

Scope of Work

Intranet Operating Environment

1. Purpose

The Army Research Laboratory (ARL) and the Aeronautical Systems Command (ASC) Major Shared Resource Centers (MSRC) Programming Environment and Training (PET) Program propose to establish an Intranet Operating Environment (IOE) that facilitates day-to-day operations. Development of a PET IOE will facilitate PET project management, enable effective dissemination of information to members of the PET community and facilitate remote collaboration. The IOE will serve as a single access point where all members of the PET community can access information about the PET program and related research efforts. In addition, the IOE will provide tools to support project execution through collaboration, document repositories, application access, and database access. The IOE will be deployed to each center as a unique deployable tool in two phases; the first phase for PET activities, and the second phase for MSRC activities.

2. Summary Scope of Work

2.1. Introduction

Leveraging the lessons learned in development of the Alliance Intranet, the IOE will be implemented for use by ARL/ASC MSRC PET to support collaboration among the ASC/ARL MSRC PET team and MSRC HPC users. The IOE will be implemented incrementally by providing increasing capability as applications and tools are identified which meet user needs. This Summary Scope of Work describes capabilities to be provided in the first phase of the IOE development. Phase II scope of work will be a separate increment of work that will deploy the IOE to the MSRC for management of site infrastructure, integration, and sustainment.

2.2 System Users

The users of the initial IOE include PET Management, PET Academic Partners, and HPC Users at ARL and ASC. Initial implementation of the IOE will focus on a subset of this user set and will expand to all users as capabilities are added. The IOE will also be designed to enable the addition of users from the CEWES and NAVO MSRC PET sites.

2.2. Capability Categories

There are a number of potential capabilities that could be provided by the IOE to support the PET Community. The capabilities identified so far fall within five major categories: MSRC PET Management; MSRC PET Communications; Computational Technology Areas; Collaboration Tools; and HPC User Support. Each of these categories are listed and described as follows:

2.2.1. MSRC PET Management

The MSRC PET Management category will provide PET Management and University Partners with capabilities that facilitate management and execution of the PET program.

This category has been broken into three subcategories - *Program Management*, *Project Management*, and *Training Management*.

Program Management capabilities will support the day-to-day activities of the PET Program Managers. Potential applications include a Project Database containing proposals, SOWs, budget data, and activity reports; report generation (Deliverable Status, Quarterly Status Report, Lab-of-the-Year Report, Success Stories, etc.); a Briefings Repository; and Discussion Forums.

Project Management capabilities will support the day-to-day activities of the PET Academic Partners. Potential applications include Budget Management; Status Reporting to PET Program Managers; Project Planning (Proposal development, scheduling, budgeting); Document Repository; Discussion Forums; Travel Notification; and Trip Reports.

Training Management capabilities will support the day-to-day activities of PET Training management staff. Potential applications include a consolidated PET training calendar and a Training Management Database.

2.2.2. MSRC PET Communications

The MSRC PET Communications category contains links to applications that support dissemination of information on PET activities and community members. When this information can be made available to the general public, it will reside on the PET public Internet. Links to non-secure information will be provided within this category so those members of the PET Community do not need to leave the IOE environment to access the information. Potential links and applications include a Calendar of Events, Announcements, and a Repository of Technical Publications. PET contact applications include a Membership Listing and Email Aliases.

2.2.3. Computational Technology Areas

The Computational Technology Areas category is comprised of links to sites for the ten Computational Technology Areas addressed within the PET Program. These areas are:

1. Computational Structural Mechanics (CSM)
2. Computational Fluid Dynamics (CFD)
3. Computational Chemistry and Materials Science (CCM)
4. Computational Electromagnetics and Acoustics (CEA)
5. Climate/Weather/Ocean Modeling and Simulation (CWO)
6. Signal/Image Processing (SIP)
7. Forces Modeling and Simulation/C4I (FMS)
8. Environmental Quality Modeling and Simulation (EQM)
9. Computational Electronics and Nanoelectronics (CEN)
10. Integrated Modeling and Test Environments (IMT)

Each site will serve as a single access point to information and applications relevant to researchers and HPC users in each area. Through access to these sites, users will be able to find information about the subject area, obtain software, and collaborate with other users.

2.3.4 Collaboration Tools

The Collaborations Tools category is comprised of links and applications to support collaboration among the PET Community. The initial version of the PET IOE will provide links to online meeting tools such as NetMeeting, Tango, and IChat.

2.3.5 HPC User Support

The HPC User Support category will provide a variety of applications to support PET HPC users. Potential applications include an online User Services Help Desk; Software Repository; HPC Resource Information; Usage Data; Allocations; Job Status; and Training Information.

2.4 Functional Requirements.

General functionality required of the PET IOE include (1) web browser independent, (2) interface with the more commonly used database management systems, (3) desktop platform and operating system independent, (4) master events calendar, (5) master training calendar, (6) selected operating and collaboration tools, and (7) secure access for authorized users.

2.4.1 User Interface

The user interface for the system will be based on the Web portal model. A portal is a site that gathers links to a variety of web resources in one place and is designed to be the home page that loads when the browser is first opened. The purpose of a portal site is to provide an array of resources that meet the needs of the intended audience so that they will use it as their single entry point to web resources. For commercial sites, building a large audience results in increased revenues from advertising. Examples of such sites include yahoo.com and msn.com. However, portals may also be subject specific attracting a particular audience with highly focused interests. The PET Portal will be the latter type with specific content of interest to PET managers, researchers and users.

Tasks:

2.4.1.a. Design a PET specific portal homepage based on input from PET IOE project managers. Limit use of complex graphics to ensure quick page loading times.

