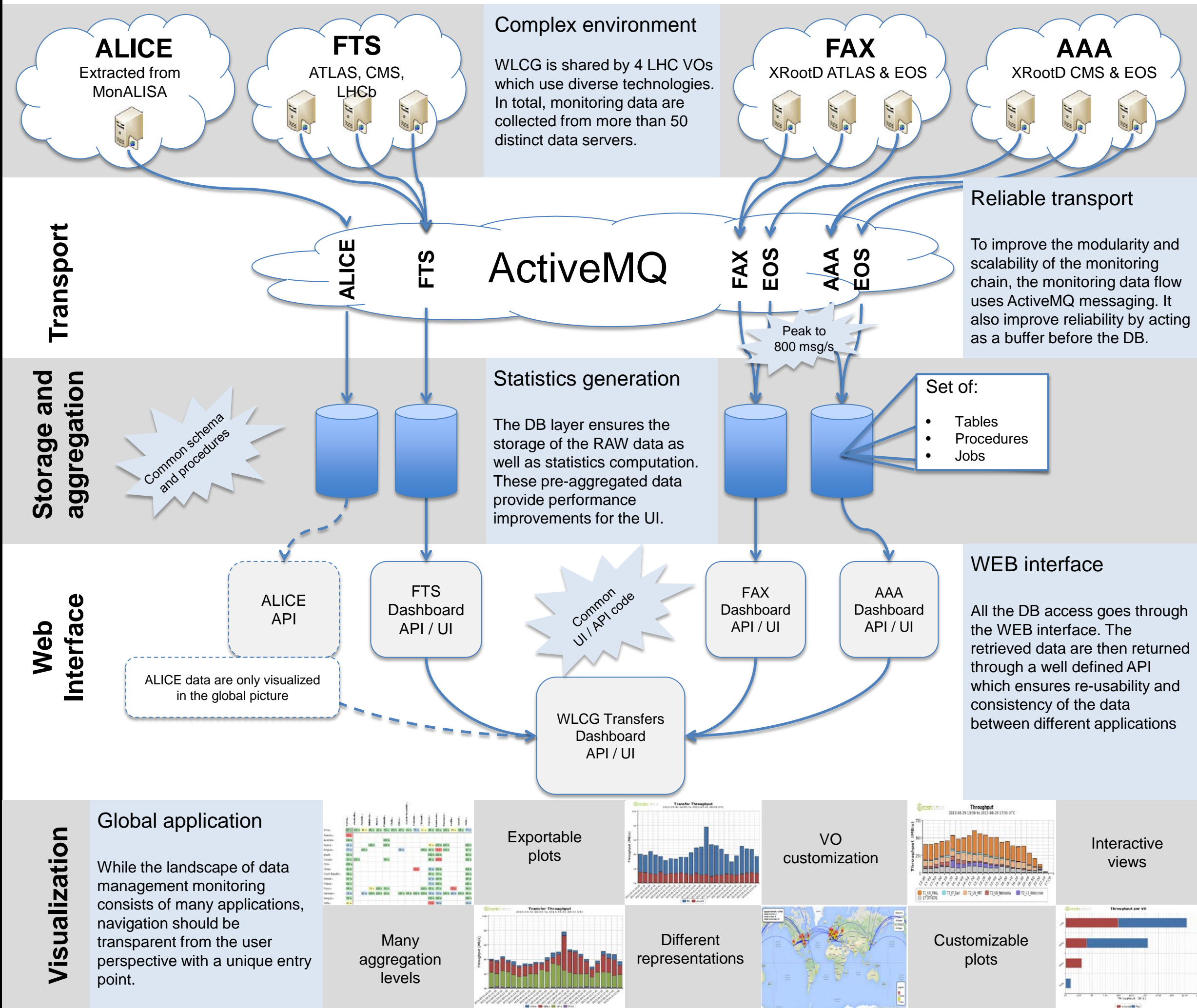# WLCG Transfers Dashboard
A unified monitoring tool for heterogeneous data transfers

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The Worldwide LHC Computing Grid provides data transfer services for the four main virtual organizations using two key technologies : FTS and XRootD. The WLCG Transfers Dashboard is a global system which provides a complete cross-VO and cross-technology picture of data transfer activity on the grid.

Left margin: WORLDWIDE LARGE HADRON COLLIDER COMPUTING GRID

Transport

ALICE — Extracted from MonALISA

FTS — ATLAS, CMS, LHCb

FAX — XRootD ATLAS & EOS

AAA — XRootD CMS & EOS

Complex environment
WLCG is shared by 4 LHC VOs which use diverse technologies. In total, monitoring data are collected from more than 50 distinct data servers.

ActiveMQ (ALICE, FTS, FAX EOS, AAA EOS)

Peak to 800 msg/s

Reliable transport
To improve the modularity and scalability of the monitoring chain, the monitoring data flow uses ActiveMQ messaging. It also improve reliability by acting as a buffer before the DB.

Storage and aggregation

Common schema and procedures

Statistics generation
The DB layer ensures the storage of the RAW data as well as statistics computation. These pre-aggregated data provide performance improvements for the UI.

Set of:
- Tables
- Procedures
- Jobs

Web Interface

ALICE API

FTS Dashboard API / UI

Common UI / API code

FAX Dashboard API / UI

AAA Dashboard API / UI

ALICE data are only visualized in the global picture

WLCG Transfers Dashboard API / UI

WEB interface
All the DB access goes through the WEB interface. The retrieved data are then returned through a well defined API which ensures re-usability and consistency of the data between different applications

Visualization

Global application
While the landscape of data management monitoring consists of many applications, navigation should be transparent from the user perspective with a unique entry point.

Exportable plots

VO customization

Interactive views

Many aggregation levels

Different representations

Customizable plots

The architecture of the WLCG Transfers Dashboard has evolved. Moving from a single system with a central DB to well-defined technology-specific applications aggregated together in a hierarchical model, This architecture has allowed the integration of EOS data (which are generated at a peak of 800 Hz) within the global picture, provides a clean isolation of the workflows and facilitates integration of future data transfer technologies. This system is now daily used by more than 80 distinct users.

http://dashb-wlcg-transfers.cern.ch
Contact: dashboard-support.cern.ch

WLCG