

The International Quality Controlled Ocean Data Base (IQuOD) Initiative

Presented to U.S. CLIVAR POS panel by Janet Sprintall (SIO) on behalf of the IQuOD Steering Committee (co-chairs: Rebecca Cowley, CSIRO Marine and Atmospheric Research, Australia and Catia Domingues, ACE CRC, Australia)

Understanding climate variability and change is the most challenging application of subsurface ocean observations, as it demands the highest data quality, completeness and consistency. In particular, long-term historical records are required to put modern changes in the context of past changes. However the global historical database still contains a relatively large fraction of biased, duplicated and substandard quality (e.g., lack of original and full-resolution) data and metadata that can confound climate-related applications. There is an urgent need to maximize the full potential of an irreplaceable collection of tens of millions of historical temperature (and salinity) profiles – collected since the 1900s (or before) and worth tens of billions of dollars – so that this data can be suitably applied to a vast range of climate-related research, applications and services of societal benefit.

To overcome this difficulty, a new internationally-coordinated effort – [IQuOD](#) – is being organized by the oceanographic community (including International CLIVAR GSOP members), along with experts in data quality and management, and in consultation with end users (e.g., climate modellers, metrics panel) and the broader climate-related community. The ultimate goal of the IQuOD initiative is to produce and to freely distribute the highest quality, complete and consistent historical subsurface ocean temperature global database along with (intelligent) metadata and assigned uncertainties. This goal will be achieved by developing and implementing an internationally-agreed framework.