Update on Grid Monitoring Solutions – GridMap –

6th openlab Major Review Meeting
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Max Böhm
EDS / CERN openlab

max.boehm@eds.com

CERN openlab

EDS
an HP company

- A new type of **monitoring data visualization** which provides **easy readable top-level live views** into the state of distributed systems based on treemap/heatmap visualization techniques

- Services are visualized by rectangles sized by *importance* and colored by *state*. A problem becomes visually correlated to its impact.

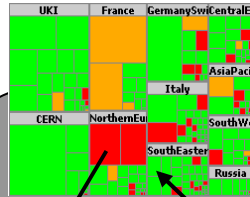- ***Better visibility and manageability of large scale distributed services***
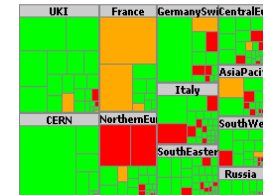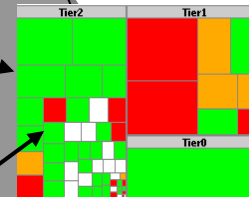

GridMap

Background

- Developed during EDS/CERN openlab collaboration in 2007/08 to meet the need for better management views of the Grid

- Used at CERN for improved monitoring and operations of the production grid services

Patent Pending

Top-level View
Global *GridMap*

Large-scale Federated Grid Services Infrastructure

Alert

Corrective action effect

Application Domain *GridMap*
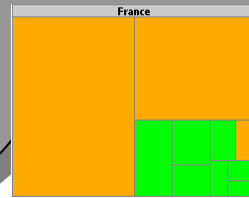
Multiple Views:

Federation, Partner, Site…
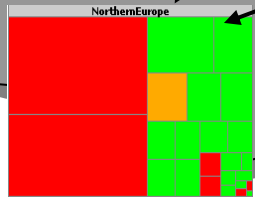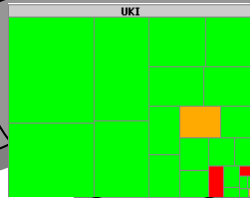
Local *GridMap*   Local *GridMap*   Local *GridMap*

Next level of *GridMaps*
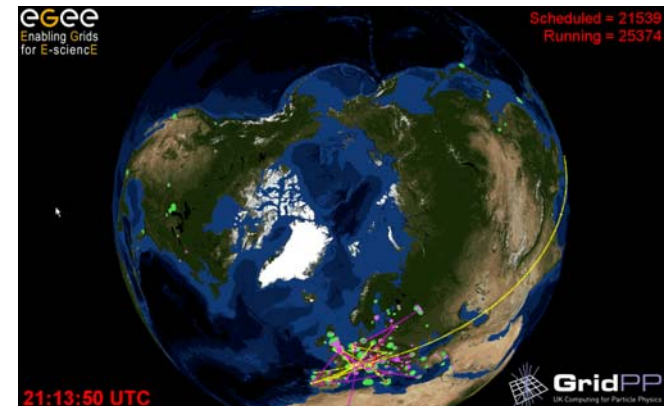
GridMap System Architecture

GridMap Server

GridMap View

Existing monitoring system(s)

