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ESCAPE: a multi-science data infrastructure for the 2020s

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The ESCAPE project aims at delivering a shared solution to computing challenges in the context of the European Open Science Cloud. It targets Astronomy and Particle Physics facilities and research infrastructures and focuses on developing solutions for handling large sets of data. One key aspect of ESCAPE is prototyping and implementing a shared system for FAIR data management and, in this contribution, we will present the effort in building such data infrastructure for open science. The infrastructure will be based on the idea of the WLCG Data Lake proposal presented as evolution of the facilities and middleware in preparation for HL-LHC. It will generalize however the components to cover the use cases of other data intensive sciences on the same physical facilities. We will describe how different work packages of the project will evaluate and prototype various components of the Data Lake architecture, such as a content delivering and caching service, storage and storage orchestration, data transfer services and access to compute resources. Dedicated effort will focus also on network R&D and the evolution of the authentication, authorization and identity management layer. The project will run for three years and intends to integrate adiabatically new solutions in the Open Science Cloud by the end date of the project.

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