



## **Common solutions for power, communication and robustness in operations of large measurement networks within Research Infrastructures**

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European Environmental Research Infrastructures (RI) frequently comprise in situ observatories from large-scale networks of platforms or sites to local networks of various sensors. Network operation is usually a cumbersome aspect of these RIs facing specific technological problems related to operations in remote areas, maintenance of the network, transmission of observation values, etc.. Robust inter-connection within and across these networks is still at infancy level and the burden increases with remoteness of the station, harshness of environmental conditions, and unavailability of classic communication systems, which is a common feature here. Despite existing RIs having developed ad-hoc solutions to overcome specific problems and innovative technologies becoming available, no common approach yet exists. Within the European project ENVRIplus, a dedicated work package aims to stimulate common network operation technologies and approaches in terms of power supply and storage, robustness, and data transmission. Major objectives of this task are to review existing technologies and RI requirements, propose innovative solutions and evaluate the standardization potential prior to wider deployment across networks. Focus areas within these efforts are: improving energy production and storage units, testing robustness of RI equipment towards extreme conditions as well as methodologies for robust data transmission. We will introduce current project activities which are coordinated at various levels including the engineering as well as the data management perspective, and explain how environmental RIs can benefit from the developments.