

# ***Monitoring and Accounting for GridNNN project***

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## *Monitoring of GridNNN*

- State of sites and services
  - Availability
  - Real operational state
- Monitoring of user's jobs and tasks
- Keeping history on different system's parameters
- Information representation
  - \_ General infrastructure state in whole
  - \_ Running jobs and tasks
  - \_ Separate sites and services (realtime and history)
  - \_ Visualization of job events
- Notification system

# *Accounting of GridNNN*

- Gathering statistics on CPU time consumed by users and VOs
  - In plain hours, later with allowance of computational system productivity
- Displaying the statistics of CPU resources usage
  - Different report kinds: for user, VO manager, site admin, GridNNN project admins
  - Statistics access roles to protect private information of users and VOs

# ***Information sources for monitoring and accounting***

## Monitoring:

- System of registration of resources and grid services (services entry points for sites, sites' statuses)
- Central Information Index, local site indexes
- Functional tests
- Pilot services (information on jobs and tasks)

## Accounting:

- Pilot + GRAM + local resources managers
  - Globus Audit and Accounting facility is used
- System of registration of resources and grid services (services entry points for sites)

## ***Monitoring of resources***

- State of computational resources by site (based on data from MCS information index(es))
- Slots for tasks
- Jobs (total on site), jobs belong to GridNNN
- Structure and properties of clusters
  - Subclusters, nodes, slots, operation system, architecture
  - Application software
  - Supported VOs (with ACLs, Access Control Lists)
- Monitoring of jobs running on sites (by information from Pilot servers)

# *GridNNN infrastructure on the map*

10 resource centers at the moment in different regions of Russia

- RRC KI, «Chebyshev» (MSU), IPCP RAS, CC FEB RAS, ICMM RAS, JINR, SINP MSU, PNPI, KNC RAS, SPbSU



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State University



# *Simple functional tests of services*

- **Goal:** checks of services' operation
- **Realized:**
  - Simple tests for services registered in Service for Registration of Resources and Services
    - Connection to the declared port of the machine (plane or secured — in depend of specified protocol)
    - Information requests to some services
  - Separate tests scenarios for MDS information indexes and Service for Registration of Resources and Services: information
  - Web page with the history of functional tests results

# *Accounting and job monitoring*

- **Goal:** to get information, both real-time and history, on resources utilization and jobs running on GridNNN infrastructure (by users, VOs, sites)
- **Information sources:** Pilot servers, GRAMs and local resources managers
- **Accomplished:**
  - Collecting data on jobs and tasks in the system (now everything except actual execution time)
  - Accounting information reports in different views: by sites, VOs and single users
- **Plans:**
  - Aggregation of actual job's execution time from all sites
  - Support for all types of local resources managers



