Virtual Organizations Group

At-Large Stakeholder Communities in Open Science Grid

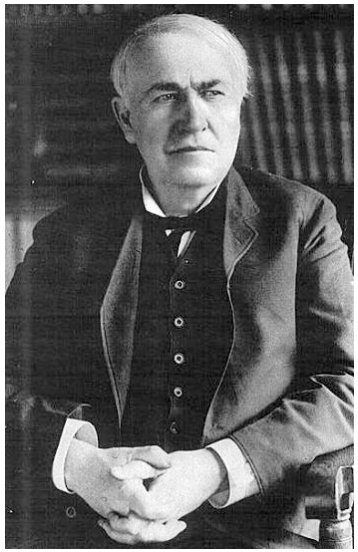
Abhishek Singh Rana

Coordinator

March 5 2009

OSG Council Meeting

Engineering Principle

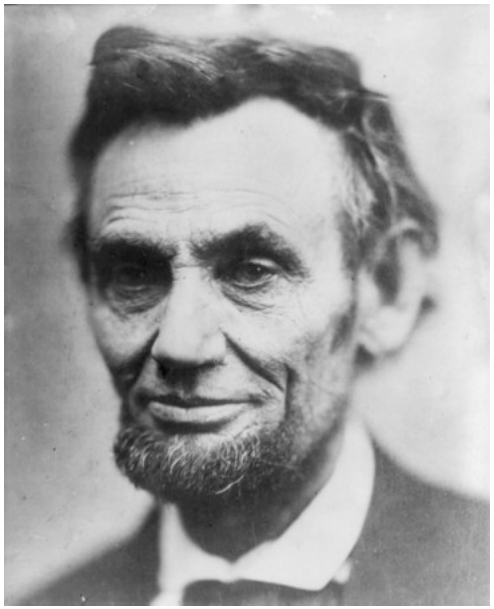


"Being busy does not always mean real work.

The object of all work is production or accomplishment and to either of these ends there must be forethought, system, planning, intelligence, and honest purpose, as well as perspiration."

– *Hon. Thomas Alva Edison (1847-1931)*

Leadership Principle



"I am a firm believer in the people."

– *Hon. Abraham Lincoln (1809-1865)*

VO Group
web space on twiki

Virtual Organizations Group in Open Science Grid

- Strategic Goals
- Meetings
- Activities and Focus Areas
- At-large Consortium Stakeholder Forum
- Contact

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-- Thomas Alva Edison (1847-1931)

Mission

Facilitate, enable, and sustain Science Communities to produce Science using the Open Science Grid Facility.

Weekly VO Forum: Thursdays 1:30 PM Central, Phone: 510-665-5437, ID: 1111 | Minutes
Bi-monthly VO Forum: First Thursday, every other month. Stakeholder virtual round table.
Email Forum: osg-vo-forum@opensciencegrid.org | Archive
Joint Taskforces: Organized, as needed.

At-Large
Consortium Stakeholder Forum

Outline: Vision and Focus

ALICE	X	Latchezar Betev, Federico Carminati, Ron Soltz
ATLAS/USATLAS		Torre Wenaus, Rob Gardner, Michael Ernst
CDF	X	Donatella Lucchesi, Rick Snider, Dennis Box
CMS/USCMS		Frank Wuerthwein, Ian Fisk, Burt Holzman
CIGI	X	Shaowen Wang, Anand Padmanabhan
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Dzero	X	Adam Lyon, Qizhong Li, Joel Snow
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SBGrid	X	Piotr Sliz, Ian Stokes-Rees
STAR	X	Tim Hallman, Jerome Lauret, Levente Hajdu

Virtual Organizations in OSG Consortium

Edited: 03/01/2009
Abhishek Singh Rana

Active, doing Science
Resource Provider, primarily
OSG specific
Inactive, likely to slow down operations
Inactive, likely to be ramping up
X = Focus of At-large Consortium Stakeholder Forum

- **Categories of At-large Stakeholders**
  - Active, doing Science.
  - Resource Provider or Campus Grid.
  - OSG specific.
  - Inactive, likely to slow down.
  - Inactive, likely to ramp up.
  - Potential new entrants.
- **Numerics**
  - Almost 25+.
  - 2 Resource Providers.
  - 8 inactive, ramping up.
  - 2 inactive, slowing down.
  - 12 actively doing Science.
  - Diversity in Form.
  - Diversity in Function.

