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Exploring FAIR Open Science tools for Einstein Telescope.

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In the last decade, the concept of Open Science has gained importance: there is a real effort to make tools and data shareable among different communities, with the goal of making data and software FAIR (Findable, Accessible, Interoperable and Reusable). This goal is shared by several scientific communities, including the Einstein Telescope (ET). ET is the third generation ground-based interferometer for the detection of gravitational waves proposed by Europe, which will begin data taking in about ten years. Two projects related to ET computing were proposed and funded within the first OSCARS (Open Science Cluster's Action for Research and Society) Open Call for cascading grants: MADDEN and ETAP. MADDEN (Multi-RI Access and Discovery of Data for Experiment Networking) is focused on data distribution and management using Rucio. It has three main objectives: build a multi-RI Data Lake managed with Rucio; evaluate RucioFS, a tool to provide a POSIX-like view of the Rucio catalogue in a multi-RI environment; investigate advanced metadata querying capabilities with Rucio. ETAP (Einstein Telescope Analysis Portal) provides a complete environment for data analysis. The main objectives are: adapt and deploy the CERN ESCAPE VRE (Virtual Research Environment) at the University of Geneva and add multi-RI Rich Metadata Services from the HEP Software Foundation (HSF) and a flexible computing resource monitoring service. The projects are strongly interlinked as ETAP will use MADDEN for data management. In this talk we will describe the timeline for these projects, how they will provide input to the ET Computing Model and the current status of the work.

Significance

Rucio and the Virtual Research Analysis are tools developed for the high energy physics use case, we are evaluating their applicability and adaptability to the gravitational wave use case, within the work for the definition of the Einstein Telescope computing model.

References

https://oscars-project.eu/projects/madden-multi-ri-access-and-discovery-data-experiment-networking
https://oscars-project.eu/projects/etap-einstein-telescope-analysis-portal

Experiment context, if any

Einstein Telescope

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