



# OSG Strategic Planning & Assessment

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## 1. Overview

The OSG historically has been and will continue to be a stakeholder-driven organization. In previous years for example requirements were drawn from VO liaisons and assembled into annual work plans with input from the Executive team, EB, OSG staff, VO representatives as well as from members of satellite projects. These requirements were turned into tasks represented in a WBS created during the summer staff retreat monthly, each major technical area reporting progress roughly quarterly. This practical approach has worked well in providing a management context for OSG to manage execution of the overall project \cite{OSG Management Plan}.

However there have been some drawbacks in terms of providing views as to the performance of the organization overall, and within technical areas. While the WBS has served as useful organizational tool in terms of defining work, in itself lacks a dimension for measuring progress against strategic goals within task areas. High level metrics have been used to gauge progress \cite{last metrics report}, for example how well a particular VO might be doing in terms of jobs and CPU consumed, or similarly for OSG overall, but often times these metrics do not specifically translate key drivers or dependencies at lower levels in the project. Likewise the information may not be timely, or reported in a way to get an accurate assessment that can be used by the ET and Council to make

strategic decisions, e.g. changes to resource allocations or effort assignments among tasks.

The purpose of this document is to describe a framework and starting points within the strategic plan \cite{strategic plan} against which progress can be measured and meaningful assessments made.

## **2. Strategic Planning Process**

As described in \cite{OSG Management Plan}, the annual planning process begins in June of each year for the upcoming project year. The strategic planning process will result in the following defined tools and resources:

1. The Strategic Plan \cite{strategic plan}
  - a. The Core Plan (the Vision, Objectives, Actions, Critical Success Factors, and Areas of Value)
2. The Annual Strategic Plan (ASP)
3. WBS with milestones and metrics as tied to objectives in ASP
4. Critical Success Factors and associated metrics defined by Area
5. Key Performance Indicators and associated metrics defined by Area

In order to assess progress against strategic objectives it is vital that area coordinators define work plans and specific tasks and milestones in the context of measurement.

## **3. Associating Strategic Objectives with Work and Metrics**

Associated with strategic objectives are a set of high level actions around which work plans are developed by the Area Coordinators. The plans have built-in assessment measures and metrics, suitably chosen and reviewed by the project management team for “naturalness” (i.e. do they make sense? Easily measured? Etc.) and do they relate appropriate to strategic objectives. There should be included “trip-points” which indicate risk thresholds, and which can be encoded as a number and color for score card and dashboard views.

To the extent that work plans are conceived in the context of a measurement and assessment environment, the assessment program for OSG should be straight-forward. However as we have noted previously \cite{doc 1032}, some of the high level key objectives, such as enhancing scientific research, are by nature more indirect and therefore will depend on derived indices that requiring discussion and acceptance by the community.

## **4. Critical Success and Key Performance**

### **4.1. Critical Success Factors and Metrics**

Critical Success Factors (CSFs), and associated metrics, will be identified at all levels – Consortium, Project, Satellites and from collaborating scientific stakeholders. These are factors which are within the critical path that will determine overall success of the

Consortium. Not meeting these would be considered failure on the part of the Consortium and wider collaboration.

#### 4.2. Key Performance Indicators and Metrics

Key Performance Indicators (KPIs), and associated metrics, will be identified at all levels – Consortium, Project, Satellites and from collaborating scientific stakeholders. These are specific milestones, events, and metrics which provide the best information about meeting strategic goals.

### 5. Assessing Strategic Progress

The job of assessment is to measure progress against the strategic plan and provide tools for the ET, Council and Area Leads which facilitates this communication. one framework in which assessment processes take place is the so-called PDCA (Plan, Do, Check, Act) model as show below.