Outline: Vision and Focus

- **Focus and Objectives in VO Group:**
  - Maintain strong OSG bilateral relations with external collaborators across Consortium periphery.
  - Work with stakeholders to improve OSG utilization (Site resource provisioning, Workflow Efficiency, Job Volume, Data/Storage, Security, End-to-end Accounting).
  - Expedite problem-solving for stakeholders through GOC and all OSG groups.
  - Provide an avenue for operational, organizational, and scientific discussions with each at-large stakeholder.
  - Facilitate stakeholder participation in the OSG software engineering lifecycle.
  - Enable tactical methods for sustenance of communities that have a newly formed VO.
  - Provide a platform for OSG Storage group to work directly with all stakeholders, and thus to strengthen Data-Grid capabilities of OSG.

- **Key Principle:**
  - Build and maintain strong bidirectional channels with stakeholder representatives, further relying on a stakeholder's own internal organization to interface with individual users.

Communities At-Large

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Communities with Shifting Priorities

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CompBioGrid is deploying its site; and trying to regain activity.

GPN may change focus to be a training VO.

GRASE is changing focus to be a research VO.

GUGrid may change focus to be a training VO.

IceCube is a new VO.

Little activity. Encouraging **Mariachi** to ramp up grid operations.

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Communities with Accelerated Pace

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LHC ALICE is starting up operations on OSG..

Geant4 is ramping up operations on OSG.

nanoHUB is working actively to increase production and efficiency of production.

SBGrid has successfully transitioned from initial engagement phase to a production-ready partner.

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Communities with Heavy Volumes

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CDF is one of the largest consumer of CPU hours, and one of largest sustainers of production volume.

D0 is one of the largest consumer of CPU hours, and one of largest sustainers of production volume.

Fermilab is one of the largest provider of resources, and of sub-communities.

GLOW is one of the largest provider of resources, and of sub-communities.

STAR, under peak utilization cycles, is one of the most effective sustainers of production volume.

Joint TaskForces

Joint TaskForces

With guidance from OSG Executive Director, **Joint Task Forces** are planned and executed to enable wide-range technical and procedural matters. Organizational framework of each TaskForce is coordinated by rallying concerted effort and focused drive from consortium stakeholders, as well as, from multiple OSG groups. Due deliberation is performed to enable the stakeholder to sustain the momentum, beyond a successful closure of TaskForce, to maximize the long-term residual impact.

D0-OSG TaskForce	Led to a significant improvement in overall D0 Monte-carlo Event production on OSG Facility.
SBGrid-OSG TaskForce	Worked (1) to enable SBGrid resource infrastructure and (2) to evolve design and implementation of the SBGrid Molecular Replacement science application -- to strengthen each of these to a production-ready level.
ALICE-OSG TaskForce	Working to enable ALICE's specialized AliEn framework and ALICE production on OSG Facility.
nanoHUB-OSG TaskForce	Investigating ways to make workflow improvements, to enable nanoHUB science production to high job volume at high efficiency.
Geant4-OSG TaskForce	Working to enable Geant4's Regression Testing production runs on OSG Facility.

Joint D0-OSG TaskForce

Status	Planned and executed to a successful closure.
Started	Mid of May 2008
Opportunistic Storage	Initiation_of_OpportunisticStorage_for_D0.ppt
Closed	End of September 2008
Residual Impact	D0_Event_Production_volume_on_OSG.ppt

Joint SBGrid-OSG TaskForce

Status	Planned and executed to a successful closure.
Started	Mid of September 2008
Organization & Plan	SBGrid-OSGwide_JointTaskforce_Plan.xls
Closed	Early December 2008
Residual Impact	SBGrid_Production_on_OSG.ppt
Action Summary	SBGrid_summary_of_action.ppt

Joint ALICE-OSG TaskForce

Status	Active.
Started	Early November 2008
Organization & Plan	ALICE-OSGwide_JointTaskforce_Plan.xls
Target To Close	End of April 2009
Ongoing Milestones	December 2008: Jobs successfully submitted using AliEN-OSG common integrated interface at 1 site.
Action Summary	ALICE_summary_of_action.ppt

