



Putting Ocean Observations on solid Footing

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In analogy to all other environmental science domains, ocean research is strongly dependent on reliable observation methods that are able to deliver high quality data over long periods of time. Increasingly, operators of ocean observing systems are becoming aware that standardized procedures for taking measurements have to be developed to ensure that the collected information is fulfilling an appropriate set of quality standards. A number of initiatives are currently running and have been organized in the past to initiate a process in that direction. There is QARTOD, the U.S. IOOS[®] project to define best practices in real-time quality control, and the GO-SHIP program that is promoting standard operating procedures. Lately, the EC funded project AtlantOS started another initiative that aims at collecting the state of the art in Europe in regard to QA/QC procedures used in ocean observing networks that also summarizes the outcomes from other European projects like FIXO₃, EMSO, EuroARGO and others. Still, an urgent need remains to harmonize existing best practices and standards to allow for a better inter-comparability of ocean observations. What route shall be taken? Companies prefer to use the instrument of standardization, in particular those developed by ISO. In addition, other standardization bodies such as the Open Geospatial Consortium can contribute significantly to this endeavour. It is noteworthy that these initiatives are concealing complex processes in regard to how agreement between conflicting views on best practices are resolved to finally generate a standard document that reflects the achieved consensus. In ocean sciences this process is hampered by the diversity of parameters that have to be observed and the multitude of different methodologies. One of the ideas to make progress is to use templates from other domains like for instance the conceptual framework for quality assurance established within WMO (<https://www.wmo.int/pages/prog/arep/gaw/qassurance.html>) Ultimately, success depends on the overall acceptance of all relevant stakeholders to adopt recommendations provided by these initiatives. This will be a topic of discussion for the years to come.