

# Monitoring tools in EGEE

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- **Kaleidoscope of monitoring tools**
- **Monitoring for operations**
- **Covered areas**
- **Missing parts**
- **Conclusions**

- **GStat - information system monitor with sanity checks**
- **Site Functional Tests - simulation of a real job with most “painful” features**
- **Certificate lifetime monitor - host certificates of service machines**
- **GOC Job Monitor - cross-check of job submission RBs $\Leftrightarrow$ CEs**
- **GoogleMaps monitor**
- **Gridlce - fabric level monitoring**
- **CIC-on-duty Dashboard - integrated view for operations**
- **User job monitoring - set of tools: job status changes, WN statistics, stdout access**
- **GridFTP log monitoring - throughput between SEs**
- **GOC DB - not a monitoring tool, but gives static information and is a source for monitoring tools**

dteam		
Site	Service Info	VO Access
ResourceBroker		
csTCDie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
FZK-PP	gram://a01-004-124.gridka.de:7772	['atlas', 'alice', 'lhcb', 'cms', 'dteam', 'd0', 'babar', 'magic', 'dech']
giAITie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giDCUie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giDITie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giITCie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giITTAie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giITTRie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giNUMie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giRCSlie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giULie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
giWITie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
LRZ	gram://a01-004-124.gridka.de:7772	['atlas', 'alice', 'lhcb', 'cms', 'dteam', 'd0', 'babar', 'magic', 'dech']
mpUCDie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
obsARMuk	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
scgNUIGie	https://cagraidsvr18.cs.tcd.ie:7772	['alice', 'atlas', 'cms', 'lhcb', 'dteam', 'sixt']
TOKYO-LCG2	gram://dgrb0.icepp.jp:7772	['atlas', 'dteam']
gridice		
BG-INRNE	ldap://se1.inrme.bas.bg:2136/mds-vo-name=local,o=grid	['cms', 'dteam']
CIEMAT-LCG2	ldap://lcg03.ciemat.es:2136/mds-vo-name=local,o=grid	['dteam', 'biomed', 'cms']
ESA-ESRIN	ldap://pcgridse01.esrin.esa.int:2136/mds-vo-name=local,o=grid	['esr', 'dteam']
FZK-PP	ldap://hik-lcg-se.fzk.de:2136/mds-vo-name=local,o=grid	['atlas', 'alice', 'lhcb', 'cms', 'dteam']
GR-03-HEPNTUA	ldap://se33.hep.ntua.gr:2136/mds-vo-name=local,o=grid	['atlas', 'alice', 'lhcb', 'cms', 'dteam', 'sixt', 'esr', 'see']

[Help page](#)  
[Configure view](#)

## Site Functional Tests report

2005-09-26 -- latest reports

### Test abbreviations

<b>cs</b>	<a href="#">CSH test</a>
<b>swdir</b>	<a href="#">VO software directory</a>
<b>rgma</b>	<a href="#">R-GMA</a>
<b>dirac-test</b>	<a href="#">Dirac Installation</a>
<b>wn</b>	<a href="#">WN host name</a>
<b>ver</b>	<a href="#">Software Version (WN)</a>
<b>ca</b>	<a href="#">CA certs version</a>
<b>rm</b>	<a href="#">Replica Management</a>
<b>votag</b>	<a href="#">VO Tag management</a>
<b>js</b>	<a href="#">Job submission</a>
<b>bi</b>	<a href="#">BrokerInfo</a>
<b>apel</b>	<a href="#">Apel test</a>

