

Siteview GridMap: A new monitoring tool from the site point of view

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Monitoring of the activities during the CCRC08: feedback from sites

- After the CCRC08 experience, feedback from site administrators:
 - The main monitoring tools during this exercise were experiment specific tools. They are not straightforward to use for a person external to the experiment
 - Sites serving many experiments had to deal with very different tools
 - In many cases the sites could not understand well if they were contributing to the VO activity as expected
- The site administrators would like to be able to compare the experiment's view of the site contribution to the information they get from their own monitoring systems

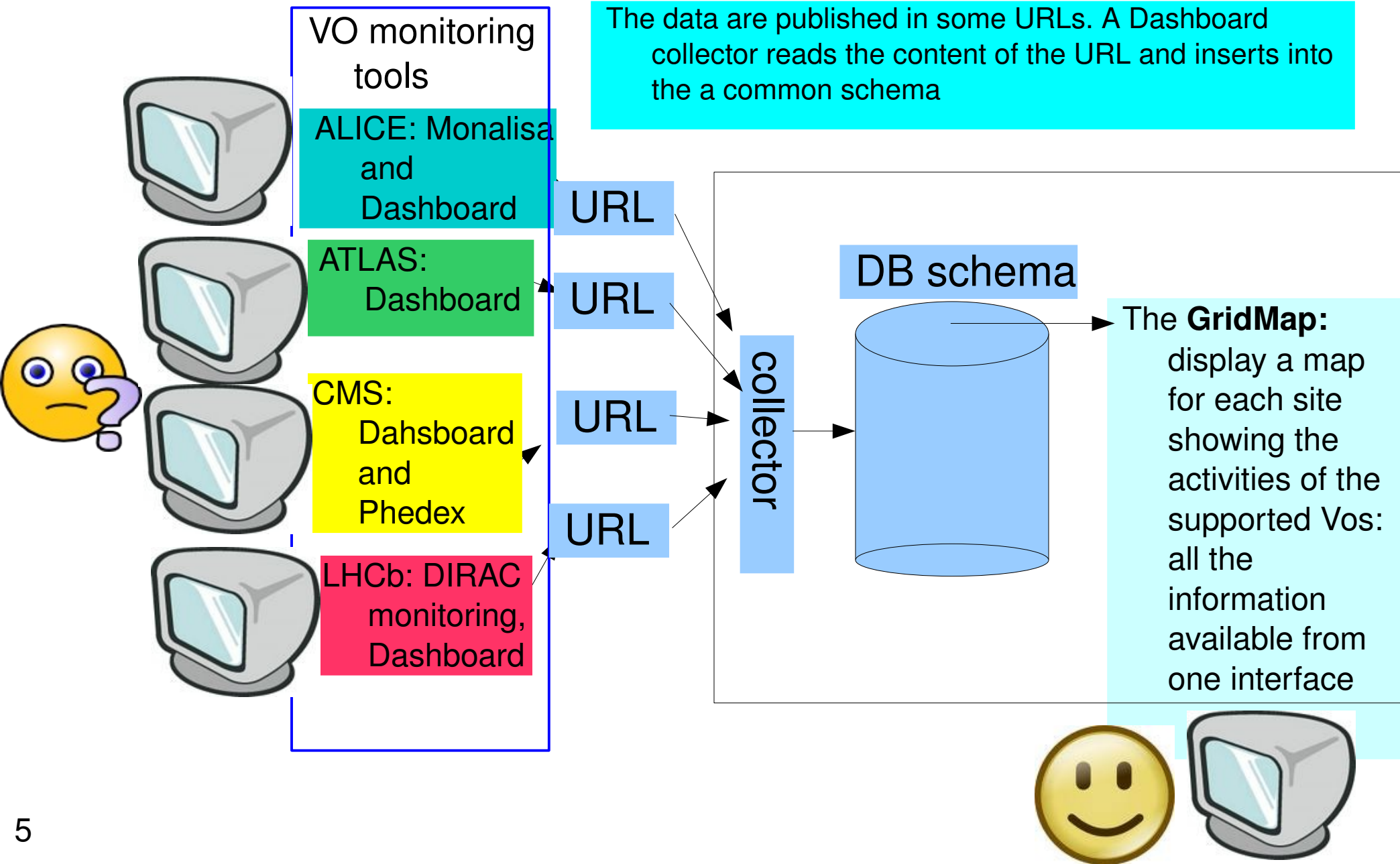
An additional requirement from sites is to have a clear definition of the targets from the experiments