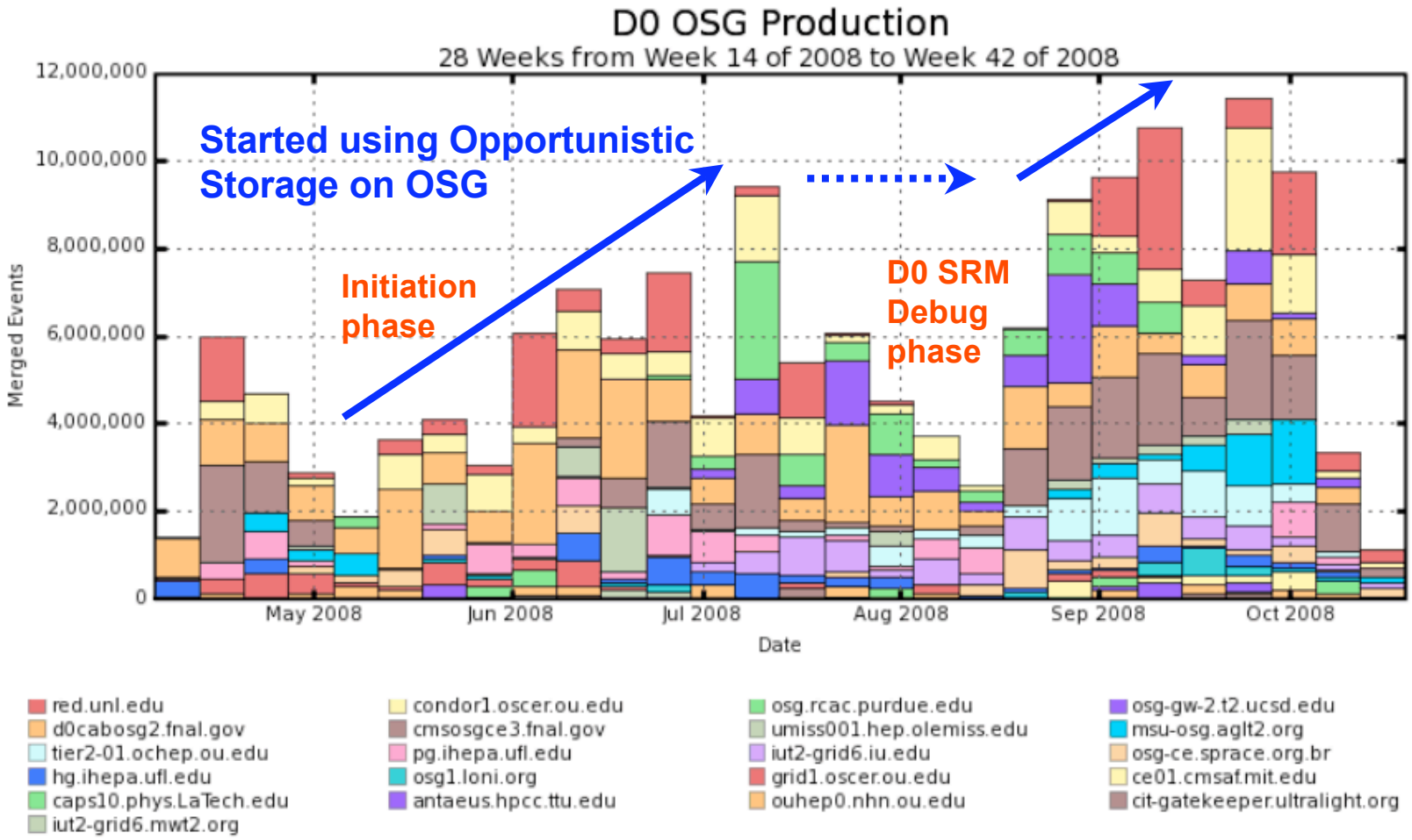
Joint nanoHUB-OSG TaskForce

Status	Active.
Started	Mid of November 2008
Organization & Plan	nanoHUB-OSGwide_JointTaskforce_Plan.xls
Target To Close	End of May 2009
Ongoing Milestones	February 2009: nanoHUB_KeyMilestone_OSG_Site_Validation.ppt
Action Summary	nanoHUB_summary_of_action.ppt

