

DATA STORAGE FOR THE SLS

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When it comes into operation in August 2001, the Swiss Light Source will require a large (> 1 Tera Byte) amount of data storage capacity, both for controls and data acquisition. Already during the initial stages of testing and commissioning, the parameters of the control elements will need to be archived for. Over time, the data storage requirements will certainly grow, as new beamlines and new detector technologies are used, so the storage system must be easily expandable. Due to high availability requirements, the hardware implementation must include fault tolerance, which implies hardware RAID with detectable alarm for disc or port failure. Expansion of storage capacity on the fly, without disrupting services, must be possible. High bandwidth is needed, as transfer rates of up to 80 MByte/second are expected. Additionally, multi-platform access over long distances, using standard network protocols, must be available. A modern concept for storage must be implemented which gives us the ability not only to store increasing amounts of data, but also to archive them. Backups, including databases, must be made on-line; as we cannot afford to bring down the system during this activity. A prototype system is being built to meet these requirements, based on commercial systems using Fiber Channel technology.