### Colours definition

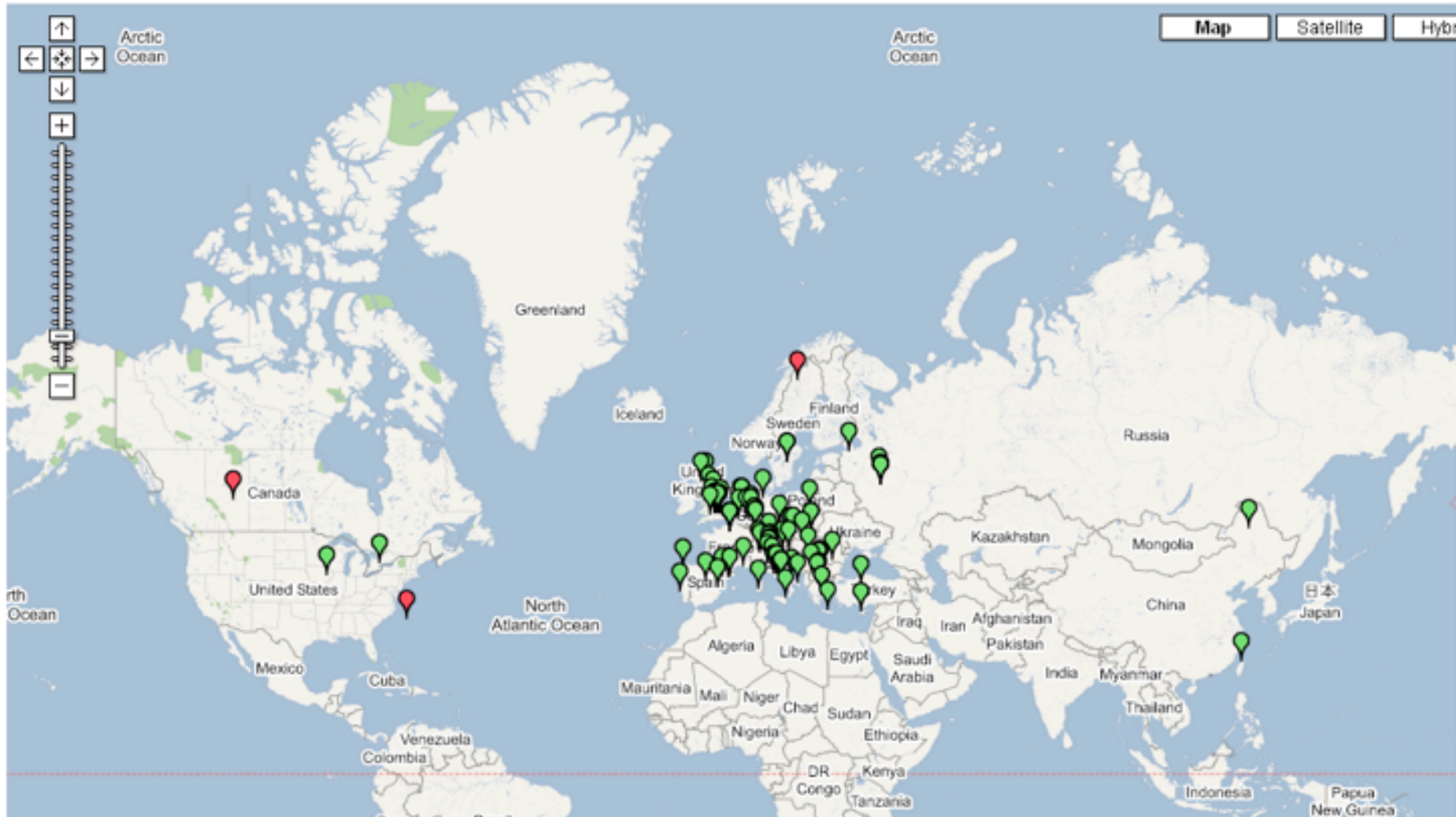
<b>SD</b>	Scheduled downtime	#a3a3a3
<b>JL</b>	Job list match failed	#aab3ff
<b>JS</b>	Job submission failed	#f4876b
<b>CT</b>	Critical tests failed	#f9d48e
<b>NT</b>	Non-critical tests failed	#f2f98e
<b>OK</b>	OK	#b2f98e