Objective of this activity

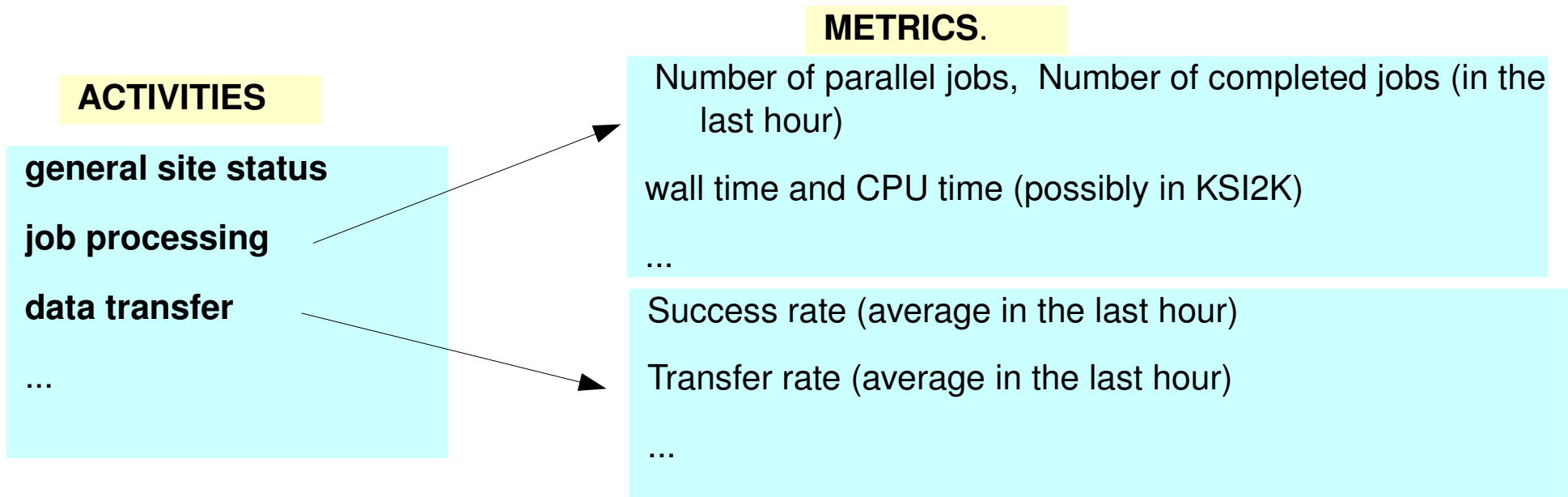
Providing a new tool which should:

- from one unique console, give an overview of the overall status of the services in the site. This should be a tool easy to use, also for persons external to the VO, and which does not require a particular knowledge of each experiment ->AN OVERALL VIEW OF THE SITE FROM ONE UNIQUE CONSOLE
- This tool will extract information from the experiment specific tools (Dashboard, MonALISA, Dirac, Phedex) and will display it in a consistent way, providing links to the source of the information-> A HIGH LEVEL TOOL
- Display the information using the GridMap technology -> FAST DETECTION OF PROBLEMS THANKS TO THE COLOR AND SIZE OF THE MAPS

Information work flow



Activities and metrics to monitor



There are 2 main activities: job processing and data transfer. Their metrics are collected for the 4 experiments

For each main activity there are some secondary activities: they are optional and depend on the experiment computing model

Job Processing: MC production, data reconstruction, user analysis, SAM tests...

Data transfer: MC production transfer, transfer t0-t1, transfer t1-t1...

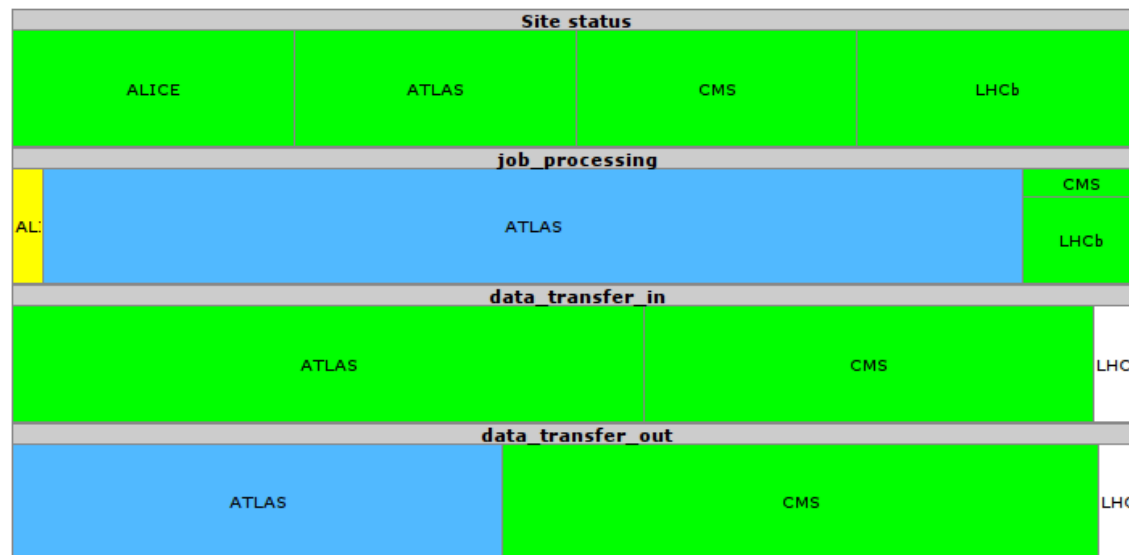
The GridMap display

- A GridMap for each site
- Inside the site GridMap, the hierarchy is:
 - first level: Activity
 - second level: VO

The main map only shows the main activities, for all the supported Vos

The size of the rectangle is proportional to the number of running jobs. A constant offset is added, in order to have all the supported Vos visible, even if they are running few (or no) jobs.

