GOOS

OceanSITES
Taking the pulse of the global ocean

OceanSITES
The global network for fixed-point long time series observations
co-chairs: **Raquel Somavilla**[1] (raquel.somavilla@ieo.csic.es), **Johannes Karstensen** (jkarstensen@geomar.de)[2]

Obectives

The global network of long-term Eulerian climate time series OceanSITES is composed from a distributed observation efforts funded by many nations. The locations are determined by observational needs and do not aim for an equally distributed sampling across the global.

OceanSITES was established in 1999 out of the need to globally coordinate climate time-series observation efforts.

OceanSITES fills a unique space in the Global Ocean and Global Climate Observing System (GOOS/GCOS) by promoting the collection, delivery and use, of high-quality data from long-term, high-frequency multidisciplinary observations that provide multidisciplinary reference data for climate indicator creation.

Is operated by the community for the community with the vision to advance towards interoperable FAIR & CARE multidisciplinary ocean climate records that enable users deriving information on climate change, ocean forecast, and ocean health

Example for a dashboard that is showing metrics relevant for time series stations (note - this example is just picked arbitrarily from the internet and not to directly transfer)
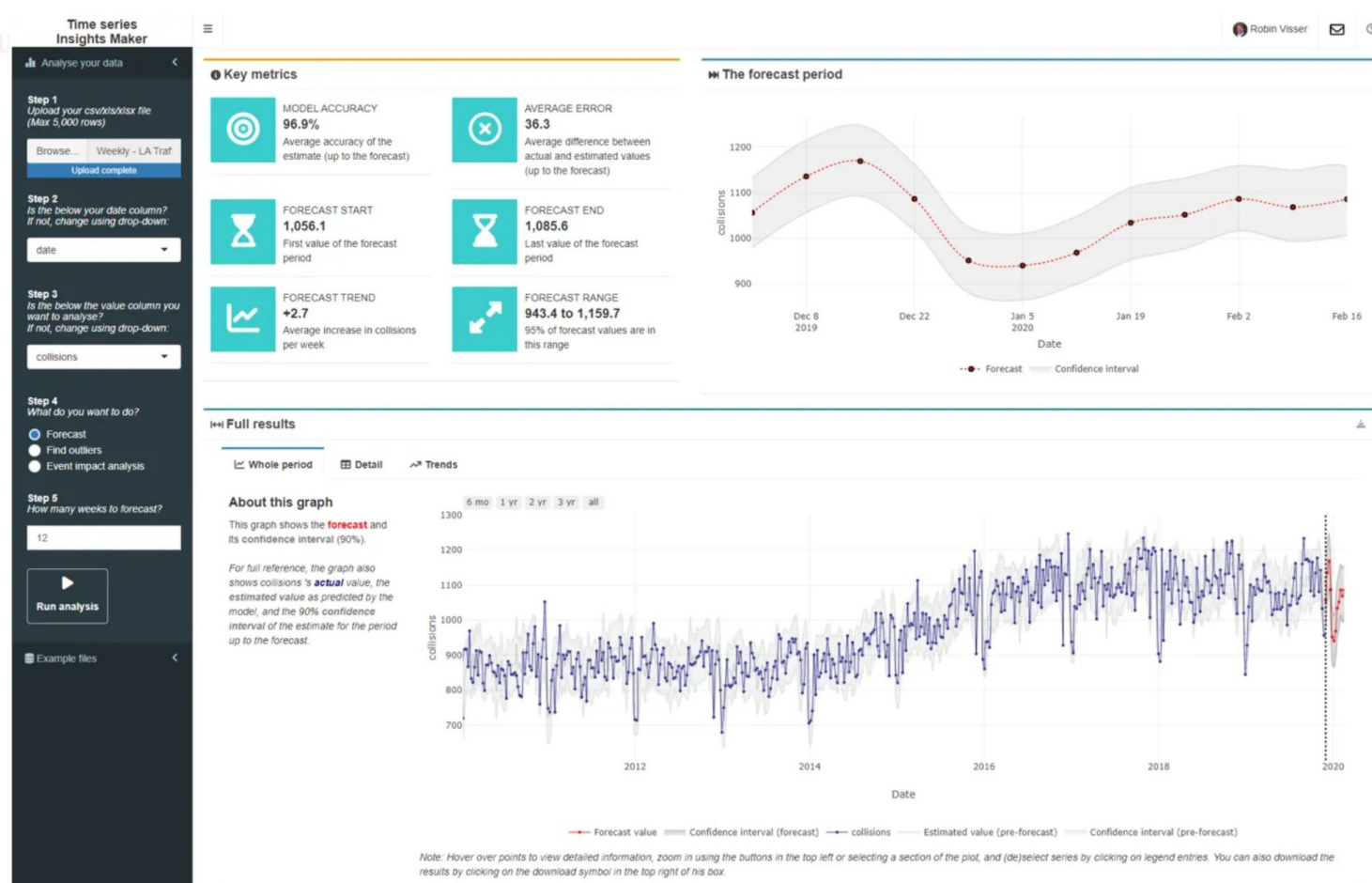

Future plans and Opportunities

o   Improve OceanSITES service to science and other stakeholder communities (e.g. indicator time series for climate services)
o   Redesign of oceansites.org website (incl. metadata submission interface and time series/map tool that addresses OceanSITES needs)
o   Serving data products (time series) and software to stakeholder
o   Work on federated data systems via pilots (e.g. NSF Ocean Observation Initiative, IMOS,
o   Continue proactive effort for interaction with modelling community interaction: merging of deep temperature long time-series. Reference sites for machine learning / validation.