### Test summary

	SD	JL	JS	CT	OK	total
dteam	21	5	8	19	116	169
lhcb	20	80	16	2	47	165

	St.	Region	Site Name	Site CE	VO dteam										VO lhcb					
					St.	js	wn	ver	ca	rgma	bi	cs	rm	apel	votag	swdir	St.	js	dirac-test	
1.	<a href="#">SD</a>	SouthEasternEurope	<a href="#">AEGIS01-PHY-SCL</a>	<a href="#">ce.phy.bg.ac.yu</a>	<a href="#">SD</a>	<a href="#">O</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">SD</a>	<a href="#">X</a>	<a href="#">??</a>
2.	<a href="#">JS</a>	Canada	<a href="#">ALBERTA-LCG2</a>	<a href="#">legce01.nic.ualberta.ca</a>	<a href="#">JS</a>	<a href="#">X</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">OK</a>	<a href="#">O</a>	<a href="#">O</a>
3.	<a href="#">JS</a>	China	<a href="#">BEIJING-LCG2</a>	<a href="#">leg002.ihep.ac.cn</a>	<a href="#">JS</a>	<a href="#">X</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">X</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">JL</a>	<a href="#">X</a>	<a href="#">??</a>
4.	<a href="#">OK</a>	SouthEasternEurope	<a href="#">BG-INTRNE</a>	<a href="#">ce1.inrne.bas.bg</a>	<a href="#">OK</a>	<a href="#">O</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">JL</a>	<a href="#">X</a>	<a href="#">??</a>
5.	<a href="#">OK</a>	SouthEasternEurope	<a href="#">BG01-IPP</a>	<a href="#">ce001.grid.bas.bg</a>	<a href="#">OK</a>	<a href="#">O</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">JL</a>	<a href="#">X</a>	<a href="#">O</a>
6.	<a href="#">JS</a>	SouthEasternEurope	<a href="#">BG02-IM</a>	<a href="#">ce001.imbm.bas.bg</a>	<a href="#">JS</a>	<a href="#">X</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">JL</a>	<a href="#">X</a>	<a href="#">??</a>
7.	<a href="#">OK</a>	SouthEasternEurope	<a href="#">BG04-ACAD</a>	<a href="#">ce01.grid.acad.bg</a>	<a href="#">OK</a>	<a href="#">O</a>	<a href="#">I</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">W</a>	<a href="#">O</a>	<a href="#">O</a>	<a href="#">JL</a>	<a href="#">X</a>	<a href="#">O</a>





- Sensor

- New sensor to measure a set of summary information about the resources that a site offers to the Grid

- the sensor runs only in the CE

- Metrics:

- *Real number of WNs managed by an LRMS that are accessible by Grid queues*

- *List of nodes that are DOWN*

- *Real number of JobSlots managed by an LRMS (a JobSlot that is shared among different queues will be counted once)*

- *Average site CPU & Memory usage*

- Refactored sensor for Job Monitoring (much more light to run)

- Server: new flash-based dynamic map with different zoom level

- gLite integration (support for mixed testbed)

- Improvements in privacy and security

## View tickets and test details for a given site

### From complete site list

- please select -

- INTA-CAB-PPS
- AEGISO1-PHY-SCL
- ALBERTA-LCG2
- AUVERGRID
- BEIJING-CNIC-LCG2-IA64
- BEIJING-LCG2
- BG-INSRNE
- BG01-IPP
- BG02-IM
- BG04-ACAD
- BHAM-LCG2
- BIFI
- BITLab-LCG
- BNL-LCG2