The status (=COLOR) should be provided by the VO. Usually it is computed on the basis of the success rate



Sites

Tier 0:

- CERN-PROD

Tier 1:

- FZK-LCG2
- RAL-LCG2
- NDGF-T1
- NIKHEF-ELPROD
- pic
- INFN-T1
- IN2P3-CC

Tier 2:

- DESY-HH
- DESY-ZN
- GRIF
- INFN-MILANO
- IN2P3-LAPP

The site status

- What does it mean?
 - It is an overall evaluation of the site status from the VO perspective. If the status is green, then the site is ok for the VO, even if there is no job running
- Where is it taken from?
 - For LHCb and ATLAS it is computed on the basis of SAM VO specific tests
 - For CMS it takes into account SAM tests for CE and SRMv2, whether the site is visible in BDII or not, and whether the site is in maintenance
 - For ALICE it is extracted from Monalisa
- **Important:** if the status is red it does NOT necessarily mean that the responsible is the site. Even if the site status definition is as much as possible related to the site, it can happen sometimes that a site turns red due to problems of the VO. Even in this case it is useful to notify the site about the problem.

Site status for CMS: Site Status Board

From there all the information and relative links are available (see presentation by P. Saiz)

Index	Expanded Table	Gridmap	Alternative views
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Put the mouse over any column header to get the description of the column
 Clicking on a column header will display the evolution of that column over the last 24 hours

: information is more than 24h old

Site Name	Visible	JobRobot	SAM TESTS		Production	Analysis	Site usage		Phedex			CMSSW	Maintenance (expand this column)	Under investigation	SiteIssues
			CE	SRM			Running	Pending	# Links	In rate	Out rate				
T1_DE_FZK	OK	0%(383)	error	OK	100%(1)	n/a	8	129%	ok	58	243	OK	GOCDDB	mark	info

Site status for ATLAS and LHCb: VO specific SAM tests

The dashboard displays site status for ATLAS and ALICE across four categories: Site status, job, data_transfer_in, and data_transfer_out. A tooltip for ATLAS shows the following information:

general/ATLAS	
2009-02-24 11:09	
Status:	good
site status computed on the basis of ATLAS specific SAM tests	
Status	Go to
good	URL

The browser window shows the SAM visualization portal for ATLAS. The URL is <http://dashb-atlas-sam.cern.ch/dashboard/request.py/historicalseviceavailability?mode=serviceavl&>. The page title is "SAM VISUALIZATION | ATLAS".

The link redirects to the SAM visualization portal for site availability of that site (see talk about SAM tests in this session)

The SAM visualization portal displays a "Service Availability" chart for 24 hours from 2009-02-23 10:00 to 2009-02-24 10:00 UTC. The chart shows a green grid, indicating that all sites are available. The sites listed are:

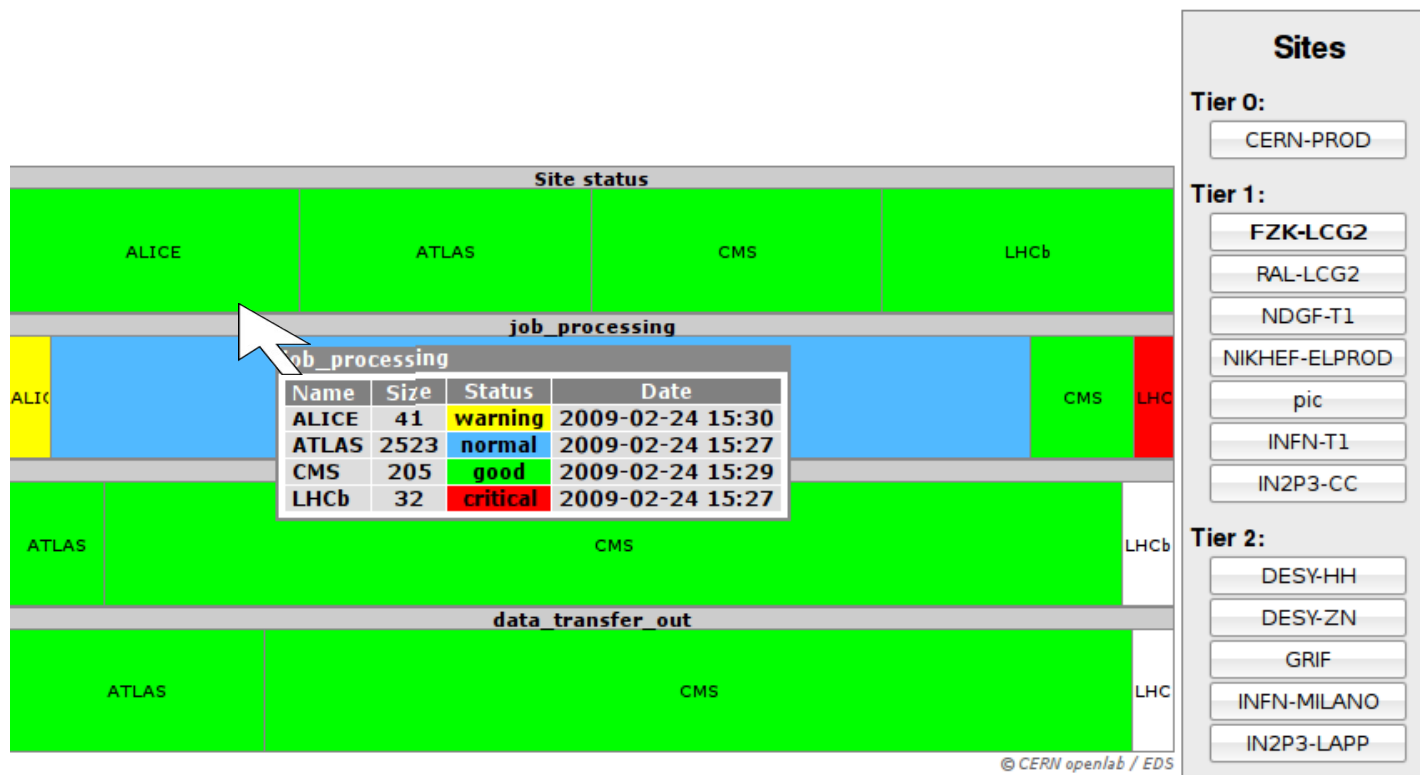
- FZK-LCG2 - CE - ce-1-fzk.gridka.de
- FZK-LCG2 - CE - ce-2-fzk.gridka.de
- FZK-LCG2 - CE - ce-3-fzk.gridka.de
- FZK-LCG2 - CE - ce-4-fzk.gridka.de

