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Data management services of NorduGrid

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In common grid installations, services responsible for storing big data chunks, replication of those data and indexing their availability are usually completely decoupled. And a task of synchronizing data is passed to either user-level tools or separate services (like spiders) which are subject to failure and usually cannot perform properly if one of underlying services fails too.

The NorduGrid Smart Storage Element (SSE) was designed to try to overcome those problems by combining the most desirable features into one service. It uses HTTPS/G for secure data transfer, Web Services for control (through same HTTPS/G channel) and can provide information to indexing services used in middlewares based on the Globus Toolkit (TM). At the moment, those are the Replica Catalog and the Replica Location Service. The modular internal design of the SSE and the power of C++ object programming allows to add support for other indexing services in an easy way.

There are plans to complement it with a Smart Indexing Service capable of resolving inconsistencies hence creating a robust distributed data storage system.

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