



Common Technologies for Environmental Research Infrastructures in ENVRIplus

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Environmental and geoscientific research infrastructures (RIs) are dedicated to distinct aspects of the ocean, atmosphere, ecosystems, or solid Earth research, yet there is significant commonality in the way they conceive, develop, operate and upgrade their observation systems and platforms. Many environmental RIs are distributed network of observatories (be it drifting buoys, geophysical observatories, ocean-bottom stations, atmospheric measurements sites) with needs for remote operations. Most RIs have to deal with calibration and standardization issues. RIs use a variety of measurements technologies, but this variety is based on a small, common set of physical principles. All RIs have set their own research and development priorities, and developed their solution to their problems – however many problems are common across RIs. Finally, RIs may overlap in terms of scientific perimeter. In ENVRIplus we aim, for the first time, to identify common opportunities for innovation, to support common research and development across RIs on promising issues, and more generally to create a forum to spread state of the art techniques among participants.

ENVRIplus activities include 1) measurement technologies: where are the common types of measurement for which we can share expertise or common development? 2) Metrology : how do we tackle together the diversified challenge of quality assurance and standardization? 3) Remote operations: can we address collectively the need for autonomy, robustness and distributed data handling? And 4) joint operations for research: are we able to demonstrate that together, RIs are able to provide relevant information to support excellent research.

In this process we need to nurture an ecosystem of key players. Can we involve all the key technologists of the European RIs for a greater mutual benefit? Can we pave the way to a growing common market for innovative European SMEs, with a common programmatic approach conducive to targeted R&D? Can we develop a common metrological language adapted to the observation of our environment? We aim at creating a space for exchange on the “hardware” issues of our networks of observatories, a forum that allows fast transmission across RIs of best practices and state of the art technology, a laboratory for joint research and co-development, where research infrastructures and their communities join efforts on well-identified objectives.