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New GridKa Tape Storage System –from design to production deployment

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Storing the ever-increasing amount of data generated by LHC experiments is still inconceivable without making use of the cost effective, though inherently complex, tape technology. GridKa tape storage system used to rely on IBM Spectrum Protect (SP). Due to a variety of limitations and to meet the even higher requirements of HL-LHC project, GridKa decided to switch from SP to High Performance Storage System (HPSS).

Even though HPSS is a highly scalable and performant tape management software, it required special adjustments to fulfill all GridKa requirements. Based on the experience gained with the former tape system, the implementation team developed specific stress scenarios. Running these tests and interpreting their results allowed a successful adaptation of HPSS and made it the core component of GridKa tape storage system.

To increase the performance the architecture of the system was reshaped and the stored data has been collocated in a more appropriate, tape-oriented way to match the requirements of every single experiment and HPSS demands. In total 70 PB of data and 40 million files were migrated from the legacy to the new tape system at GridKa.

This contribution presents the internal architecture of the new tape storage system, the implementation and migration process, the encountered issues, the achieved results and ongoing work on open items.

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