

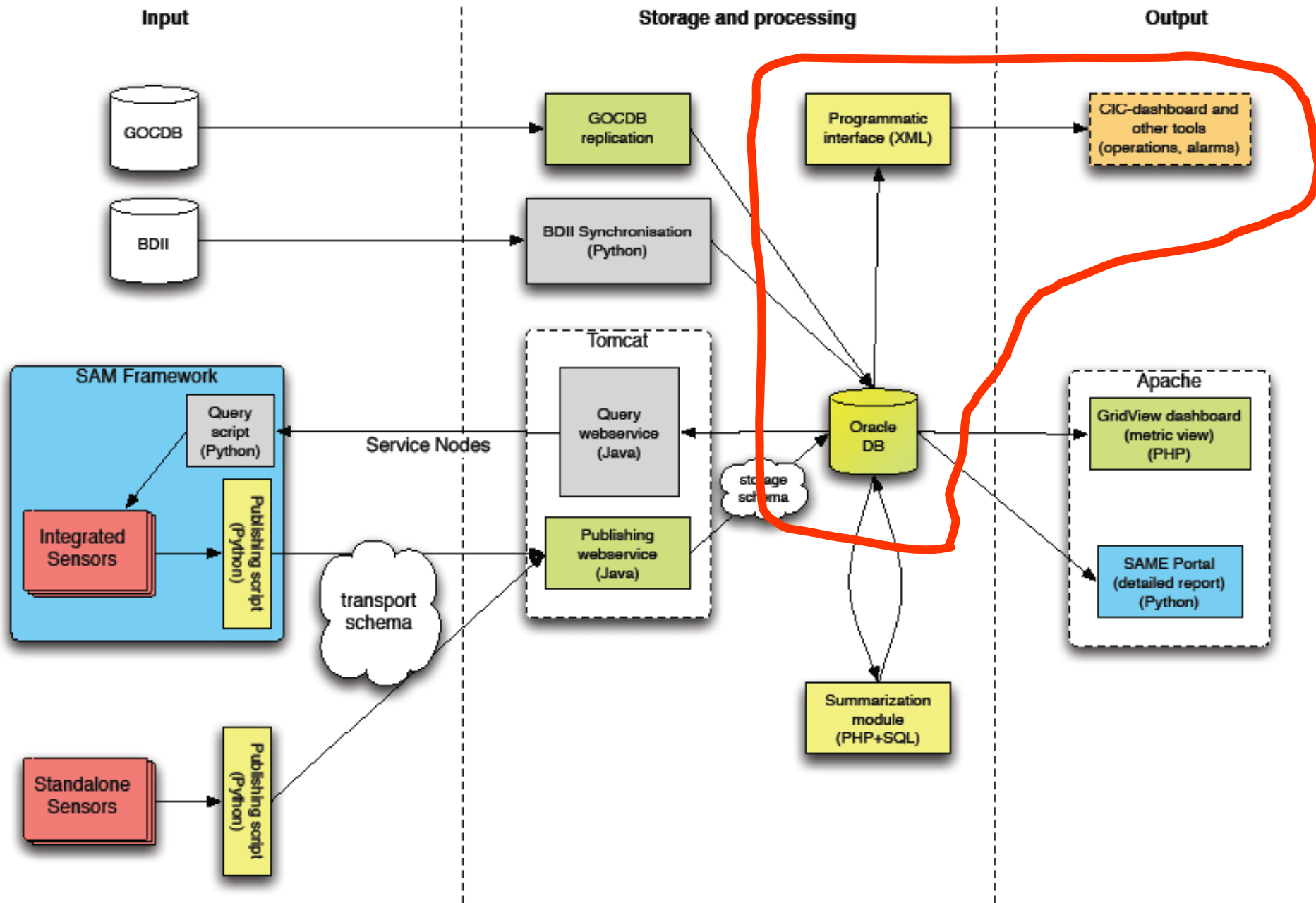
# SAM Programmatic Interface



David Collados

SAM Review  
CERN, 2007

- Introduction
- SAM data exports
  - CIC dashboard
  - CERN SLS
  - T0/T1 metrics interface
  - COD dashboard alarms
  - Miscellaneous queries
- Near future plans
- Issues



- Programmatic Interface description:
  - Queries to extract information from SAM db through URL calls
  - Standardized data types, request and response formats
  - Standardized result format in XML
  - Follow Grid Monitoring Data Exchange Standard

