Functional Element Description: CASTOR

1. Name

CASTOR (CERN Advanced STORage) Service

2. Summary

CASTOR at CERN provides the service for storing large volumes of physics data (RAW data, processed data and simulation files) and user files. It is also providing the end-points for experiments data storage (tape recording) and distribution (via SRM/FTS).

3. Homepage

The CASTOR service web site is available from **http://cern.ch/castor**

4. Functional Manager

Xavier Espinal (xavier.espinal@cern.ch)

5. Service Owner

Alberto Pace (Alberto.Pace@cern.ch) for: Data Storage Service for Projects & Experiments

6. General Description

Available to all CERN users via different functional elements. Each LHC experiment has its own instance. The service is not suitable for confidential data (emails, passwords, etc.)

The PUBLIC instance is dedicated to non-LHC communities/experiments: AMS, COMPASS, NA61, NA62, ILC,...

Optimal file size is several GB and is limited to 500GB per file.

Different classes of services are offered to each community: data-recording and archival services (tape backed) and disk-only oriented to other activities as data merging.

Client support for all CERN PCs running a recent version of Scientific Linux CERN (SLC). Clients tools uses xroot and RFIO for data access. Presently the primary choice is xroot and RFIO is supported for compatibility. These protocols allow to access data via CASTOR disk caches.

Tape backed files are accessible through a disk cache. CASTOR Tape service is responsibility of the Tape operations team.

An additional gateway for import/export activities is CASTOR SRM interface, compliant with the SRM 2.2 standards as defined by the WLCG project.

7. Client Support

Supported clients are those running a recent version of Scientific Linux CERN (SLC).Other operating-system clients might work but they are not officially supported and are not part of the testing suite.

8. User responsibilities

The users have to comply with the policy of the laboratory and of their experiment/projects especially for data security and confidentiality. The service is not suitable for confidential data.

9. Retirement procedures

CASTOR implements the CERN policy for account management. In case of the deletion of the corresponding AFS account, CASTOR data will be disabled and be kept for a period of 6 months.

10. Support

User support is provided via the CERN Service desk:

http://www.cern.ch/service-portal

Issues affecting active experiments activities should be reported via GGUS alarm tickets or equivalent agreed means (a piquet service is offered for these cases to contact the 3rd level of support). Note that the usage of GGUS for user issues is discouraged and CERN Service Now should be used instead.

Outside working hours user support is provided by:

- the CC operators following agreed procedures to handle normal operations and incidents
- the CASTOR support team on a “best-effort” basis

11. Service Availability

The current availability of the CASTOR service is available from the IT Service Level Status pages: **http://cern.ch/sls/service.php?id=CASTOR**

The service availability is measured as the success of regular functional tests.

12. Key performance indicators

The key performance indicators for the CASTOR service are:

- Data rates
- Latency for tape migration (<4*h under normal conditions*)
- Data durability

CASTOR should comply with the Service Level Agreements as defined in the WLCG MoU (for LHC experiments)

13. Service Incidents

Service incidents affecting more than 5 users shall be posted and regularly updated on the CERN IT Status Board (**http://cern.ch/itssb**).

14. Scheduled Interventions

All non-transparent interventions shall be published at least 3 business days in advance on the CERN IT Status Board (**http://cern.ch/itssb**).

Interventions affecting production activities should be also agreed with the experiments via the defined channels.

15. Service Dependencies

A general power cut will render the CASTOR service unavailable.

A general networking problem will cause service unavailabilty.

16. Charging Model

The IT budget covers a reasonable usage of CASTOR (essentially via the public instance, called C2PUBLIC). High-load and critical activities are discussed between the user communities and IT for correctly provision them (notably experiments storing experimental data in CASTOR).

17. Document Review Date

This document is to be reviewed annually.