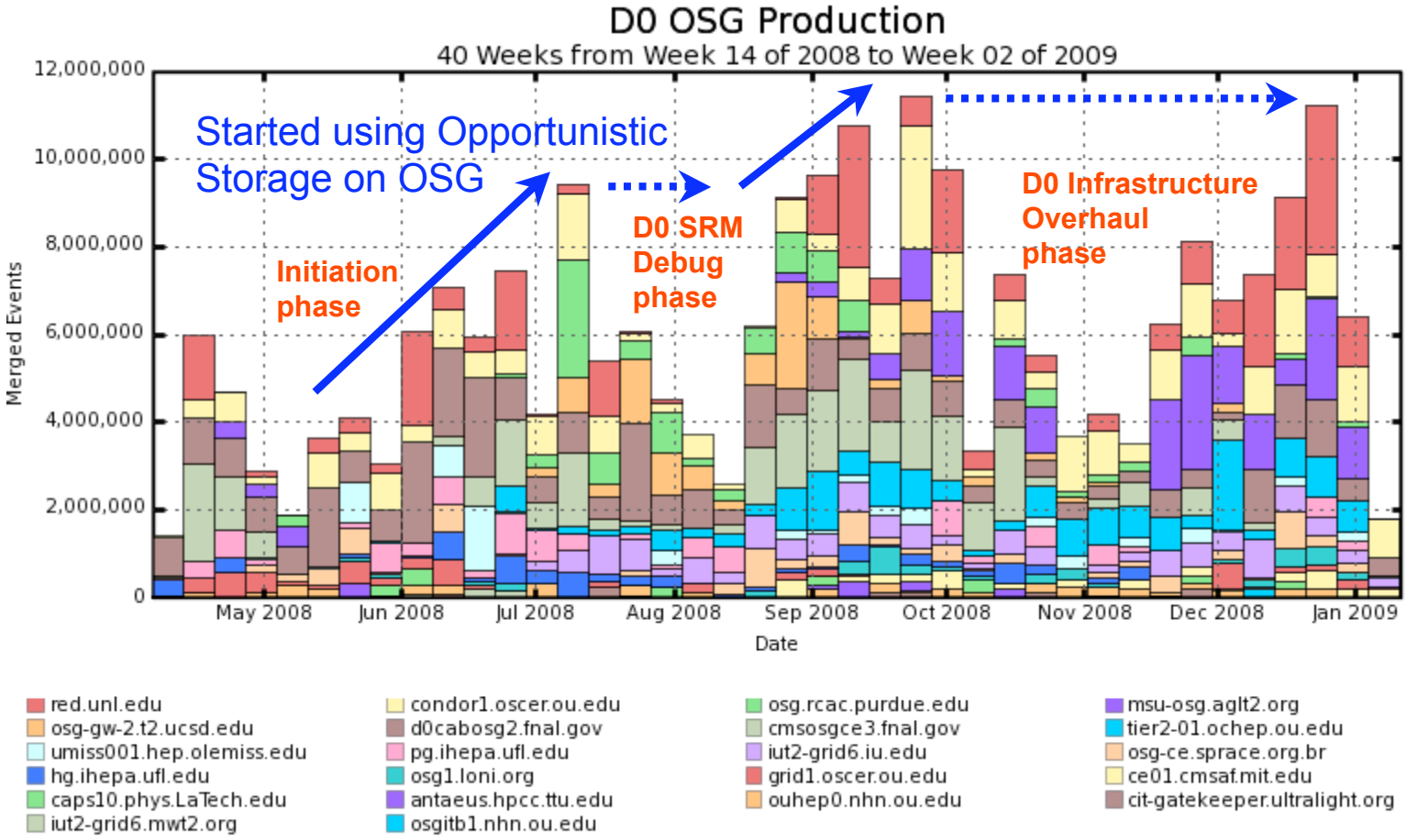
Joint Geant4-OSG TaskForce

Status	Getting started.
Started	Early March 2009
Organization & Plan	In preparation.
Target To Close	Late May 2009
Ongoing Milestones	
Action Summary	