The chart is titled "Service Availability" and "24 Hours from 2009-02-23 10:00 to 2009-02-24 10:00 UTC". The legend indicates "Algorithm for calculating the Site and Service Availability".

Job processing activity

- Moving the mouse on the header: information about the VO which are supported by the site.
- The number of running jobs is displayed (this is the parameter which determines the size of the rectangle), the status (which determines the color), and the last update time

Siteview GridMap Test Page



- **Important:** if the status is red, it doesn't necessarily point to a problem of the site. If the site status is ok, then most probably it is a problem of the VO activity

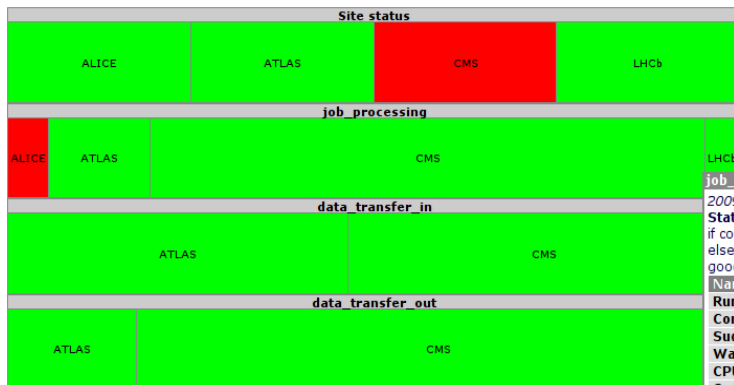
Job processing (II)

- Ex. **LHCb**: the links in the popup windows redirects to the Dirac monitoring system

Status computed on 24 h statistics. Usually 1 h statistics is not enough to evaluate the status in a reliable way (especially for small experiments or small sites)

Ex. GridMap for GRIF

Siteview GridMap Test Page



Sites

Tier 0:

CERN-PROD

Tier 1:

FZK-LCG2

RAL-LCG2

NDGF-T1

NIKHEF-ELPROD

pic

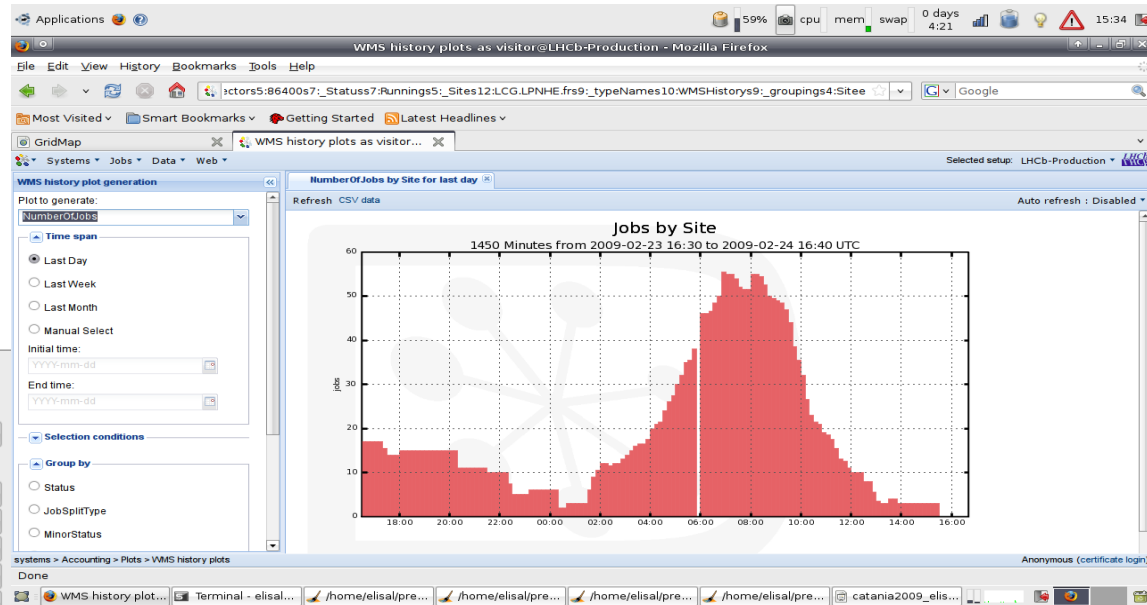
job_processing/LHCb

2009-02-24 14:24

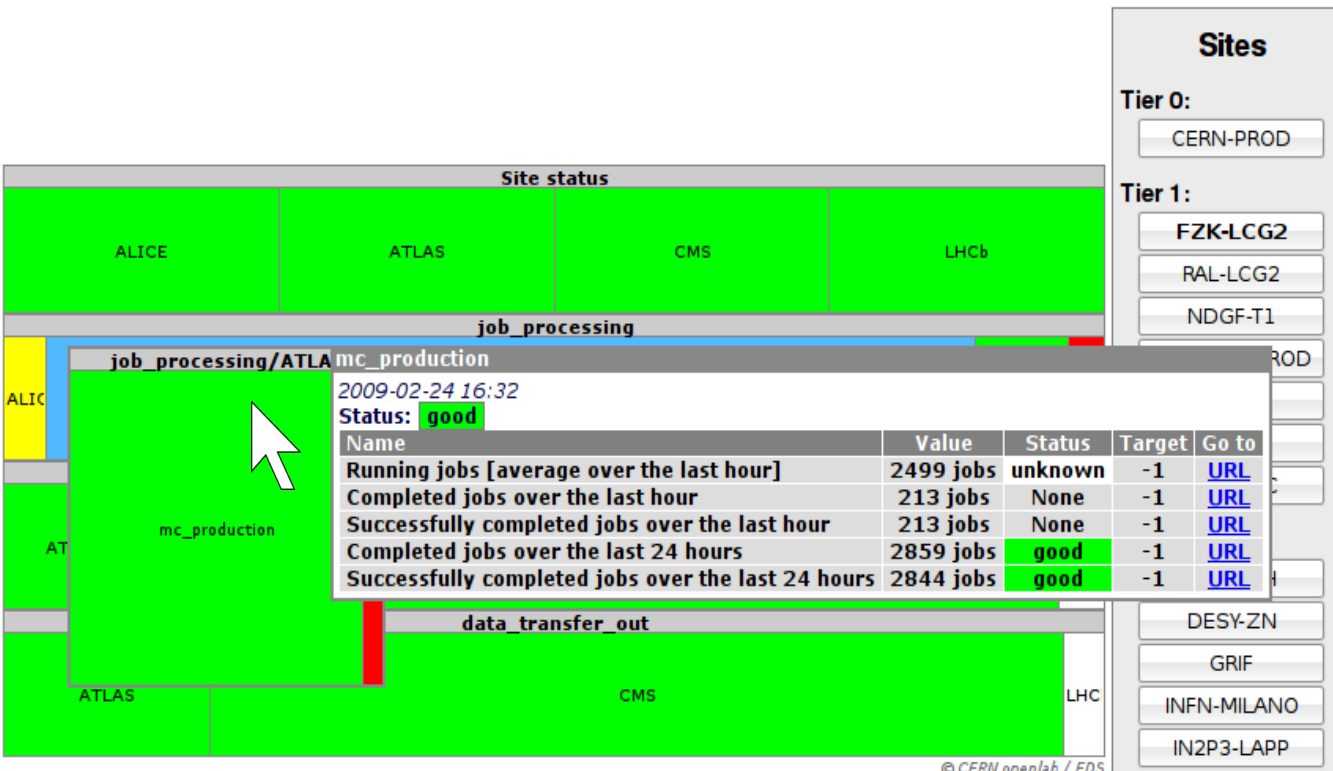
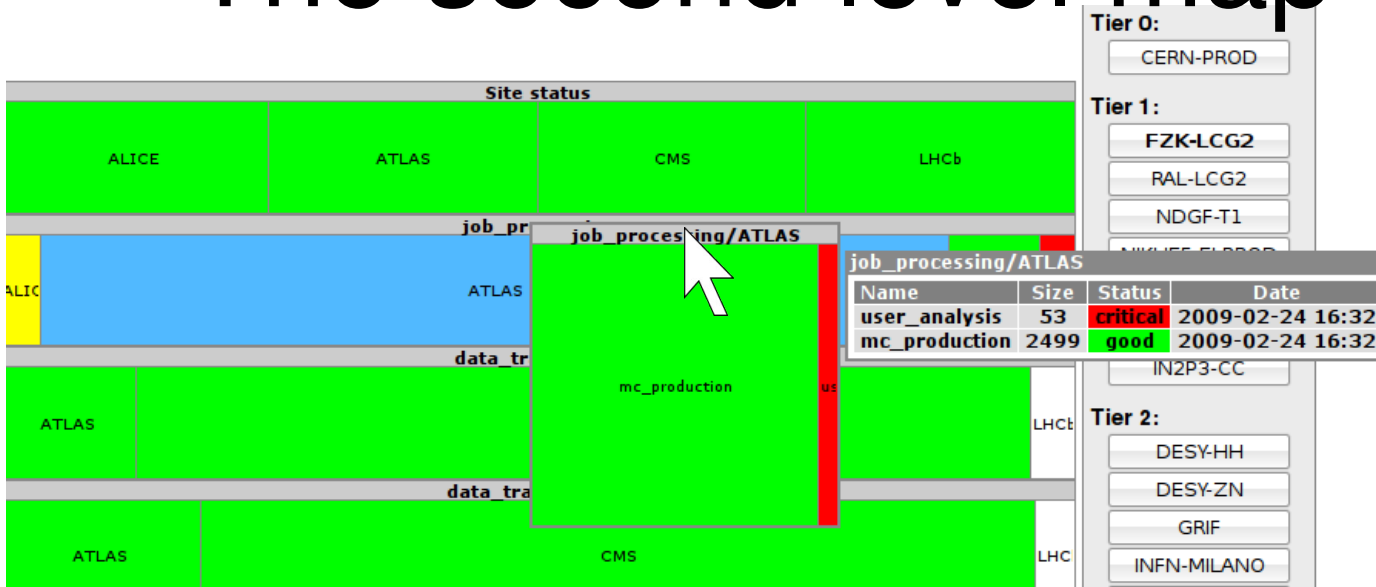
Status: good