GridMap Server

Web Browser

EGEE/WLCG Grid sites

70.000 CPUs
250 sites
45 countries

- Data services
- Caching
- Layout algorithm
- Apache/Python based

- Active web page
- JavaScript/AJAX
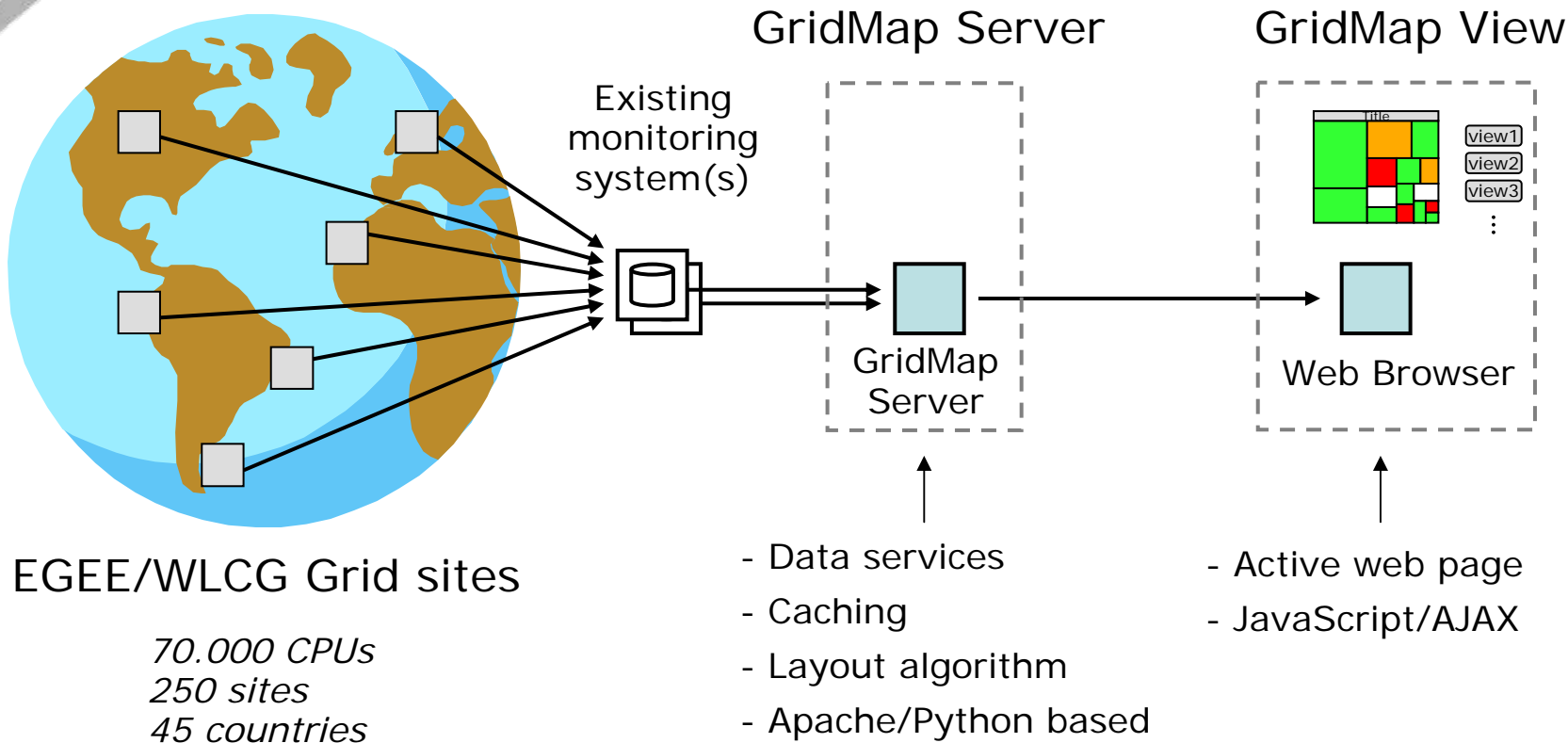
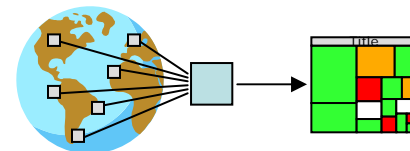*EGEE = Enabling Grids for E-sciencE*

WLCG grid infrastructure includes subsets of the EGEE Grid and the US Open Science Grid

Main GridMap

EGEE '07

CERN Open Days

| 4/07 | 10/07 | 4/08 | 10/08 | 1/09 |

Start collaboration

GridMap Prototype

packaging, feature improvements, used for production grid monitoring

Technical Student

Other GridMap based monitoring applications evolving at CERN

2/08

WLCG Critical Services Map

New Prototypes
- Site Status Board GridMap (CMS)
- Experiment Workflow (CMS)
- Site Monitoring (WLCG)
- ...

