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ENVRI-Hub-NEXT, the open-access platform of the environmental sciences community in Europe

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Easy and fast access to reliable, long-term, and high-quality environmental data is fundamental for advancing our scientific understanding of the Earth system, including its complex feedback mechanisms, as well as for developing mitigation and adaptation strategies, for fact-based decision-making, and for the development of environment-friendly innovations. In response to the continuously growing demand for environmental scientific knowledge, the ESFRI-listed environmental research infrastructures (ENVRIs/RIs) in Europe have formed a strong community of principal producers and providers of environmental research data and services from the four subdomains of the Earth system (Atmosphere, Marine, Solid Earth and Biodiversity/Ecosystems) through the cluster projects ENVRI (2011-2014), ENVRIplus (2015-2019), and ENVRI-FAIR (2019-2023). The further integration of ENVRIs across the subdomains is considered critical for leveraging the full potential of the ENVRI cluster for integrated environmental research. This step will be taken by ENVRI-Hub NEXT.

To transform the challenging task of integrated Earth observation into a concept towards a global climate observation system, the World Meteorological Organisation (WMO) has specified a set of Essential Climate Variables (ECV) relevant for the continuous monitoring of the state of the climate. ECV datasets provide the empirical evidence needed to understand and predict the evolution of climate, guide mitigation and adaptation measures, assess risks, enable attribution of climatic events to the underlying causes, and underpin climate services. ENVRIs are critical for monitoring and understanding changes in ECVs, as has been identified by the ESFRI Strategy Working Group on Environment in their recent Landscape Analysis of the Environment Domain.

The recently finished cluster project ENVRI-FAIR has launched an open access hub for interdisciplinary environmental research assets utilising the European Open Science Cloud (EOSC). The ENVRI-Hub is designed as a federated system to harmonise subdomain- or RI-specific access

platforms and offers a user-centered platform that simplifies the complexity and diversity of the ENVRI landscape while preserving the structure of the individual RIs needed to fulfil the requirements of their designated communities. Building on the ENVRI-Hub, ENVRI-Hub NEXT aims at creating a robust conceptual and technical framework that will empower the ENVRI Science Cluster to provide interdisciplinary services that enable cross-RI exploitation of data, guided by the science-based framework of ECVs.

This presentation will summarise the status of the ENVRI-HUB and the plans for ENVRI HUB-NEXT.

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