View

List of sites is extracted from the GOC database

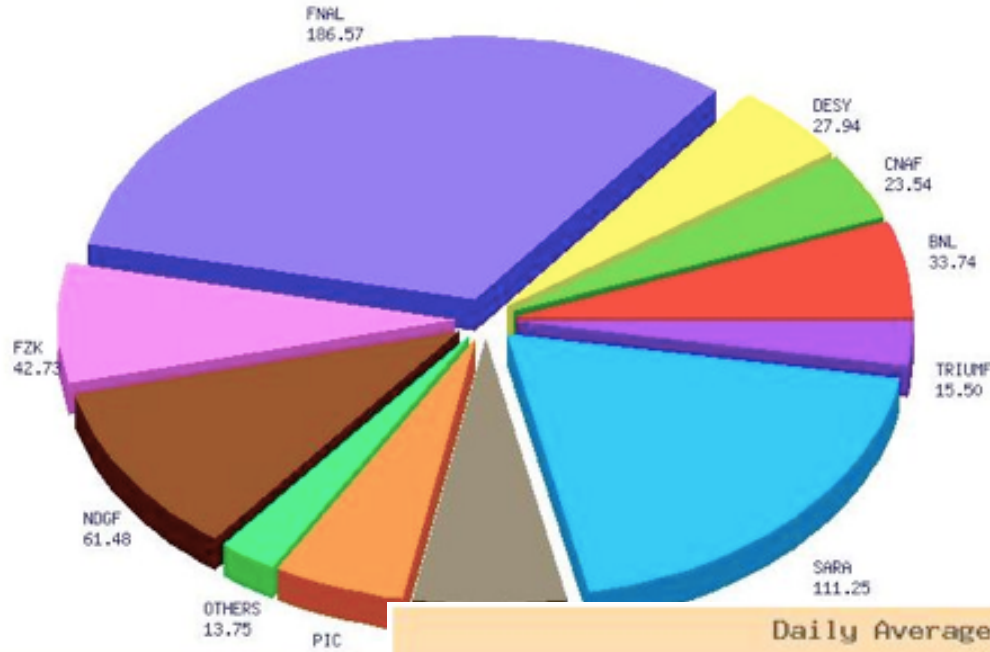
### From Site Functional Tests Results

SFT Results last updated on: **Tue Sep 27 15:40:00 MEST 2005**

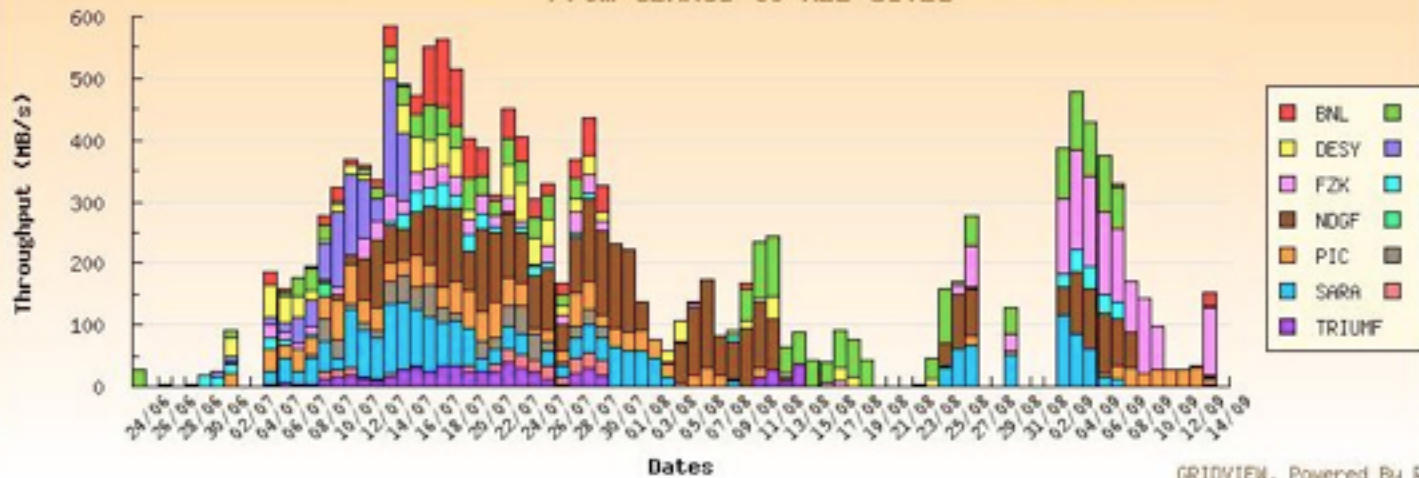
Critical Tests			Job submission Failed			Job List Match Failed		
Sitename	gstat	GGUS	Sitename	gstat	GGUS	Sitename	gstat	GGUS
Taiwan-NCUCC-LCG2	OK		egee.man.poznan.pl	INFO		PAKGRID-LCG2	ERROR	
QMUL-eScience	OK		OSG	NOTE		ru-Novgorod-NOVSU-LCG2	ERROR	
CGG-LCG2	OK		wuppertalprod	OK		WARSAW-LCG2	ERROR	
ru-PNPI-LCG2	OK		OSG	NOTE		ru-IMPB-LCG2	ERROR	
LCG_KNU	WARN		BEIJING-LCG2	OK		OSG	NOTE	
USCMS-FNAL-WC1	INFO		ALBERTA-LCG2	OK				
INFN-FERRARA	NOTE		SARA-LISA	OK				
INFN-ROMA2	WARN							
TW-NCUHEP	NOTE							
csTCDie	ERROR							
scgNUIGie	OK							
Taiwan-LCG2	WARN							
GSJ-LCG2	OK							
SHEFFIELD-LCG2	WARN							
NCP-LCG2	WARN							
prague_cesnet_lcg2	WARN							
RO-01-ICI	INFO							
Taiwan-IPAS-LCG2	WARN							