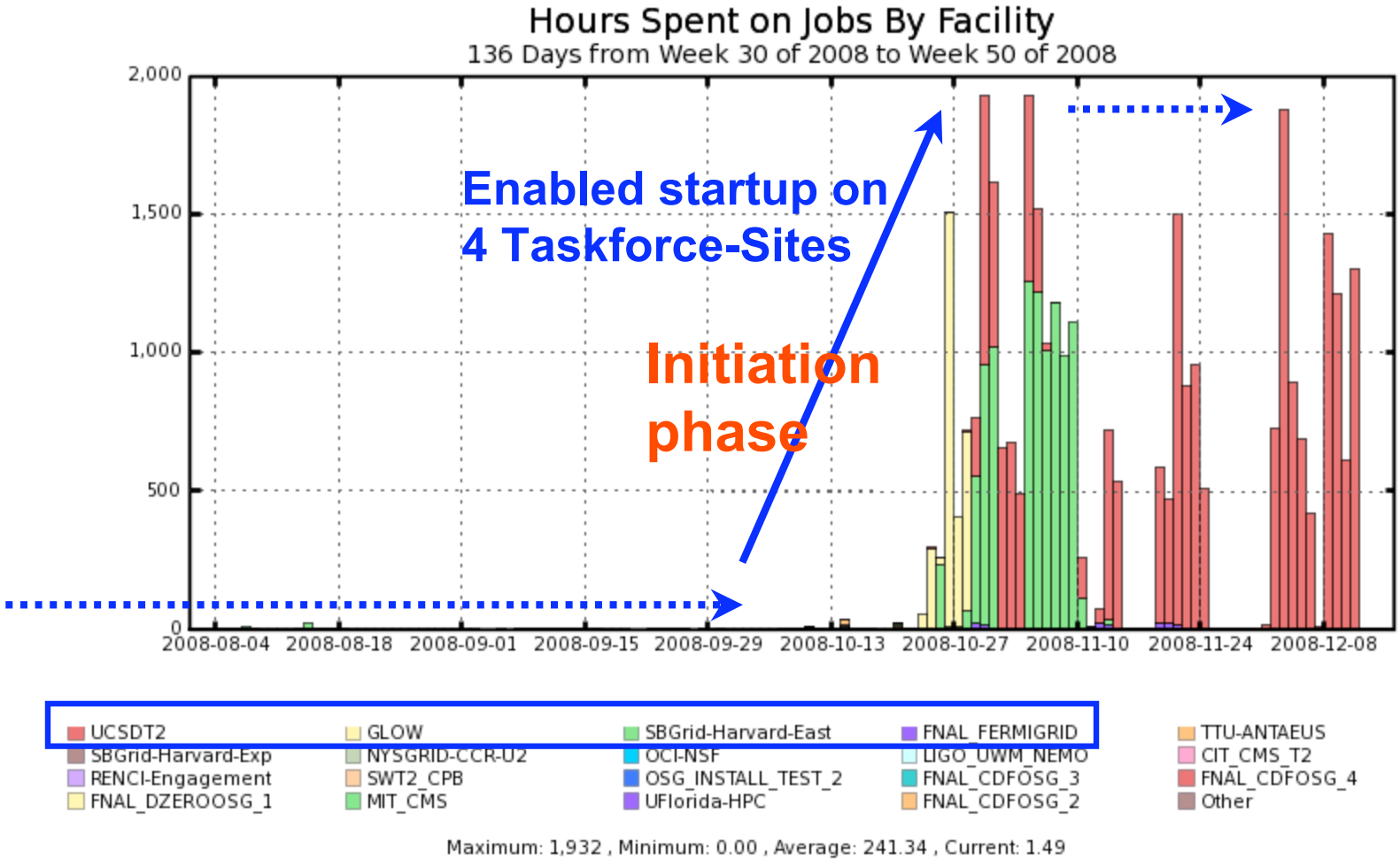
Example:
D0 Event Production volume
(During Joint D0-OSG Taskforce)



