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FTS as a part of the SKA data movement pipeline

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The File Transfer Service (FTS) is a bulk data mover responsible for queuing, scheduling, dispatching and retrying file transfer requests, making it a critical infrastructure component for many experiments. FTS is primarily used by the LHC experiments, namely ATLAS, CMS and LHCb, but is also used by some non-LHC experiments, including both AMS and DUNE. FTS is an essential part in the data movement pipeline for these experiments and is responsible for moving their data across the world via the worldwide LHC computing Grid (WLCG).

The Square Kilometre Array (SKA) is a multi-purpose radio telescope that will play a major role in answering key questions in modern astrophysics and cosmology. The SKA will have a survey speed a hundred times that of current radio telescopes and its capabilities will allow transformational experiments to be conducted in a wide variety of science areas. Whilst the headquarters for this project is located at Jodrell Bank in the UK, the main telescope sites are located in South Africa and Australia. The two telescope sites will produce approximately 700 PB of data per year, which will need to be moved to one of the SKA regional centres located in member countries around the world to be stored, before being accessed by scientists. It is evident that there will be several similarities between the computing requirements for the LHC and SKA experiments, in particular the challenges posed by moving large quantities of data around a global network.

In this talk, we will discuss the usage of FTS by SKA and its ability to enable long-range data transfer across the developing SKA regional centre network of sites. We will also discuss some alterations to the FTS service ran at STFC to better support SKA, most notably the migration to token based authentication away from X509 certificates.

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