

Station name: praia
Longitude: -23.508300°
Latitude: 14.908300°
Scrapping from GESLA portal.

Related id(s):

Portal	Code
gesla	2830000

Related link(s):

Metadata: NOAA
Data: gesla zipped dataset

Potential identical site(s):

Export table | Display site analyse

3 potential identical sites

Site	Cat.	D (km)	Gloss ID.
praia_cap...	gesla	0	-
praia	ssc	1.3	-
praia_cap...	gesla	1.4	-

- Allows operators to address gaps and duplicities in networks
- Supports co-ordination and integration of observing systems

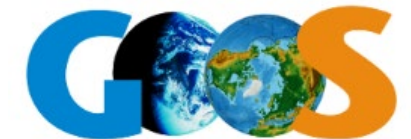
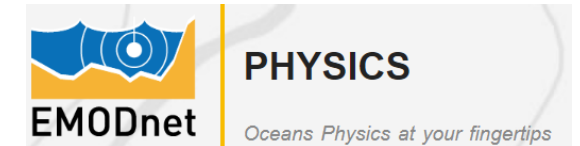
Strategy 2030: main achievements (last year)

CMEMS Sea Level Reprocessed product (due Nov 22)

- TGTT members are part of the team working on this
- Canvassed and summarised community opinions on the needs of coastal and local modellers in relation to tide gauge data to inform this work
- Supports integration of ocean observing systems and stimulating communities of practice

What are the roles of the TT in the European Landscape?(2022-2027)

- Tide gauges are long-established technology, so there are multiple national, regional and global stakeholders and networks, with varied applications and inconsistent data processing and distribution methods
- Primary governing body is IOC's GLOSS (Global sea level observing system), which pre-dates European governance bodies
- National operators often are not linked to their IOC country representatives
- Commercial operators not obliged to share data or comply with standards
- We do not aim to replace existing governance structures, but to improve co-ordination/collaboration to address the above



What are the roles of the TT in the European Landscape?(contd)

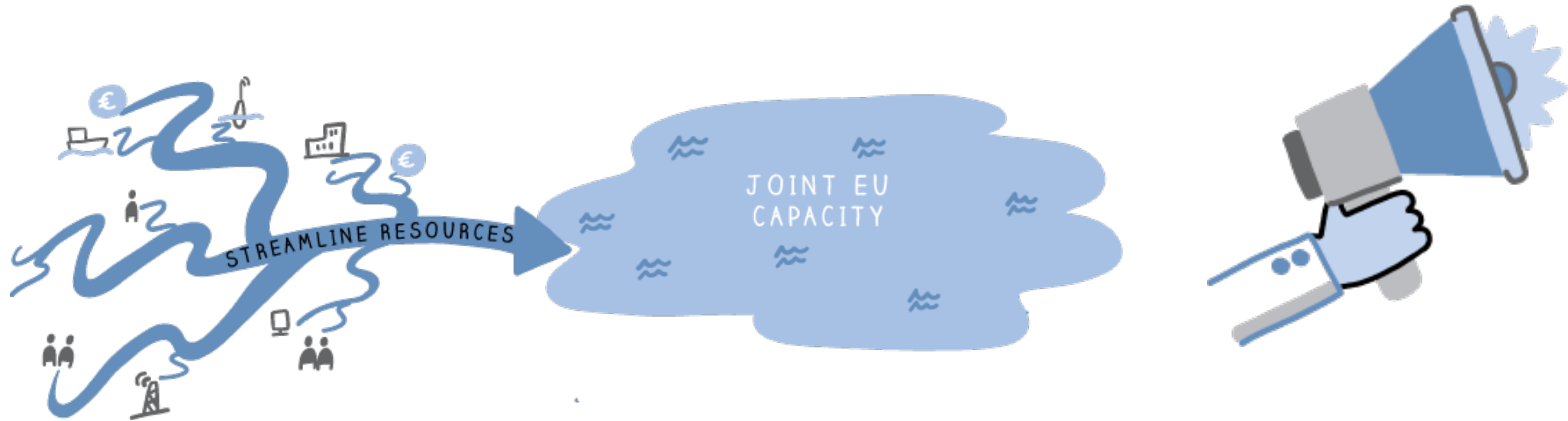
TGTT actions to improve co-ordination and collaboration:

- Revisit and populate the metadata inventory tool in cooperation with network operators and Copernicus Marine Service and EMODnet physics
- Promote the use of the data gaps/duplicities tool to encourage TG operators to address the issues (infill gaps and eliminate duplicities)
- Work with GLOSS, the International GNSS Service (IGS) and GNSS data aggregators to improve the interoperability of the GNSS-IR sea level portal
- 2nd EuroSea Tide Gauge Network Workshop (Spring 2023) focused on quality control and data processing, including training
- Work with global/regional data centres to implement recommendations of TG data flow strategy
- Identify information gaps to incorporate into Ocean Best Practices



How are you linking up with RI and EOOS over the next five years? (2022-2027)

- TGTT will build on already-established links to satellite altimetry and modelling communities to develop mutually helpful strategies, infrastructure (e.g. GNSS-IR for cal/val), data standardisation (ERDAP servers)
- TGTT is building links with DATAMEQ WG on which we have representation and continues to work via TGTT Technical WG on site/station definition, unique IDs and minimum metadata/common vocabularies in a European and global context
- The TGTT has representatives in the following ROOS:
NOOS, MONGOOS, BOOS and will work to identify a representative in **IBIROOS**
- TGTT draws its membership from/has links to national operators, EMODnet, CMEMS, JERICO-RI as well as GLOSS data centres. We are participating in and organising mechanisms to improve integration and co-ordination of technology, infrastructure and data provision between all of these stakeholders in a European and global context



Chair: Angela Hibbert, National Oceanography Centre (UK),
Co-chairs: Elizabeth Bradshaw, British Oceanographic Data Centre (UK),
Claire Fraboul, SHOM (France)

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