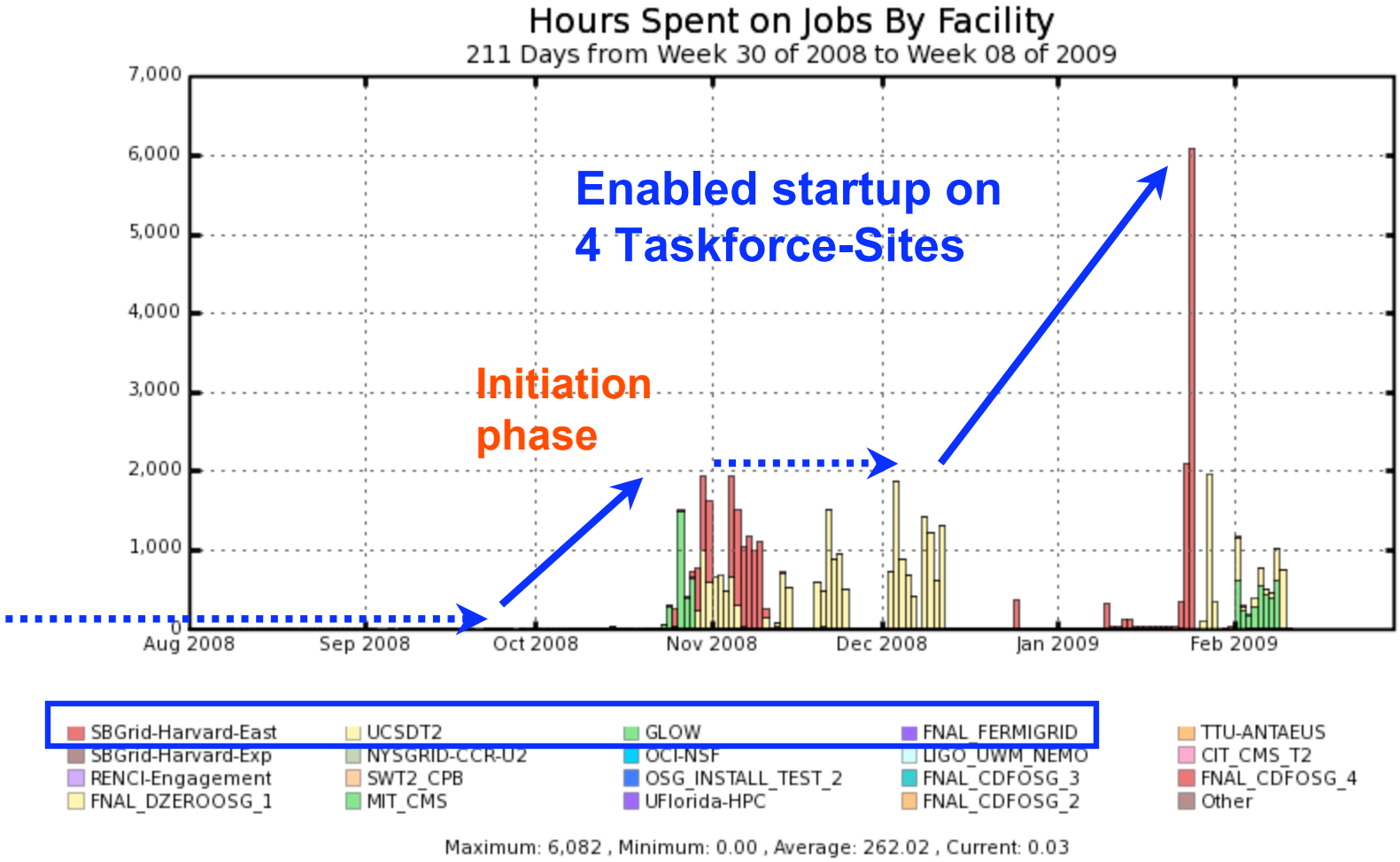
Example:
D0 Event Production volume
(Sustained, overall till date)



Example:
SBGrid Production volume
(During Joint SBGrid-OSG Taskforce)



Example:
SBGrid Production volume
(Sustained, overall till date)



Example: nanoHUB GridProbe Validation of 4 Taskforce-sites

- February 18, 2009
  - Site validation success rate for previous 31 days is 93.4%.
  - Success rate for the month, excluding Purdue & UCSD downtimes, is 98.8%.

nanoHUB GridProbe Validation of Taskforce Sites

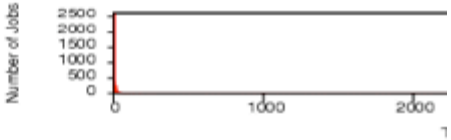
Error Categories, Occurrences, Frequencies

Overall Number of Occurrences	Error Code and Category	Error Occurrence Distribution on each Taskforce-site						
		FERMIGRID	GPGRID_1	GLOW	RCAC	Steele	UCSDT2	UCSDT2-B
231	Code 11 = File stagein failed	0	1	0	40	43	147	0
10	Code 12 = File stageout failed	0	0	7	1	1	1	0
9	Code 24 = Idle time limit exceeded	0	0	0	6	2	0	1
6	Code 127 = Submit side error	0	0	0	0	2	2	2
3	Code 143 = Job killed by administrator	0	0	1	1	0	0	1
15	Code 1 = Miscellaneous	3	0	2	3	2	2	3

Executive Summary of 31 days (ending Feb 17)