## Сайты

Задачи ГридННС по сайтам  
Ресурсы сайтов

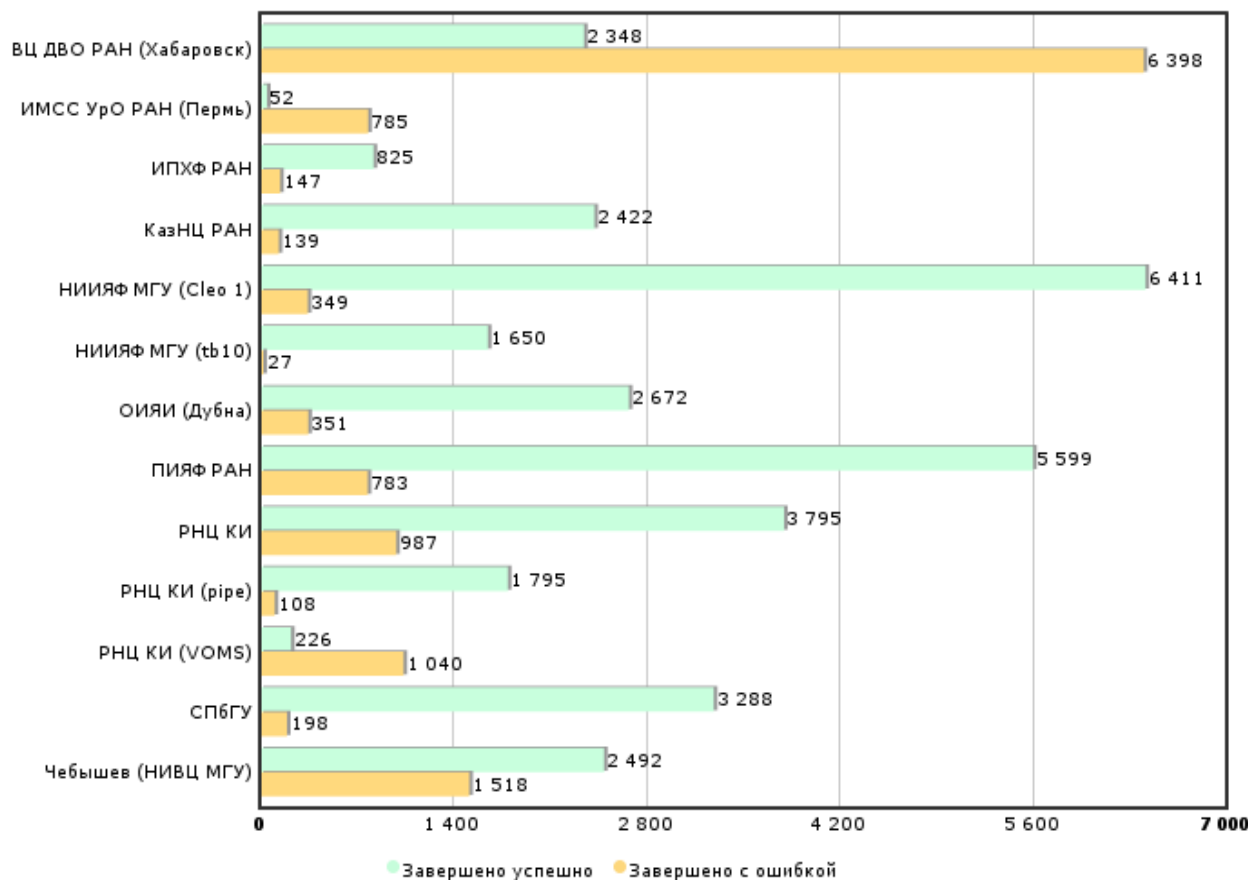
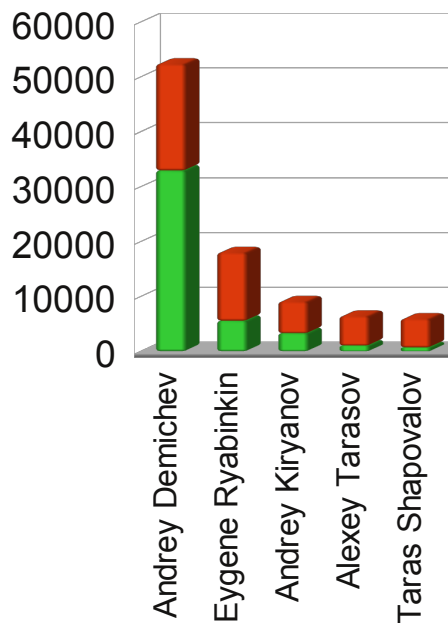
## Задачи ГридННС по сайтам за все время

[Все время](#) [За сегодня](#) [За текущую неделю](#) [За текущий месяц](#) [За текущий квартал](#) [За текущий год](#) [За период](#)

