

Expected impact of WP2 (from the ESCAPE proposal)

- **WP2 DIOS (*Data Infrastructure for Open Science*)** will design, implement, and operate a prototype data lake – a federated data infrastructure that will form the basis of an open access data service for the ESFRI projects within the ESCAPE cluster. It will propose such a solution as a key component of a future EOSC framework. The data lake concept enables the large, reliable, national research data centres to work together to build a robust cloud-like service to curate and serve data of CTA, FAIR, EGO-Virgo, HL-LHC, JIVE, KM3NeT and SKA at all scales up to the multi-Exabyte needs of such projects. These data centres (CERN, CNRS-CCIN2P3, DESY, GSI, IFAE-PIC, INFN, LAPP-MUST, Nikhef, SURFSara, UG), partners in ESCAPE, have experience built up over a decade in particle physics within WLCG and in supporting major astronomy and astroparticle physics precursors pan-European research infrastructures (such as AMS, ANTARES, HESS, LOFAR, MAGIC, etc.).
- **Key outputs:** *A mechanism required for large research infrastructures such as HL-LHC and SKA that in future will manage multi-Exabyte data sets, that will need to be served to global user communities in a scalable and performing way. A federated storage infrastructure implementing the FAIR data management principles at the base level, and form the basis for higher-level data preservation and access services delivered in the other work packages.*

Task 2.1: Data lake infrastructure and federation services

Task 2.2: Data Lake Orchestration Service

Task 2.3: Integration with Compute Services

Task 2.4: Networking

Task 2.5: Authentication and Authorization Mechanisms

Did ESCAPE achieved the expected impact?

Based on the previous slide, elaborate answers to the followign questions (focus on WP2):

1. What is the impact for the ESCAPE sciences?
2. What is the impact for other HEP/Astro communities?
3. What is the impact for other sciences?
4. What is the impact for the facilities providing the services?

For all the above, discuss what we achieved and what we should focus on in the future