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The Permanent Service for Mean Sea Level (PSMSL): changing services for changing seas

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Changing sea levels will have a major impact on human life over the next 100 years. We need mean sea level data to study climate change, the impact of human activities on densely populated areas and the economic impacts of sea level rise, and to plan coastal engineering. The Permanent Service for Mean Sea Level (PSMSL) is the global databank for long-term mean sea level data.

The PSMSL operates under the auspices of the International Council for Science (ICSU), is a regular member of the ICSU World Data System and is associated with the International Association for the Physical Sciences of the Oceans (IAPSO) and the International Association of Geodesy (IAG). The PSMSL continues to work closely with other members of the sea level community through the Intergovernmental Oceanographic Commission's Global Sea Level Observing System (GLOSS).

Following an analysis of the international community and our users, we propose growth areas to focus on, including new products and services. The primary goal of the PSMSL is to expand the database and fill gaps in the observational network by the use of novel techniques (e.g. automatic quality control of tide gauge data) and technologies (e.g. GNSS reflectometry). We will continue our core mission of processing global mean sea level data and plan to create an archive for and deliver GNSS reflectometry data. We will provide training and automatic processing software to tide gauge operators and scientists.

In a world of big data, we can no longer control what happens to our distributed product. We must make sure what we provide is properly and fully described. We need to be able to produce a full audit trail showing where data (and metadata) came from and, if we have updated records, why. This will in part be achieved by producing an annual digital object identifier (DOI) for the PSMSL dataset and beginning to digitise the paper records containing site metadata, correspondence, adjustments etc. We will lead the development of standards for sea level data and metadata and work towards making our data findable, accessible, interoperable and reusable (FAIR).