if completed jobs in the last 24h<10 Status=idle
 else status calculated on the basis of the success rate for the last 24 hours:
 good>0.9, 0.9<=normal<0.8, 0.8<=warning<0.5, 0.5>=bad.

Name	Value	Status	Target	Go to
Running jobs [average over the last hour]	61 jobs	unknown	-1	URL
Completed jobs over the last hour	3 jobs	idle	-1	URL
Successfully completed jobs over the last hour	3 jobs	unknown	-1	URL
Wall time for jobs completed over the last hour	38509 s	unknown	-1	URL
CPU time for jobs completed over the last hour	37779 s	unknown	-1	URL
Completed jobs over the last 24 hours	212 jobs	good	-1	URL
Successfully completed jobs over the last 24 hours	207 jobs	unknown	-1	URL



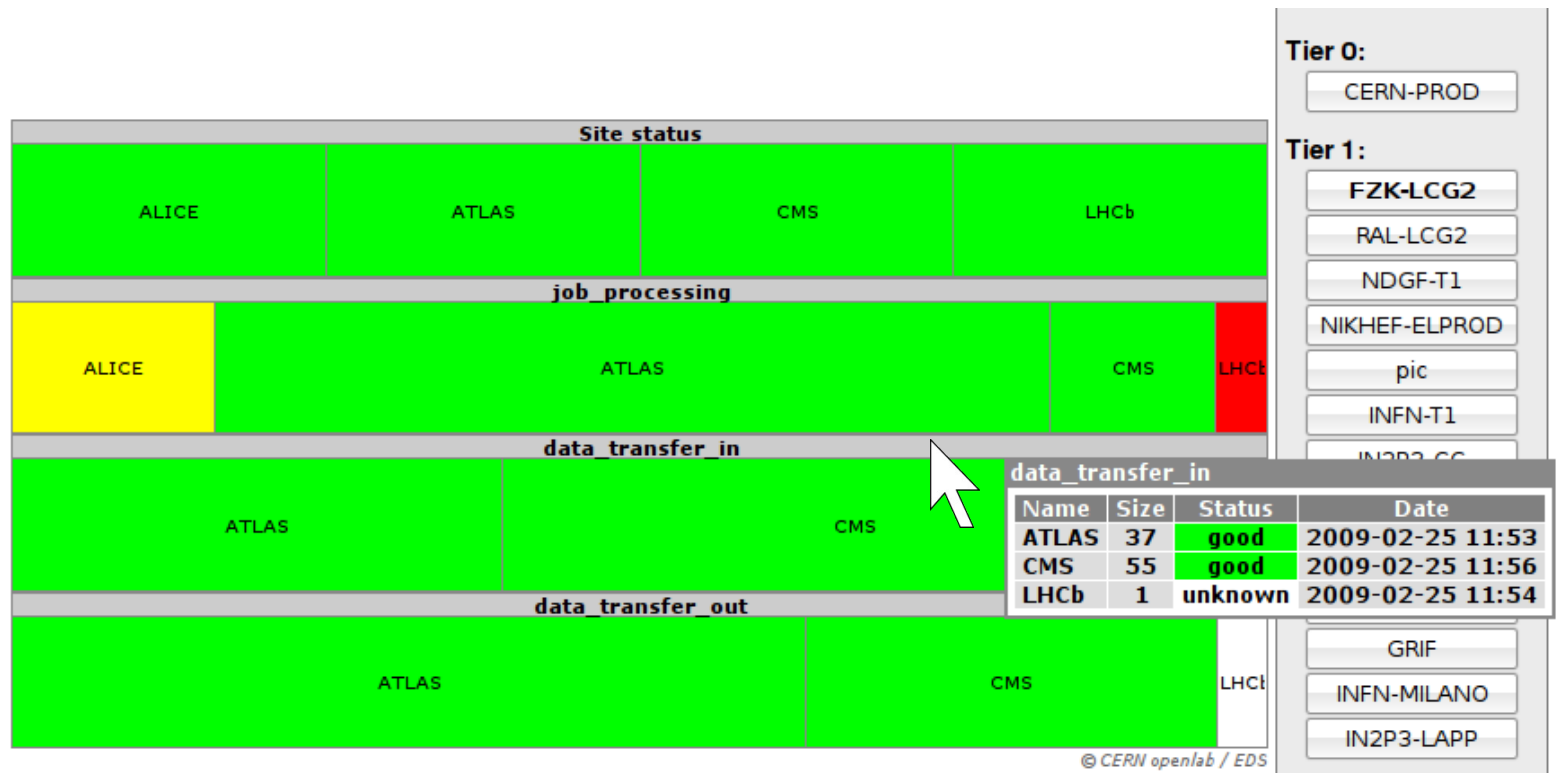
The second level map



- For ex. Job processing activity for ATLAS
- Clicking on the map, the sub activities are show. For ex. ATLAS has 'MC production', 'user analysis'
- The context help shows the metrics for every sub activity and the links to the source of the information