### Запуск заданий пользователями

Всего заданий: 106990

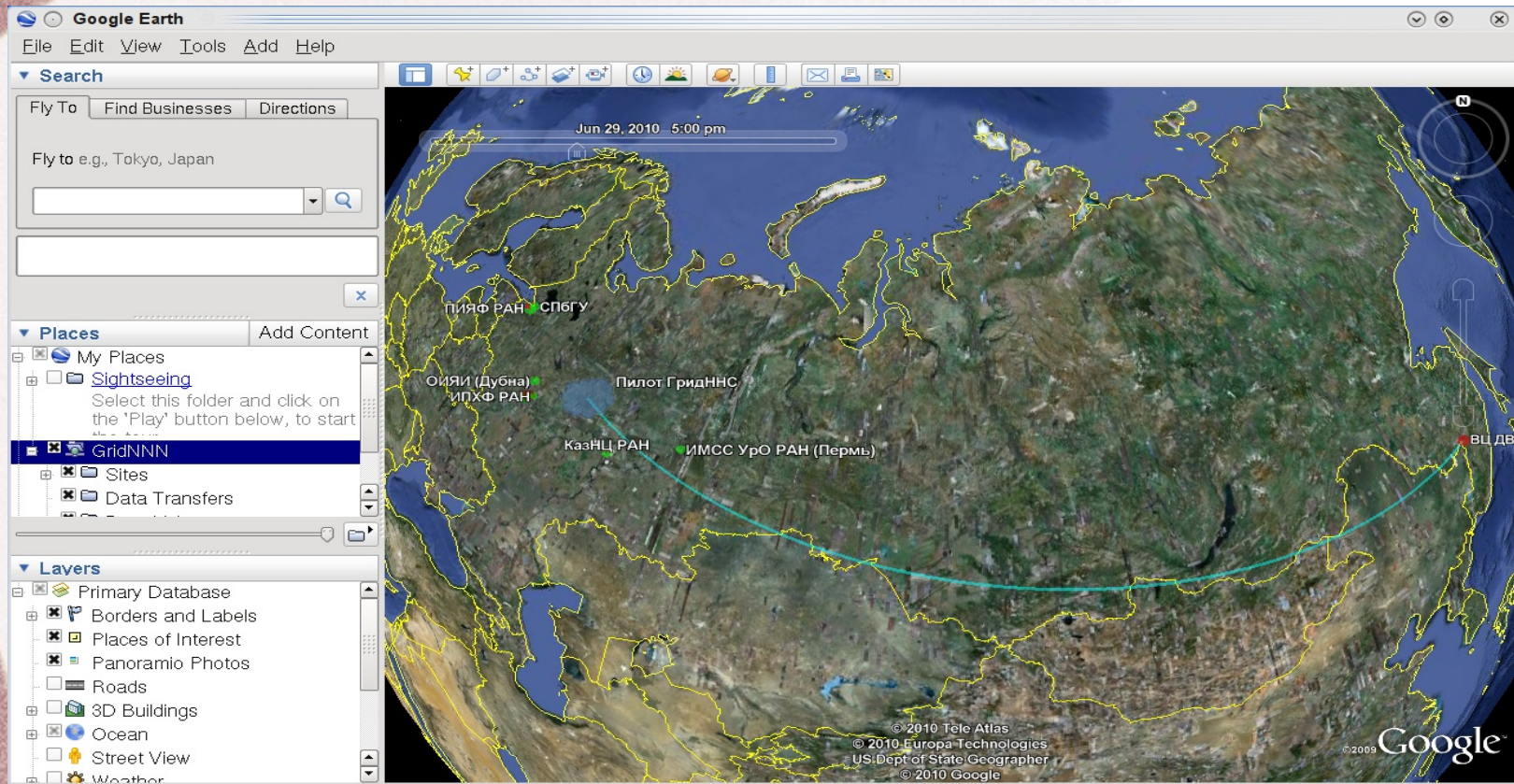
Пользователей с самым большим количеством заданий: 5



	Задачи			Время последнего события
	Завершено успешно	Завершено с ошибкой	Завершено всего	
	2348	6398	8746	30.06.2010 14:12:15

0 8:27:03
) 14:12:59
) 14:12:36
) 14:13:08
0 0:17:16
) 16:12:23
) 14:12:42
0 8:45:06
0 8:25:28
) 14:12:16
) 14:12:25
) 14:26:06

# Jobs events visualization with Google Earth



More details in the talk of Sergey Mitsyn

## *Current state of developments*

- 3 monitoring services (one for production and two development)
- Monitoring's web sites (production, pre-production and development)
- Gathering information from MDS indexes, displaying data on computational resources and jobs queues on sites, storage of history
- Collecting, storage and visualization data on jobs' and tasks' states (by data from Pilot server)
- Jobs monitoring visualization with Google Earth
- Simple functional tests for services
- RSS feed on the infrastructure's state and statistics

## *In progress*

- Aggregation of full accounting information from resource centers (using Globus GRAM Audit and Accounting), data collection from non-standard local resource managers
- New reworked web interface for Monitoring and Accounting service
- Monitoring database optimization

## *Future plans*

- API to access accounting information
- Notification system based on analysis of system events and parameters
- Infrastructure's state visualisation on one page (sites, services, resources)
- Software distribution package for Monitoring and Accounting service (for central service and sensors on sites)

***Thank you for your  
attention!***