VRE4EIC project releases software prototypes for building virtual research environments

The European H2020 research project VRE4EIC has released the Common Reference Prototype, a prototypical implementation of the Reference Architecture for Virtual Research Environments developed by the project.

NEW PRODUCTS AND TECHNOLOGIES

Researchers can access and use more and more research data in the digital age. They can use this data to obtain new insights, especially by combining data sets with other data. Various projects are already building e-Research Infrastructures to give researchers access to publicly funded research and open research data, and are developing towards Virtual Research Environments (VREs). VREs provide access to data, tools and resources from different research infrastructures, facilitate cooperation or collaboration between researchers at the same or different institutions, at the intra- and inter-institutional levels, and preserve data and other outputs.

VRE4EIC has developed a reference architecture and software components for building VREs. This software, called e-VRE, provides a comfortable, homogeneous interface for users by virtualising access to the heterogeneous data sets, software services and resources of the e-RIs (e-Research Infrastructures), and provides collaboration/communication facilities for users to improve research communication. It also has the capability of bridging across existing e-RIs.

The software components are now being released as a Canonical Reference Prototype (CRP) of the architecture, implementing most of the interfaces specified in the Reference Architecture by integrating existing open-source technologies into a scalable architecture. Specifically, Unity has been used to support the AAAI Service, and Taverna is the back-end behind the Workflow Service. Asynchronous communication, event-based, has been used to support scalability. The CRP is available online for testing, even with custom data and the source code is available for download to create a local installation.

Two VREs are already benefiting from the CRP: the European Plate Observation System (EPOS) and ENVRIplus, an H2020 project bringing together Environmental and Earth System Research Infrastructures. Both VREs have enhanced their VRE architectures by plugging some of the building blocks provided by the CRP. The enhanced EPOS VRE is using the AAAI and the Metadata Service of e-VRE, the latter is also being used by the enhanced ENVRIplus VRE. These prototypes serve the needs of two large communities of scientists, demonstrating the benefit of the VRE4EIC architecture and software.

The CRP is available online via the project website (https://www.vre4eic.eu/evre/software).

About VRE4EIC

VRE4EIC is a 3-year Horizon 2020 research & innovation action (EINFRA-9-2015) coordinated by ERCIM and carried out with partners from the Netherlands (CWI, TU Delft, EuroCRIS and UvA), Italy (CNR and INGV), and Greece (FORTH). VRE4EIC stands for a Europe-wide interoperable Virtual Research Environment to Empower multidisciplinary research communities and accelerate Innovation and Collaboration. VRE4EIC is a €4,37 million investment that has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 676247.
VRE4EIC develops a reference architecture and software components for VREs. e-VRE bridges across existing e-RIs such as EPOS and ENVRIplus, both represented in the project, themselves supported by e-Is (e-Infrastructures) such as GEANT, EUDAT, PRACE, EGI, OpenAIRE. The e-VRE provides a comfortable homogeneous interface for users by virtualising access to the heterogeneous data sets, software services and resources of the e-RIs, and provides collaboration/communication facilities for users to improve research communication. Finally, it provides access to research management/administrative facilities so that the end user has a complete research environment.

More information: [www.vre4eic.eu](http://www.vre4eic.eu)

About ERCIM GEIE
ERCIM - the European Research Consortium for Informatics and Mathematics - aims to foster collaborative initiatives within the European research community and to increase cooperation with European industry.

**Keywords**
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