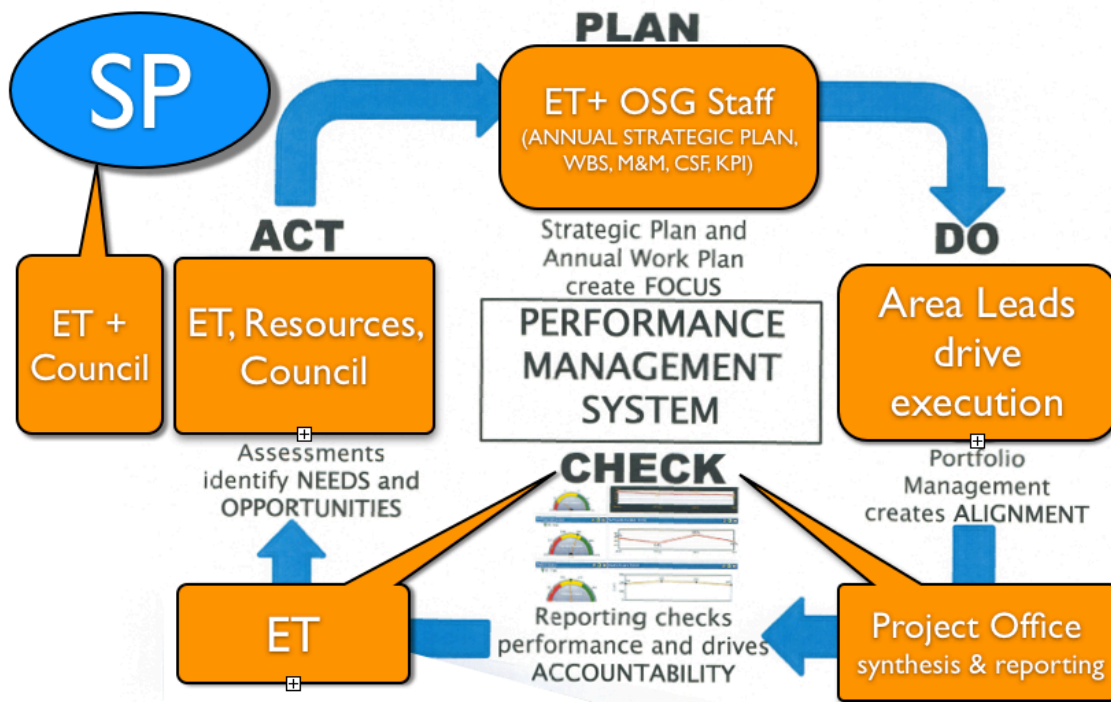


Figure 1 PLAN, DO, CHECK, ACT (PDCA) Model as applied to OSG.

In this model, adapted from NEESGrid, we can envision the following for the OSG context:

1. Plan. This is the high level strategic planning for OSG in its various layers: Consortium, Project and Satellite projects. There is an overall, high level OSG Consortium plan that encapsulates the vision and high level goals. In addition

there are Annual and quarterly-updated, as dictated by the OSG Management Plan\cite {}, as developed in the annual planning retreat and reviewed periodically. During this stage the Area Leads and persons responsible for various components of the program of work define the measures to be tracked against the strategic plans (both Project and Consortium).

2. Do. This is the execution of the program of work as coordinated by the Area Leads with oversight from the ET, EB as appropriate. Work portfolios are kept in alignment with overall strategic goals as specified in the plan.
3. Check. Reported metrics from Area Leads, and elsewhere as appropriate, are collected into systems from which timely views can be generated so as to give an accurate picture as to progress. These are provided by the Project Office and Assessment Lead in particular and are reviewed by the ED, AED, and full ET frequently.
4. Act. Assessments of Consortium, Project and Satellite performance in terms of progress against strategic goals are made involving the ET, Resource Manager and Council as appropriate. When applicable changes to the strategic plan and applied resources are made to address misalignments, needs, and opportunities.