Previous 31 days tabulated Tue Feb 17 20:32:45 2009 EST

Success Rate = 93.4 % Actual
Success Rate = 98.8% Excluding Downtimes

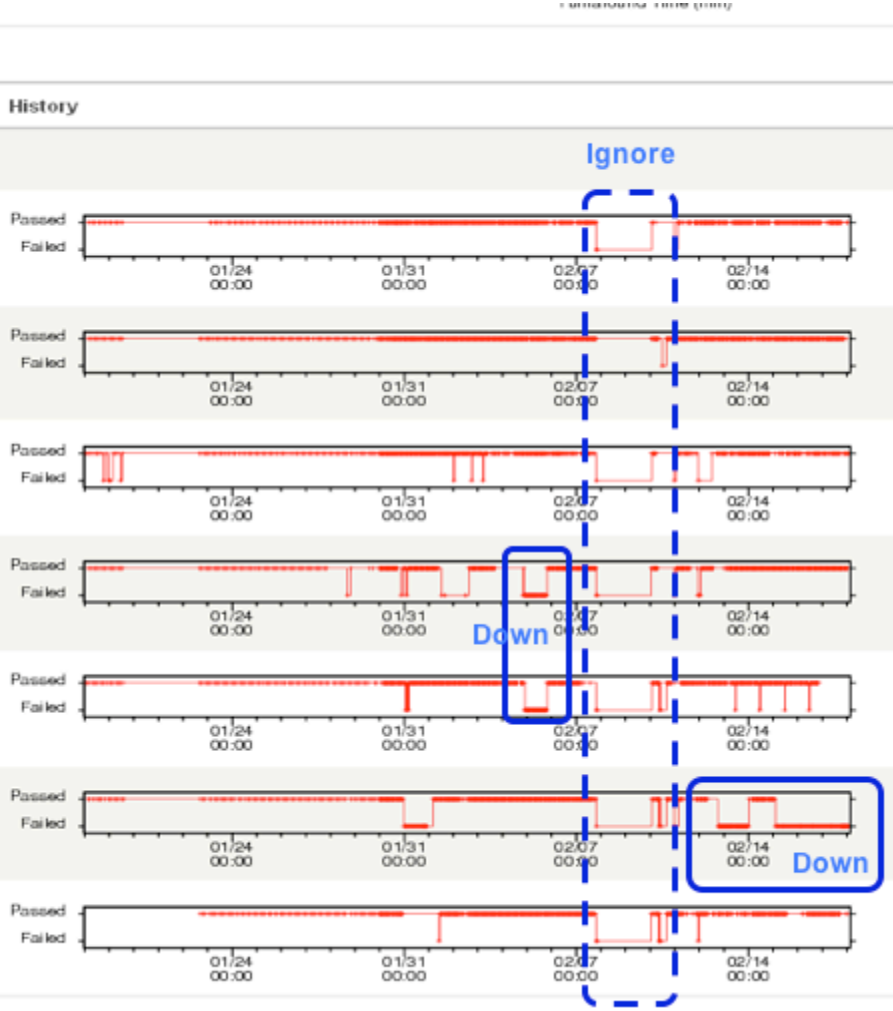


230/274 = Downtimes at Purdue & UCSD

Destination	#Failed	#Successful	Latest Result	History
TASKFORCE	274	3887		

230/274 = Downtimes at Purdue & UCSD

	Destination	#Failed	#Successful	Latest Result	History
274	TASKFORCE	274	3887		
3	FNAL_FERMIGRID	3	548	0	
1	FNAL_GPGRID_1	1	705	0	
10	GLOW	10	505	0	
51	Purdue-RCAC	51	532	0	
50	Purdue-Steele	50	590	0	
152	UCSDT2	152	453	11	
7	UCSDT2-B	7	554	0	



Regular Participation by Stakeholders

Ongoing Activities in VO Group

- In regular communication with all stakeholder that are understood to be active and doing Science. Includes all stakeholders using OSG in production.
- In sporadic communication with mostof the inactive stakeholders.
- Close collaboration and excellent partnership provided by all peer OSG Areas.

- **Weekly VO Forum** Meetings:
  - Coordinated jointly by **Britta Daudert** and **Marcia Teckenbrock**.
  - Scope is highly-focused technical discussions with each stakeholder.
  - Ongoing attendance from **CDF, D0, DES, Engage-VO, Fermilab-VO, ILC, nanoHUB, NYSGrid, OSG-VO, SBGrid.**

- **Bi-monthly VO Forum** Meetings:
  - Stakeholder virtual Round-table.
  - Second such forum being organized in Jan/Feb'09, in two parts over two weeks.
  - General Plans and Reports from **CIGI, D0, DOSAR, DES, Engage-VO, IceCube, STAR** were presented by each stakeholder in the first week. In second week, **CDF, CompBioGrid, Fermilab-VO, GEANT4, GRASE, GUGrid, nanoHUB, NYSGrid**.