- How it works:
  - Oracle XDK to write XSQL queries
  - Output result in XML
  - If needed, XML transformations with XSLT

```

<?xml version="1.0"?>
<page connection="same_read" xmlns:xsql="urn:oracle-xsql">

  <xsql:set-page-param name="voname" value="{@voname}"/>
  <xsql:set-page-param name="sitename" value="{@sitename}"/>

  <xsql:query>
    SELECT vo.void, vo.voname, site.siteid, site.sitename
    FROM vo, site
    WHERE voname='{@voname}' AND sitename='{@sitename}'
  </xsql:query>
</page>

```

```

- <page>
- <ROWSET>
  - <ROW num="1">
    <VOID>15</VOID>
    <VONAME>OPS</VONAME>
    <SITEID>160</SITEID>
    <SITENAME>CERN-PROD</SITENAME>
  </ROW>
</ROWSET>
</page>

```

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- CIC Operations Portal:
  - Requested: daily critical tests failures
  - Needed for the weekly OPS status reports
  - Major operational issues & points to raise

CIC Home | EGEE Home | EGEE Intranet | Glossary

## CIC OPERATIONS PORTAL

HOME
VO Users
VO management
RC management
ROC management
COD management
OAG management

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**ROC management**

HOME

Site Certification

Dashboard

Alert Notification

SAM Admin's Page

Grid Statistics

Availability of resources

Security Issues

Supported VOs

Data challenges

User Tracking

User support

ROC Report

Weekly Reports Archives

Operation Metrics

enoc

PPS Information

Broadcast Information

**Weekly Operations Status report**

CERN

Reporting Period: 27-04-2007 to 03-05-2007

Last update made by:

Number of sites in region:

New sites:

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**Non-Functional Sites**

Names of sites that were non-functional\*\* during the reporting period

Type	Node name	VO Name	Test name	Status	Since	to	Nb Days & Nb Hours	Relevance status ?
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	27-04-2007 02:10	27-04-2007 03:09	0 0	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	02-05-2007 05:06	02-05-2007 06:09	0 1	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	02-05-2007 22:07	02-05-2007 23:16	0 1	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	03-05-2007 12:05	03-05-2007 13:11	0 1	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	03-05-2007 15:08	03-05-2007 16:11	0 1	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	03-05-2007 21:08	03-05-2007 22:11	0 1	relevant
CT	logce02.nic.uslberta.ca	OPS	CE-stHcg-rm	error	03-05-2007 23:10	03-05-2007 23:59	0 0	relevant

Identified with the following certificate:

DC=ch

DC=ces

OU=Organic Units

OU=Users

CN=collado

CN=485548

CN=David Collado Polidara

Find:

Next Previous Highlight all Match case



- Request: T0/T1s status ~ every 10 mins

Service Level Status overview

Home	Search	KPIs	Tags	Admin	Documentation	Help
------	--------	------	------	-------	---------------	------

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### Grid Tier-1 sites

availability: (more)

percentage: 90%

status: **available**

this service consists of:

- BNL-LCG2 - OPS
- FZK-LCG2 - OPS
- IN2P3-CC - OPS
- INFN-T1 - OPS
- RAL-LCG2 - OPS
- SARA-MATRIX - OPS
- TRIUMF-LCG2 - OPS
- Taiwan-LCG2 - OPS
- USCMS-FNAL-WC1 - OPS
- pic - OPS

availability in the last 24 hours (more):

### Additional information

full name: **Grid Tier-1 sites**

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email: **same-devel@cern.ch**

web site: <http://goc.grid.sini...>

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service managers: Piotr Nyczyk   
 Judit Novak   
 David Collados

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### Availability update

last update: 15:20:48, 10 May 2007  
(7 minutes ago)

expires after: 150 minutes

---

[rss feed with availability and status changes](#)

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### Admin

[admin tools](#)

## • Request: T0/T1s availability

Availability of selected T0 and T1 sites for a particular VO during a period of time, including downtime and unscheduled downtime.

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VO:  From (YYYY-MM-DD):  To (YYYY-MM-DD):

---

<input checked="" type="checkbox"/> CERN-PROD	<input checked="" type="checkbox"/> BNL-LCG2	<input checked="" type="checkbox"/> FZK-LCG2	<input checked="" type="checkbox"/> IN2P3-CC
<input checked="" type="checkbox"/> INFN-T1	<input checked="" type="checkbox"/> NDGF-T1	<input checked="" type="checkbox"/> RAL-LCG2	<input checked="" type="checkbox"/> SARA-LISA
<input checked="" type="checkbox"/> SARA-MATRIX	<input checked="" type="checkbox"/> TRIUMF-LCG2	<input checked="" type="checkbox"/> Taiwan-LCG2	<input checked="" type="checkbox"/> USCMS-FNAL-WC1
<input checked="" type="checkbox"/> pic			

My Own Selection   
  Check All   
  Uncheck All

---

Granularity:     Hourly     Daily

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For bugs and suggestions for improvements, please use [Savannah SAME/SFT pages](#)

http://lcg-sam.cern...

