WBS 2.3.2 RACD Program Plan PY1

Requirements Analysis and Capability Delivery (WBS 2.3.2)

The RACD team facilitates the integration, maintenance, and support of cyber-infrastructure capabilities addressing user technical requirements. The process begins by preparing Capability Delivery Plans "CDPs" that describe the technical gaps in XSEDE's prioritized use cases. To fill the gaps we evaluate/test existing software solutions, engage with software providers, and facilitate software/service integration. To ensure software/service adoption and ROI we will involve users and service providers/operators in an integration process that uses engineering best practices and instrument components to measure usage. Once components are integrated, RACD will facilitate software maintenance and enhancements in response to evolving user needs and an evolving infrastructure environment.

Table 5-2: Area Metrics for Requirements Analysis and Capability Delivery

Area Metric	PY6 Target	Sub-goal Supported
# of capability delivery plans prepared for prioritized use cases	7	Create an open and evolving e- infrastructure
# of CI integration assistance engagements	6	Create an open and evolving e- infrastructure
User rating of components delivered in production	4 out of 5	Create an open and evolving e- infrastructure
Operator rating of components delivered for production deployment	4 out of 5	Create an open and evolving e- infrastructure
Software/service provider rating of our integration assistance	4 out of 5	Create an open and evolving e- infrastructure
Responsiveness to defect and support requests	45 days or less	Provide excellent user support

RACD helps Create an open and evolving e-infrastructure by integrating components that support XSEDE use cases. The first key activity in that process involves preparing Capability Delivery Plans "CDPs" that detail how we plan to address software capability gaps in XSEDE prioritized use cases. Because capabilities can vary in complexity and may contain few or many gaps, we have picked a modest target of 7 new CDPs in PY6. As we document and prioritize new XSEDE use cases we will address as many as we can given our current staffing levels and the availability of software partners.

Some capability gaps may require engaging with current or new software partners. Our goal is to engage with software partners to integrate at least 6 significant new components, or significant expansion of existing components.

Based on XSEDE 1 lessons learned, our XSEDE 2 engineering process further improves both user and service provider engagement during the capability integration process. Our goal is that users and software/service operators will rate components 4 out of 5, and that external software/service providers will also rate the assistance we provide them to be 4 out of 5. This will be an interesting target since many components will be integrated by software partners that we work with, so this target will be affected directly by the quality of the products, the engagement of the software partners, and our ability to assist those software partners in raising their quality and engagement.

Once components are integrated and in use, we aim to facilitate timely support and maintenance requests by informing users of the solutions to issues in 45 days or less. We anticipate some problems may be resolved much more quickly, but this goal factors the time needed to investigate and resolve more complex issues.

RACD will focus on use cases given high and medium-high priority by the UREP in early 2016, and on core capabilities from the proposal. We will use CDPs to identify capability gaps and select activities based on feasibility, user impact, and resource availability.

Ongoing Activities

Activities marked with an '*' below were originally planned for XSEDE 1 PY5 but had to be cancelled/delayed. These activities are now planned for XSEDE 2 PY1 because they were prioritized by the UREP.

New Activities

- Data
  - Data Analytics Resources and Information - Enable discovery of XSEDE data analytics resources, software, and usage examples.
  - Large data movement by gateways - Assist science gateways in leveraging large data movement capabilities delivered by XSEDE 1.
  - Data Preparation - Provide capabilities to select, clean, supplement, integrate, format, and model data. Users should be able to gather from local or remote sources, manipulate, translate and organize their data as needed for data mining, modeling or analysis activities.
- Security:
  - Group management services* - Implement XSEDE group management services using Globus.
  - User identities and authentication - Enable other XSEDE services besides the User Portal to use XSEDE identity and group management services.
  - Science gateway user authentication and Identity Management - Enable science gateways to use XSEDE identity and group management services.

- InCommon-based authentication* - Authenticate to XSEDE resources and services using federated identities and two factor; web single sign-on; and unified and extensible group manage services. Register an XSEDE identity provider with InCommon, under XSEDE's existing InCommon membership, so that XSEDE identities and attributes can be used to interoperate with other federated services in the US (via InCommon) and globally (via eduGAIN).
- Information Services
  - Provide and access resource information* - Enhance level 1, 2, and 3 resources, software, and services publishing and discovery. Implement science gateway software and service publishing and discovery.
- HPC
  - Use one or multiple HPC systems - Explore opportunities to enhance traditional access to one or multiple HPC resources.
- Testing
  - Streamline evaluation and testing infrastructure and tools - Build virtual clusters and stock XSEDE environment VMs to enable XSEDE component evaluation and testing.
- Engineering
  - Promote a growing ecosystem of XSEDE integrated software and services using the XSEDE Community Software Repository (XCSR).

<u>Discontinued Activities</u>

XSEDE will no longer fund maintenance and enhancement to the XSEDE Wide File System (XWFS), Genesis II, and UNICORE. However, we anticipate that Genesis II and UNICORE will continue to be made available in XSEDE by the software providers and by resource operators.