### **5.1. The OSG Scorecard**

The notion is to provide an at-a-glance summary of the state of performance at a given point in time. Balanced Scorecards have been developed and used by many organizations in many different contexts to achieve this.

| OSG BALANCED SCORECARD                        |             |  |              |               |                       |                     |         |          |          | BSC-Prototype |          |           |           | MEETS OR EXCEEDS |  |  |
|---|-------------|--|--------------|---------------|-----------------------|---------------------|---------|----------|----------|---------------|----------|-----------|-----------|------------------|--|--|
| GOAL AREA                                     | GOAL OWNERS | METRICS                                  | METRICS UNIT | METRICS OWNER | COMMUNITY STAKEHOLDER | STRATEGIC OBJECTIVE | WBS KEY | Y1Q1 ACT | Y1Q2 ACT | Y1Q3 ACT      | Y1Q4 ACT | COMPLETE  |           | PERFORMANCE      |  |  |
|   |             |  |              |               |                       |                     |         |          |          |               |          | Y1 TARGET | Y2 TARGET |                  |  |  |
| VISION: DISTRIBUTED HIGH THROUGHPUT COMPUTING | ET          | # OSG US CYBER ENDPOINTS                 |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | OSG US CYBER CPU CAPACITY SERVED         | CPU-HR       |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | OSG US CYBER STORAGE SERVED              | TB           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | OSG US CYBER CPU FRACTION                | %            |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SITES (TOTAL)                      |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SITES (CLIENT)                     |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SITES (STORAGE)                    |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SITES (CE)                         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG CE ENDPOINTS                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SE ENDPOINT                        |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG CACHE ENDPOINTS                    |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG UNIVERSITIES                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG LABORATORIES                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG REGIONAL GRIDS                     |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG INTERNATIONAL SITES                |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG INTEROPERATING GRIDS               |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # OSG CAMPUS GRIDS                            |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # OSG CLOUD ENDPOINTS (RESEARCH)              |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # OSG CLOUD ENDPOINTS (COMMERCIAL)            |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # OSG CLOUD GATEWAYS                          |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| FACILITY                                      | AL          | CPU CAPACITY SERVED (TOTAL)              | CPU-HR       |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CPU CAPACITY SERVED (DEDICATED)          | CPU-HR       |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CPU CAPACITY SERVED (SHARED-OPP)         | CPU-HR       |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CPU UTILIZATION (TOTAL)                  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CPU UTILIZATION (DEDICATED)              |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CPU UTILIZATION (SHARED-OPP)             |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | STORAGE CAPACITY SERVED (TOTAL)          | TB           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| STORAGE CAPACITY SERVED (DEDICATED)           | TB          |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| STORAGE CAPACITY SERVED (SHARED-OPP)          | TB          |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| STORAGE CAPACITY SERVED (CACHED-OPP)          | TB          |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| PRODUCTION                                    | AL          | # VOS PART. WEEK MTGS                    |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # VOS PART. DEV TO ACTIVE                |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # ENGAGEMENT USERS                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # CAMPUS GRIDS ENGAGED                   |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # GRIDS DEPLOYED                         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # CLOUDS DEPLOYED                        |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| CPU CAPACITY OF CG SERVED                     | CPU-HR      |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| STORAGE CAPACITY OF CG SERVED                 | TB          |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| SYSTEMS                                       |             | CE PERFORMANCE: JOB STARTUP RATE         | HZ           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | CE PERFORMANCE: JOB CAPACITY             |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | SE PERFORMANCE: TRANS RATE               | HZ           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | GLIDEIN PERFORMANCE: JOB CAPACITY        |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | GLIDEIN PERFORMANCE: JOB RATE            | HZ           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | GLIDEIN PERFORMANCE: VO CAPACITY         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| WORKLOAD                                      | AL          | GLIDEIN PERFORMANCE: SITE CAPACITY       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | GLIDEIN PERFORMANCE: USER CAPACITY       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | PANDA PERFORMANCE: JOB CAPACITY          |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | PANDA PERFORMANCE: JOB RATE              | HZ           |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | PANDA PERFORMANCE: VO CAPACITY           |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | PANDA PERFORMANCE: SITE CAPACITY         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| USERS   | AL          | # TOTAL OSG USERS                        |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG USERS VIA GLIDEIN                  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG USERS VIA PANDA                    |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG USERS DIRECT                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| NETWORK & THROUGHPUT                          | AL          | # PERSONAR DEPLOYMENTS (TOTAL)           |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # THROUGHPUT SERVC DEPLOYMENTS           |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # UNIVERSITIES PARTICIPATING PSD         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # LABORATORIES PARTICIPATING PSD         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # CLOUD DEPLOYMENTS PSD                  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # BIG SITES MEASURED                     |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # INTERMEDIATE SITES MEASURED            |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # SMALL SITES MEASURED                   |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # BIG SITES TP MAX                       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # INTERMEDIATE SITES TP MAX              |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # SMALL SITES TP MAX                     |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # SITES LHCONE                                |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # SITES OSC                                   |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| TRAINING                                      | AL          | # TRAINING EVENTS                        |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # TRAINING EVENTS (USERS)                |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # TRAINING EVENTS (INFRASTRUCTURE)       |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # TRAINING PARTICIPANTS (USERS)          |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # TRAINING PARTICIPANTS (INFRASTRUCTURE) |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # ONLINE PARTICIPANTS                    |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # TRAINING VO/COMMUNITIES PARTICIPATED        |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| SCI IMPACT & PUBLIC AFFAIRS                   | ET          | # OSG STAFF PUBLICATIONS                 |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG CITED PUBLICATIONS                 |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG H-INDEX                            |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG SCIENCE DISCIPLINES SERVED         |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG FACULTY RESEARCH                   |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
|   |             | # OSG ISGTW ARTICLES                     |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |
| # OSG NEWS MENTIONS                           |             |  |              |               |                       |                     |         |          |          |               |          |           |           |                  |  |  |

