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A European vision for hydrological observations and experimentation

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eLTER RI – A new European Research Infrastructure addressing today’s environmental challenges – a new perspective for European hydrological research

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We live in a world of rapid social, economic and ecosystem change, facing major environmental challenges such as global warming, biodiversity loss and pressures on natural resources. Addressing these topics requires world-class ecosystem research by a well-connected, extensive community of experts, supported by advanced sites and facilities, openly shared and easily accessible data and capacity building programs. This is the goal of the Integrated European Long-Term Ecosystem, critical zone and socio-ecological system Research Infrastructure (eLTER RI).

eLTER RI will adopt a fundamentally systemic approach to observe and analyse the environmental system, encompassing biological, geological, hydrological and socio-ecological perspectives. It will be the first research infrastructure capturing and analysing holistically the integrated impacts of climate change alongside other pressures on a wide variety of European ecosystems. Ca. 200 eLTER research sites will provide a wide scale and systematic coverage of major European terrestrial, freshwater and transitional water ecosystem. eLTER RI will allow in-situ, co-located gathering of Essential Variables ranging from bio-physico-chemical to biodiversity and socio-ecological data. Ecosystem change caused by long-term pressures and short-term pulses will be investigated in a nested design from the local to the continental scale. With the huge number of in-situ sites and platforms and the harmonized and standardized observation concept, the eLTER RI offers outstanding new perspectives for hydrological research in Europe.

One of the major aims of long term ecosystem monitoring and research is to provide quality controlled and reliable data to support scientific analyses and enable input for designing environmental policies and assessing their impacts. Both the concept and in-situ design as well as the basic architectures and tools of the eLTER RI to support data providers and data users will be presented.