WDC- Sunspot Index and Long-term Solar Observations

Technical Infrastructure

General ROB technical infrastructure:

The ROB-infrastructure is distributed over 3 redundant server rooms in different buildings, all equipped with UPS systems and stand-alone diesel generators in case of power outage.

Critical data is stored on fully redundant storage systems. A redundant high-speed connection connects to the internet European backbone GEANT research network.

The e-infrastructure is maintained by a dedicated IT-service resolving any observed or reported anomaly on an ASAP basis during working days and on a best effort basis at other times. Experience over the past decades has shown that the set-up provides an excellent system reliability, availability and maintainability. In practice this means that the system up-time is typically 99.9% and that servicing is typically far better than "next-business day".

Technical infrastructure specific to SILSO:

The SILSO team computes the provisional data series on a monthly basis every first of the month for the previous month and the definitive series every 3 months. The provisional series is always computed on the first of the month wether it is during working days or otherwise. A member of the team is always available. All other computations are not time sensitive and so can easily be executed the next working day.

The SILSO e-infrastructure is implemented on a redundant VMWare ESX infrastructure. The software documentation is maintained by the SILSO team and the software is being integrated in a versioning system (Git or equivalent).

SILSO data recovery relies on ROB provided backups. There are 3 servers:
1/Server 1: The software benefits from 15 days of snapshots but in the near future we will implement a versioning system through a local git or a gitlab. This will enable us to keep the version of each run in the data header. Server 1 is a small vmware virtual server.
2/Server 2: Databases (website and data) have daily records for 4 months and monthly records for eternity. Server 2 is a vmware virtual server with 4vCPU and 32GB of RAM running Ubuntu 14.04. The platform used to run the SILSO website is Drupal 7.61.
3/Server 3: The product files are saved 28 times a day, 8 times per week with an asynchronous replication to another server in another building.

Technical infrastructure specific to SIDC:
In the near future (2019), SIDC webservers (including the SILSO website) will be mirrored through an outside system (Belnet or equivalent).