Data transfer

- The GridMap displays the total incoming and outgoing transfer rate
- The size of the rectangle is proportional to the average transfer rate over the last hour
- The color (status) is determined on the basis of the succes rate of the transfers over the last 4 hours (more reliable than the last hour)

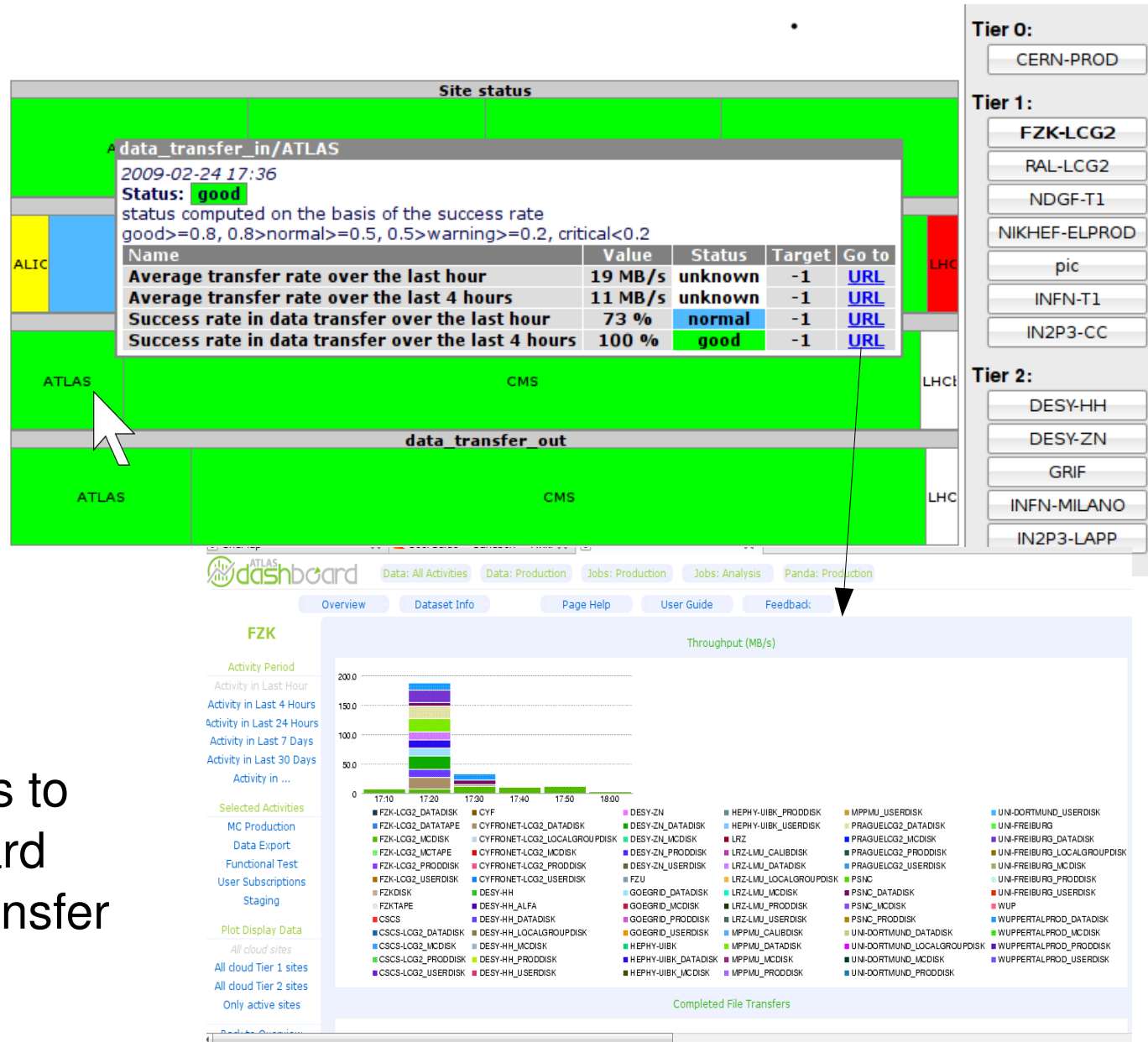


Data transfer for ATLAS

The color is computed on the basis of the success rate over the last 4 hours following the rule:

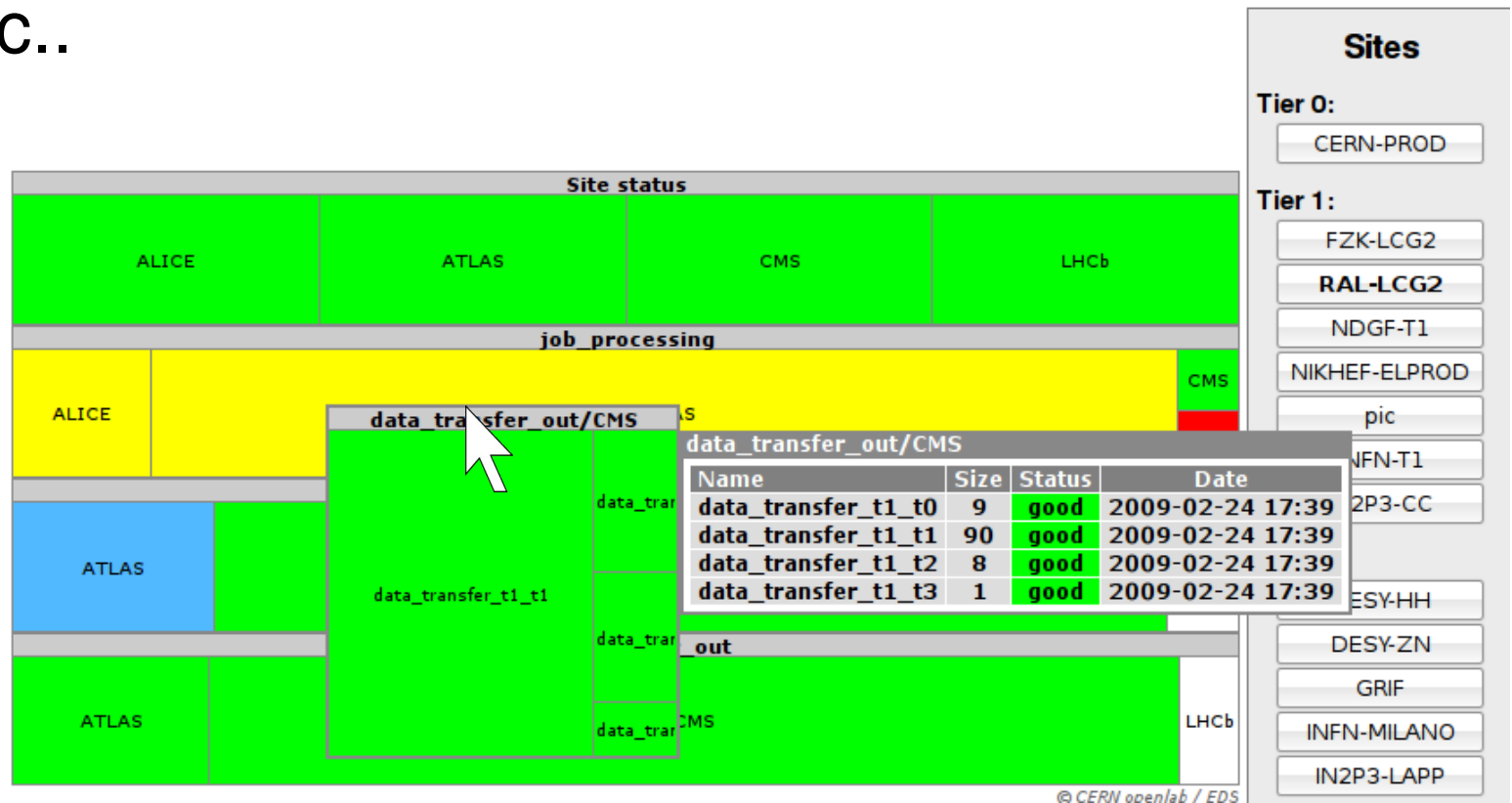
- $SR < 20\%$: critical
- $20 \leq SR < 50\%$: warning
- $50 \leq SR < 80\%$: normal
- $SR > 80\%$ good

- The link redirects to ATLAS Dashboard page for data transfer



Data transfer submaps

- The submaps displays the transfers for every sub activity. Ex. For CMS: transfers from T1 to T1, from T1 to T2 etc..



Current status and future plans

The development phase has finished in January and the link to the GridMap has been provided to some pilot users at different sites (some French sites, FZK, NIKHEF, PIC, RAL)

- Overall positive feedback
- Some problems: among them is that some Vos didn't provide all the required metrics or an evaluation of the status of the activity: not always easy to get the information from the VO! --> maintaining this tool is much easier if users from sites show their interest
- Future plans:
 - Implement historical views for the monitored metrics
 - Links to GGUS interface to open tickets

Summary

- Siteview GridMap: a high level tool to monitor the activities of all the Vos supported by the site from **only one interface**
 - For every activity it provides an evaluation of the status from the VO perspective and a link which redirects the user to the source of information: no need of browsing in many different monitoring systems
- this tool should streamline the information work flow and help site administrators and VOs to detect problems in an easy and efficient way

- Tutorial on Friday at 9:00 Leopardi room
- Online User Guide:
<https://twiki.cern.ch/twiki/bin/view/Sandbox/UserGuide>

Acknowledgements

- This project can progress only with the collaboration of the experiments which publish data to fill the common database schema
- A fundamental contribution from: P.Saiz (CMS), C.Grigoiras (ALICE), R.Rocha and B. Gaidioz (ATLAS), A. Casajus and A.Tsaregorotsev (LHCb), W.Ollivier (LHCb and ATLAS).

Thank you for your attention!
feedback to elisa.lanciotti@cern.ch