- **Storage**: SE sites' community building with OSG Storage. Maintenance of opportunistic storage for **D0**. Provisioning of opportunistic storage for **CDF**.
- **Security/Policy**: General RP/AUP/CA certificates management by VOs.
- **Accounting**: Identifying issues related to sites' configuration and VOs' usage patterns.
- **Assessment of New VO** Requests and Plans:
  - **IceCube** – SteveB/IceCube has started to join meetings. Has a phased ramp-up plan of 1-6 months.
  - **MINERvA** – Doing work in production as a subgroup of Fermilab-VO.
  - **GROW** – Vetting process was performed after registration.

Consortium Stakeholder Input from At-Large VOs to The Council

- Official Report, dated March 5 2009, attached on Agenda web.
- 17 Participating Stakeholders:
  - **Ron Soltz & Latchezar Betev, LHC ALICE**
  - **Donatella Lucchesi & Rick Snider, CDF**
  - **Ion Moraru, CompBioGrid**
  - **Qizhong Li, Dzero**
  - **Nickolai Kouropatkine, DES**
  - **Zeno Dixon Greenwood & Horst Severini, DOSAR**
  - **Eileen Berman, Keith Chadwick, & Steven Timm, Fermilab-VO/FermiGrid**
  - **John Apostolakis, GEANT4**
  - **David Swanson, GPN**
  - **Russ Miller, GRASE**
  - **Jeffrey E DeReus, GROW**
  - **Stephen Moore & David A Cafaro, GUGrid**
  - **Steve Barnet, IceCube**
  - **Helio Takai & John Hover, MARIACHI**
  - **Gerhard Klimeck & Steve Clark, nanoHUB**
  - **Tom Furlani & Steve Gallo, NYSGrid**
  - **Piotr Sliz, Structural Biology Grid**

Consortium Stakeholder Input from At-Large VOs to The Council

(Contd.)

- Official Report, dated March 5 2009, attached on Agenda web.
- Key items shared by each participating Stakeholder:
  - Mission Statement (Driving Force and Vision)
  - Stakeholder Scope: Science, or Resource Provider, or Composite
  - Activity by VO (Quantitative Metrics)
    - VO's Average OSG Utilization: Average CPU Hours/day, Average GigaBytes/day
    - VO's Peak OSG Utilization: Maximum CPU Hours/day, Maximum GigaBytes/day
    - VO's Resource Provisioning to OSG: Amount CPUs, Amount GigaBytes
  - Activity by VO (Qualitative Science Value Output)
    - Science Production: VO-specific metrics, and a detailed description.
  - VO Direction and Plans: Short-term 3-9 months
    - If VO is in start-up mode, please indicate if targeted help and training - e.g., from Engagement, CampusGrids, Education groups in OSG - can be useful to accelerate.
    - If VO is in full operation mode, indicate if activity will sustain, increase, or decrease
    - Estimate the scale of shift.
  - VO Direction and Plans: Long-term 1-4 years
    - Please signify VO's long-term drive; Plans for growth; Value addition to OSG; etc.

Consortium Stakeholder Input from At-Large VOs to The Council

(Contd.)

- Key items shared by each participating Stakeholder:
  - Needs & Expectations from OSG Consortium: Short-term 3-9 months
    - E.g., Software; Operational; Security; Organizational; etc.
    - E.g., Guaranteed expectations - if any - of Resources, Throughput, Services.
    - Make sure to mention timelines and priorities - if any.
  - Needs and Expectations from OSG Consortium: Long-term 1-4 years
    - VO's projected long-term needs from OSG, in direct correlation with VO's long-term drive and plans for growth.
  - Significant Milestones (i) Met in 2008 (ii) Planned in 2009
    - Mention any results that can help gauge OSG's impact on your *Science Portfolio* and productivity - i.e., from use of Resources, Services, Methods, Tools provided by OSG)

Reference Web URLS

- https://twiki.grid.iu.edu/bin/view/VirtualOrganizations
- https://twiki.grid.iu.edu/bin/view/VirtualOrganizations/JointTaskForces (Restricted access to safeguard internal procedures of each Stakeholder)
- https://twiki.grid.iu.edu/twiki/pub/Council/Agenda2009Mar05/OSG_Consortium_-_Stakeholder_VO_Input_to_The_Council_-_ASR_-_Mar2009.pdf