Daily Averaged Throughput (in MB/s) on 13/07  
From CERNCI to ALL SITES



Daily Averaged Throughput From 24/06 to 14/09  
From CERNCI to ALL SITES



GRIDVIEW, Powered By 5

- **What we are using monitoring for?**
  - to spot the problems (or potential problems) that require actions (CIC-on-duty, ROCs)
  - to measure things and give motivation for improvements
- **How do we do this?**
  - NOT by looking at them at the same time for the whole day!!!
  - In CIC-on-duty: CIC-on-duty Dashboard - SFT and GStat + ticketing system + communication tool, other tools in special cases
  - FCR - removes from BDII sites that fail critical tests
  - Other cases: ... anyway we need something that gives integrated, correlated and processed view
- **How to integrate the monitoring information?**
  - idea of a common “bus” - R-GMA
  - But! R-GMA is not enough without common data schema which allows for synthesis
- **First steps taken:**
  - SFT and GStat are publishing results to R-GMA using **the same** data schema for **summary** information

- **In day-to-day operations:**
  - essential functionality of computing resources (+ client software on WNs) - SFT
  - consistency of the information system - GStat
  - validity of host certificates on the service nodes - Cert. Monitor
  - partially RBs (just some of them) - GOC Job Monitor
  - indirectly other “central” services
- **Other:**
  - fabric level information: CPU loads, running processes, etc. - Gridlce
  - amount of data flowing in the grid - GridFTP log monitoring
  - job monitoring - useful for end users
- **VO specific monitoring:**
  - SFT as a basic framework for VO specific tests
  - thanks to FCR and customized SFT VO can select sites using results from “official” dteam results but also VO specific tests

- **No integrated alarm system**
  - suggestion: work on integration with R-GMA, use rule-based summary generator and something like CIC-on-duty dashboard, in future notification (email, sms)
- **No direct monitoring of “central” services: RB, BDII, RLS, LFC, FTS ...**
  - observed by many people as for example “SFT failure” (all sites red or orange)
  - monitoring tools have to be written
  - BUT! keeping in mind integration with alarm system
- **No real monitoring of storage resources**
  - SFT is testing SEs “indirectly” only and not all of them are covered
  - GridFTP log monitor: information on quantity and not quality
- **How do we want to monitor the monitoring tools? :-)**

- **Some monitoring tools still need to be written - a lot of development and integration work**
- **We definitely need a common data schema for monitoring information to integrate**
- **But we already have covered a lot of areas - time for integration and alarm system**