EINFRA-9-2015 - e-Infrastructures for virtual research environments (VRE)

Specific challenge: There is yet considerable potential and room for development in the use of virtual research environments. The objective is to address this challenge by supporting capacity building in interdisciplinary research communities to empower researchers through development and deployment of service-driven digital research environments, services and tools tailored to their specific needs. These virtual research environments (VRE) should integrate resources across all layers of the e-infrastructure (networking, computing, data, software, user interfaces), should foster cross-disciplinary data interoperability and should provide functions allowing data citation and promoting data sharing and trust.

Scope: Each VRE should abstract from the underlying e-infrastructures using standardised building blocks and workflows, well documented interfaces, in particular regarding APIs, and interoperable components. Over time VREs will be composed of generic services delivered by e-infrastructures and domain specific services co-developed and co-operated by researchers, technology and e-infrastructure providers, and possibly commercial vendors.

The VRE proposals should clearly identify and build on requirements from real use cases, e.g. for integration of heterogeneous data from multiple sources and value-added services for computing, modelling, simulation, and data exploration, mining and visualisation, taking due account of privacy aspects. They should re-use tools and services from existing infrastructures and projects at national and/or European level as appropriate.

Where data are concerned, projects will define the semantics, ontologies, the 'what' metadata, as well as the best computing models and levels of abstraction (e.g. by means of open web services) to process the rich semantics at machine level (the so called 'how' metadata), as to ensure interoperability. They may also support proof of concept, prototyping and deployment of advanced data services and environments, and access to top-of-the-range connectivity and computing.

VREs may target any area of science and technology, especially interdisciplinary ones, including ICT, mathematics, web science and social sciences and humanities. Focusing on the ICT infrastructures needed for addressing the Societal Challenges is especially encouraged. Proposals should indicate the number of researchers they target as potential users.

This topic is complementary with topic INFRadev-4-2014/2015, as VREs integrate data, network and computing resources for interdisciplinary research communities, whereas INFRadev-4-2014/2015 addresses interoperability of services and common solutions for cluster of ESFRI and other research infrastructure initiatives in thematic areas.

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 8 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact: VREs are expected to result in more effective collaboration between researchers and higher efficiency and creativity in research as well as in higher productivity of researchers thanks to reliable and easy access to discovery, access and re-use of data. They will accelerate innovation in research via an integrated
access to potentially unlimited digital research resources, tools and services across disciplines and user communities and enable researchers to process structured and qualitative data in virtual and/or ubiquitous workspaces. They will contribute to increased take-up of collaborative research and data sharing by new disciplines, research communities and institutions.

Type of action: Research and innovation actions


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