Figure 2 A prototype of a Balanced Score Card (BSC) for OSG.

In Figure 2 we show a BSC for OSG where we have included many of the traditional metrics tracked by OSG. Its major features are: Goal Areas, a rough categorization that should follow those as defined in the strategic plan; Goal Owners, the principal responsible for goals to be tracked; metrics associated with strategic goals; metrics

owners (may be different that goal owners, delegated by the area leads, ET, or others as appropriate; Community Stakeholder – those group(s) particularly impacted or associated with the strategic goals or specific metrics; strategic objective – these are named strategic objective(s) most closely associated with the goals and metrics; WBS key – associated keys which index the metrics back to associated WBS elements (these could be WBS at various levels: Consortium, Project, and Satellite, as appropriate); quarterly actual values of the measured and reported metrics; yearly targets – two years given for context, which can be used for trend analysis; performance flags – color coded, to give an indication of that current performance state.

## 5.2. The OSG Dashboard

The notion here is to provide a set of operational gauges relating to performance, giving not only a completed/good/at risk warning status indicator but additional trending data with endpoints, high and low water marks (eg. risk confidence levels), and other warning levels (think temperature gauges).

## 6. References

1. {OSG Management Plan} OSG Project Management System Overview (OSG Document 850-v4), May 2011, <http://osg-docdb.opensciencegrid.org/cgi-bin/ShowDocument?docid=850>
2. {year 3 metrics} OSG Metrics Year 3, OSG Document 887, November 2009, <http://osg-docdb.opensciencegrid.org/cgi-bin/ShowDocument?docid=887>
3. {strategic plan} The OSG Strategic Plan (OSG Document xxx), June 2011
4. {doc 1032} Assessment Strategies in OSG, March 2011, <http://osg-docdb.opensciencegrid.org/cgi-bin/ShowDocument?docid=1032>

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### Revisions:

|   |               |     |   |
|---|---------------|-----|---|
| 0 | June 10, 2011 | RWG | Opened document, outline  |
| 1 | June 23, 2011 | RWG | Re-titled and scoped to focus on assessment activities associated with the OSG Strategic Plan document (in preparation) |