Status observations map

OceanOPS dashboard is not prepared for showing the information that is relevant for climate time series
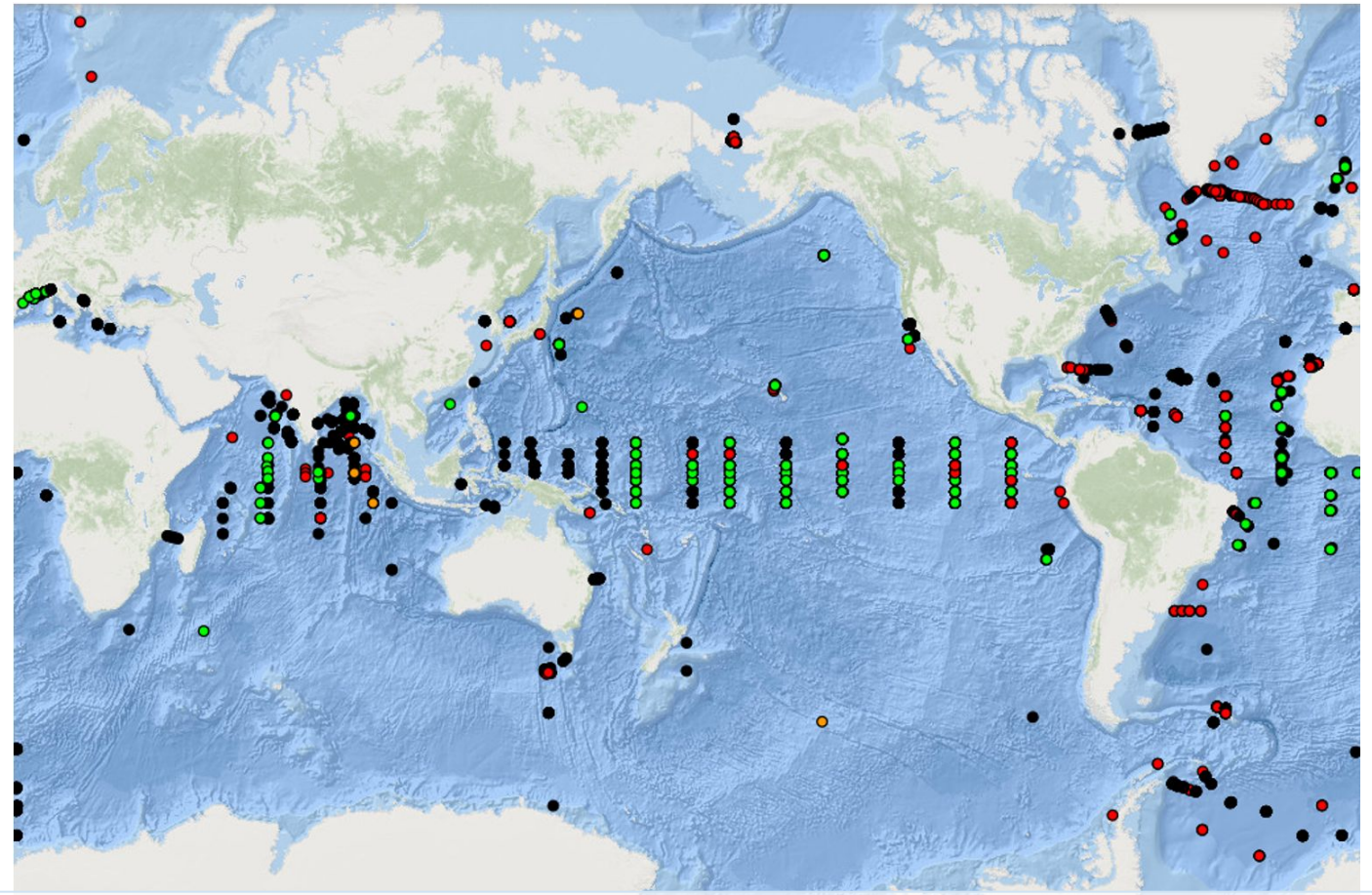
Highlighted successes

o   Completing new deployments
o   Examples for climate time series: STRATUS 24 years, KEO 21 years, WHOTS 20 years, 53N 28 years, K1 28 years, TS at Denmark Strait 28 years, PAPA (18 years, extending 30-year OWS), IO/m-TRITON 24 years, GIFT 21 years.
o   Progress on OBPS Mature practices endorsement
o   Synergies & Strategies: On-going relationship with METS and SMART cables,
o PCO_2 measurements as contributions to SOCONET at selected sites (e.g. WHOTS, STRATUS), ground truth for satellite measurements (cal/val), test bed for cross-calibration for meteorological measurements (wavegliders and saildrone), data logger/telemetry systems.
o   Synergies with modelling and reanalysis communities:
    o   Co-organization of the EGU science session: 'Climate variability and extremes through ocean, atmosphere and ice interactions: from model simulations to long time series observations'
    o   Attendance to the 6th WCRP International Conference on Reanalysis (ICR6), Japan 28 October-1 November 2024 Ocean-Predict UN Decade Program assimilation of OceanSITES mooring data
    o   Stratus and WHOTS withhold surface meteorology from assimilation and provide independent time series to assess models and reanalyses; delayed mode exchange with ECMWF

Challenges and concerns

o   Cost of Service Level Agreement
o   Data & metadata access and exchange with OceanOPS:
o   Transform to federated data system
o   Motivate PIs to update metadata.
o   Some sites are at risk, e.g., Greece (due to funding issues), Italy (due to legal issues), and maybe other countries in the future even for political reasons?
o   Non-functional and obsolete website

Questions OCG:
- Can OCG develop a strategy for creating a cross-platform ocean data reference network?
- Can we derive via OCG/OceanOPS the synergy in cruise logistics (many cruises are multipurpose - Argo, drifter, glider, mooring deployment on a GO_SHIP cruise)?