D4Science collaboration

GridMap based applications at EDS
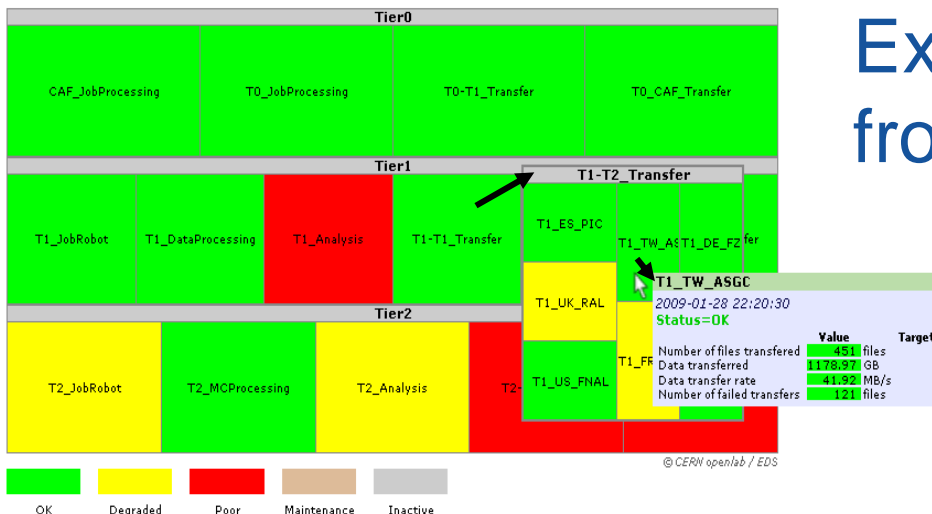
4/08

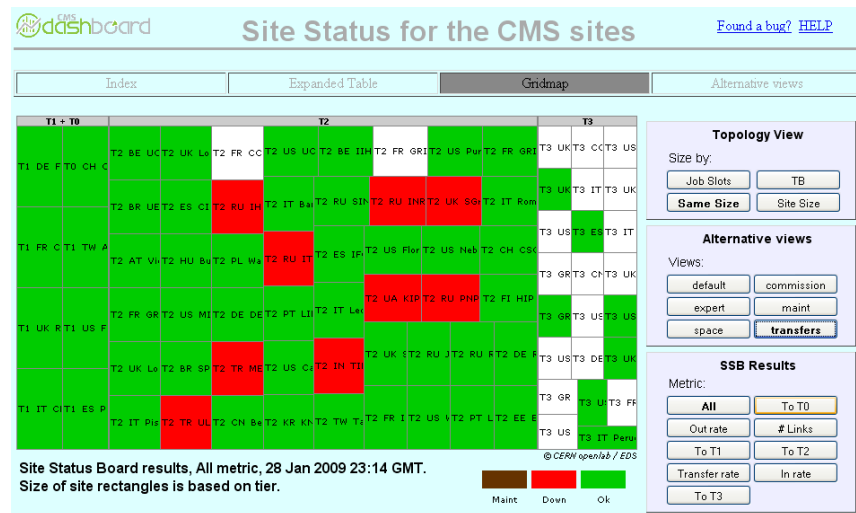SOA Services Monitoring

Network Monitoring

Experiment Workflow from VO's perspective

GridMap view in the CMS Site Status Board

- Technical Student: Lukasz Kokoszkiewicz
  - started 11/2008, work area GridMap (know-how transfer)

- GridMap software framework & repository
  - Consolidate all applications & documentation
  - Factor out common components and reusable code, develop test support
  - Standardize directory structure & configuration

- Next GridMap application update
  - Better WLCG support (OSG sites)
  - Improved data feeds (WLCG topology, #Cores)
  - Usability improvements (e.g. services selection)

- Generic GridMap server improvements