



Contribution ID: 64

Type: Talk

## Next-Gen Storage Infrastructure for ALICE: Paving the Road Toward Hi-Luminosity LHC

*Monday 21 October 2024 16:51 (18 minutes)*

ALICE introduced ground-breaking advances in data processing and storage requirements and presented the CERN IT data centre with new challenges with the highest data recording requirement of all experiments. For these reasons, the EOS O2 storage system was designed to be cost-efficient, highly redundant and maximise data resilience to keep data accessible even in the event of unexpected disruptions or hardware failures. With 150 PB of usable storage space, EOS O2 is now the largest disk storage system in use at CERN. We will report on our experience and the effectiveness of operating this full production system in Run-3 and during the LHC heavy-ions run and on how this will help in paving the road towards the data deluge coming with Hi-Luminosity LHC. In particular, we will report on our experience with RS(10+2) erasure coding in production, the achievable performance of EOS O2, reliability figures, life cycle management, capacity extension and rebalancing operations.

**Primary authors:** LEKSHMANAN, Abhishek (CERN); PETERS, Andreas Joachim (CERN); CAFFY, Cedric (CERN); SMITH, David (CERN); SINDRILARU, Elvin Alin (CERN); DEL MONTE, Gianmaria (CERN); AMADIO, Guilherme (CERN); VRACHNAKI, Ioanna; MASCETTI, Luca (CERN); Dr ARSUAGA RIOS, Maria (CERN); YURCHENKO, Volodymyr (National Academy of Sciences of Ukraine (UA))

**Presenters:** PETERS, Andreas Joachim (CERN); SINDRILARU, Elvin Alin (CERN)

**Session Classification:** Parallel (Track 1)

**Track Classification:** Track 1 - Data and Metadata Organization, Management and Access