May 2007

Mo	Tu	We	Th	Fr	Sa	Su
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Open Notebook

Microsoft Excel - select\_sites\_excel.xsql-33.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

A1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
3																							
4	Date	CERN-PROD			FZK-LCG2			IN2P3-CC			INFN-T1			RAL-LCG2			SARA-LISA			SARA-MATRIX			
5	5/1/2007	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0
6	5/2/2007	1	0	0	0.92	0	0.08	1	0	0	0.96	0	0.04	1	0	0	1	0	0	1	0	0	0
7	5/3/2007	1	0	0	0.88	0	0.13	0.92	0	0.08	0.67	0	0.33	1	0	0	1	0	0	1	0	0	0
8	5/4/2007	1	0	0	0.92	0	0.08	1	0	0	1	0	0	0.92	0	0.08	0.92	0	0.08	1	0	0	0
9	5/5/2007	0.96	0	0.04	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0
10	5/6/2007	1	0	0	0.96	0	0.04	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0
11	5/7/2007	1	0	0	0.5	0	0.5	1	0	0	1	0	0	1	0	0	0.58	0	0.42	0.58	0	0.42	0.42
12	5/8/2007	0.88	0	0.13	0.71	0	0.29	1	0	0	1	0	0	1	0	0	0.04	0	0.96	0.75	0	0.25	0.25
13	Average	0.97917			0.85938			0.98958			0.95313			0.98958			0.81771			0.91667			
14																							
15	For each site, there are [0-1] values in 3 columns representing:																						
16	GREEN: the availability of the site.																						
17	ORANGE: the scheduled downtime.																						

Ready

### Availability of sites for 'OPS' VO including downtimes (using UTC/GMT)

Date	CERN-PROD			FZK-LCG2			IN2P3-CC			INFN-T1			RAL-LCG2			SARA-LISA			SARA-MATRIX					
2007-05-01	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
2007-05-02	1	0	0	0.92	0	0.08	1	0	0	0.96	0	0.04	1	0	0	1	0	0	1	0	0	1	0	0
2007-05-03	1	0	0	0.88	0	0.13	0.92	0	0.08	0.67	0	0.33	1	0	0	1	0	0	1	0	0	1	0	0
2007-05-04	1	0	0	0.92	0	0.08	1	0	0	1	0	0	0.92	0	0.08	0.92	0	0.08	1	0	0	1	0	0
2007-05-05	0.96	0	0.04	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
2007-05-06	1	0	0	0.96	0	0.04	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
2007-05-07	1	0	0	0.5	0	0.5	1	0	0	1	0	0	1	0	0	1	0	0	0.58	0	0.42	0.58	0	0.42
2007-05-08	0.88	0	0.13	0.71	0	0.29	1	0	0	1	0	0	1	0	0	1	0	0	0.04	0	0.96	0.75	0	0.25
Average	0.97917			0.85938			0.98958			0.95313			0.98958			0.81771			0.91667					

For each site, there are [0 - 1] values in 3 columns representing:

GREEN: the availability of the site.

PINK: the scheduled downtime.

RED: the unscheduled downtime.

This page shows daily site availability, as described at the [SAM Metrics Calculation](#) page.

## Request: SAM Alarms (query & update)

Today is 10/05/2007, it is 14:21 UTC

new alarms	assigned alarms	masked alarms	Total number of alarms
40	79	74	193

### New alarms (40)

ID	Test	Node	Site	Region	Execution Time (UTC)	Weight	Last status	Notification
28050	RB-host-cert-valid	dgrb0.icepp.jp	TOKYO-LCG2	AsiaPacific	2007-05-07 22:21:41	40403	warn	subscription
28481	gRB-host-cert-valid	rb1.ba.infn.it	IINFH-BARI	Italy	09:25:59	40401	error	subscription
28341	RB-host-cert-valid	pcncp24.nep.edu.pk	HCP-LCG2	AsiaPacific	2007-05-09 10:18:23	40400	warn	subscription
28531	BDII-check	PAKBDII.pakgrid.org.pk	PAKGRID-LCG2	AsiaPacific	14:07:27	40400	ok	subscription
28538	FTS-host-cert-valid	fts.cr.cnaf.infn.it	IINFH-T1	Italy	14:19:52	30412	error	subscription
28532	sBDII-sanity	icg-ce.ecm.ub.es	UB-LCG2	SouthWesternEurope	14:07:27	20401	error	subscription
28298	sBDII-sanity	icgce01.triumf.ca	TRIUMF-LCG2	CERN	2007-05-09 02:48:19	20401	warn	subscription
28533	sBDII-sanity	armgrid1.yerphi.am	YerPhi	CERN	14:07:27	20400	ok	subscription
28534	sBDII-sanity	kriit.eenet.ee	EEIet	NorthernEurope	14:09:54	20400	error	subscription
28540	CE-sft-job	ce114.cern.ch	CERII-PROD	CERN	14:20:12	10436	error	subscription
28522	CE-sft-job	goliath25.farm.particle.cz	pragueicg2	CentralEurope	12:30:10	10403	ok	subscription

- Coming from users' requests:
  - Site names, Service names, Service types, Service type status, vo names, service metric status, service metric names per service type, last service status for VO, history of service metric names, etc...
  - All of them described at:  
<https://twiki.cern.ch/twiki/bin/view/LCG/SamDbQuery>

- Last Service Type Status for VO:

```

- <ROOT>
  - <SITES>
    - <SITE name="BUDAPEST">
      - <SERVICE name="grid156.kfki.hu">
        - <SERVICE type="VOBOX">
          - <VO name="Alice" role="executedBy">
            - <SERVICEMETRIC abbreviation="DPD" name="VOBOX-Delegated-proxy-duration">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:08Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="PR" name="VOBOX-Proxy-Renewal">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:04Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="PSR" name="VOBOX-Proxy-Server-Registration">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:07Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="PM" name="VOBOX-Proxy-of-the-machine">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:07Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="SA" name="VOBOX-Software-area">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:09Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="UPR" name="VOBOX-User-Proxy-Registration">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:05Z</TIMESTAMP>
            </SERVICEMETRIC>
            - <SERVICEMETRIC abbreviation="gsc" name="VOBOX-gsiscp">
              <STATUS>ok</STATUS>
              <TIMESTAMP>2007-05-21T06:43:06Z</TIMESTAMP>
          </VO>
        </SERVICE>
      </SITE>
    </SITES>
  </ROOT>

```

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  - T0/T1 metrics interface
  - COD dashboard alarms
  - Miscellaneous queries
- Near future plans
- Issues

- Move from XSQL to JSP pages
- Queries standardization
- Missing queries implementation
- Visualization moved to GridView



- Oracle bug 3467088: XDB queries & XSQL
- XML output faster in your browser

- Grid Monitoring Data Exchange Standard
- Data types, data model, request & response formats.

```

- <ROOT>
  - <SERVICES>
    - <SERVICE name="castorsrm.cern.ch">
      - <SERVICE type="SE">
        - <VO name="OPS" role="executedBy">
          - <TEST name="SE-lcg-cp">
            <TIMESTAMP>2007-02-28T00:51:01Z</TIMESTAMP>
            <STATUS>ok</STATUS>
          </TEST>
          - <TEST name="SE-lcg-cp">
            <TIMESTAMP>2007-02-28T01:53:14Z</TIMESTAMP>
            <STATUS>ok</STATUS>
          </TEST>
          - <TEST name="SE-lcg-cp">
            <TIMESTAMP>2007-02-28T02:52:48Z</TIMESTAMP>
            <STATUS>ok</STATUS>
          </TEST>
          - <TEST name="SE-lcg-cp">
            <TIMESTAMP>2007-02-28T03:57:33Z</TIMESTAMP>
            <STATUS>ok</STATUS>
          </TEST>
          - <TEST name="SE-lcg-cp">
            <TIMESTAMP>2007-02-28T04:52:33Z</TIMESTAMP>
            <STATUS>ok</STATUS>
          </TEST>
        </VO>
      </SERVICE>
    </SERVICES>
  </ROOT>

```

Availability of selected T0 and T1 sites for a particular VO during a period of time, including downtime and unscheduled downtime.

VO:  From (YYYY-MM-DD):  To (YYYY-MM-DD):

CERN-PROD   
  BNL-LCG2   
  FZK-LCG2   
  IN2P3-CC  
 INFN-T1   
  NDGF-T1   
  RAL-LCG2   
  SARA-LISA  
 SARA-MATRIX   
  TRIUMF-LCG2   
  Taiwan-LCG2   
  USCMS-FNAL-WC1  
 pic

My Own Selection   
 Check All   
 Uncheck All

Granularity:  Hourly     Daily

For bugs and suggestions for improvements, please use [Savannah SAME/SFT pages](#)

http://lcg-sam.cern...

May 2007

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

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- Query restrictions if too many heavy requests
  - Restrict data ranges in queries
  - Provide pre-calculated views
- No authentication, authorization, encryption

- Set of queries to extract SAM data
- Standardized input and output
- Used by different people and services



- Questions?