2.4.1.b. Provide topic categories on the portal homepage to each of the five major categories listed in paragraph 2.3 above. The applications to be linked to within these categories are described under paragraph 2.4.3 below. A hierarchical representation of these categories and the applications/links contained within them is provided in Appendix A.

2.4.1.c. Provide a personal links category on the portal homepage to enable users to define their own links.

2.4.2 Security

Only researchers, managers, and users within the PET Community will be granted access to the PET IOE. A variety of security levels are required to ensure the confidentiality and integrity of the information supplied on the site. Users will be given a login with permissions based on their need to access specific information.

Tasks:

2.4.2.a. Customize the Alliance Intranet security mechanism to enable security at appropriate levels within the PET IOE.

2.4.2.b. Establish a protocol for approving new logins to the PET IOE.

2.4.3 Applications

Several applications have been identified for inclusion within the initial version of the PET IOE. All applications will provide the capability to enter original data, modify existing data, and add update data as required. The following paragraphs provide a brief description of these applications.

Tasks:

2.4.3.a. Customize the Alliance Intranet Quarterly Status Report application to meet PET reporting needs. The application shall enable collection of information from PET Academic Partners that can be rolled up into weekly, monthly, and quarterly reports for use by PET Program Managers. This application shall interact directly with the project database application developed in Task 2.4.3.c. The capability to automatically post reports to the Document Repository developed in paragraph 2.4.3.e. shall also be provided.

2.4.3.b. Customize the Alliance Intranet Master Calendar to meet PET needs for program management and training scheduling needs. This includes providing a master training calendar and a direct link to the existing training course description database and the student registration database.

2.4.3.c. Develop a database application for storage and retrieval of PET project information to include proposal, Statement of Work, budget, deliverables status and activity report data. Specific reports to develop, in addition to those developed in Task 2.4.3.a, include Deliverable Status; Lab-of-the-Year; Success Stories; Budget Status; Project Listing; and Statement of Work Listing. Security mechanisms shall be established to enable update and retrieval of data by appropriate PET staff.

2.4.3.d. Provide links from the Computational Technology Areas category on the IOE homepage to each of the ten CTAs and provide individual, customizable homepages for each of the ten Computational Technology Areas. Initial links to be included on the CTA homepages will provide access to CTA specific software repositories (if available), a discussion forum, and the PET document repository developed in Task 2.4.3.e.

2.4.3.e. Develop a Document Repository application to enable storage and retrieval of PET documents. Views of the documents in the repository will be different depending on the permissions of the user's login and the access point of the repository. For example, if the document has been flagged by the document's owner for public viewing it shall be viewable by all registered PET IOE users from the PET Communications category document repository. Specific document viewing authorizations shall be established in conjunction with PET IOE project managers.

2.4.3.f. Provide Discussion Forums to be used by groups identified by PET IOE project managers.

2.4.3.g. Provide an Announcement capability to enable users to communicate important events and news items to the PET community. Provide a link to a complete listing of current and archived announcements and post the most recent announcements on the PET IOE homepage within the PET Communications category.

2.4.3.h. Customize the Alliance Intranet Member Directory and Email Alias applications to provide quick access to PET contact information and PET email lists.

2.4.3.i. Provide links to available collaboration tools from within the Collaboration Tools category on the IOE homepage. Specific tools to be included are Tango, NetMeeting, and IChat.

3 System Maintenance

Tasks:

- 3.1 The development contractor shall perform maintenance of the developed IOE system through a contract mechanism.
- 3.2 The developing contractor shall host the IOE system on its proprietary hardware until each increment is fully completed and deployed at which time it will be moved to the respective PET centers' hardware.
- 3.3 The developing contractor shall provide technical support for system upgrades, enhancements, and modification of the system. The developer shall be available for a reasonable amount of remote consultation. The developer shall schedule one site visit within 90 – 120 days after deployment of each completed increment for the purpose of validating the system work deployed and to offer additional training on-site.

4 System Development Plan

Development of this system will be evolutionary. Initial capabilities provided are as stated in paragraph 2.4. Upon acceptance of the SOW, a prioritized list of projects will be developed and used to guide expansion of the system.

Appendix A: Hierarchy of PET IOE homepage categories and applications contained within those categories.

MSRC PET PROGRAM MANAGEMENT (Described in paragraph 2.3.1)

Program Management

- View Project Information from Project Database containing proposals, SOWs, budget data, and activity reports
- Generate Reports
 - Deliverable Status
 - Quarterly Status Report
 - Lab-of-the-Year Report
 - Success Stories

- Document Repository

Project Management

- Budget Management
- Status Reporting to PET Program Managers
- Project Planning (Proposal development, scheduling, budgeting)
- Document Repository
 - Presentations
 - Reports
- Travel Notification
- Trip Reports
- Document Templates

Training Management

- Training Management Database)
- Training Calendar Maintenance

PET COMMUNICATIONS (Described in paragraph 2.3.2)

- Calendar of Events
- Announcements
- PET Membership Listing
- Email Aliases
- Document Repository

COMPUTATION TECHNOLOGY AREAS (Described in paragraph 2.3.3)

Links will be provided from the IOE home page to separate homepages for each of the following areas:

- Computational Structural Mechanics (CSM)
- Computational Fluid Dynamics (CFD)
- Computational Chemistry and Materials Science (CCM)
- Computational Electromagnetics and Acoustics (CEA)
- Climate/Weather/Ocean Modeling and Simulation (CWO)
- Signal/Image Processing (SIP)
- Forces Modeling and Simulation/C4I (FMS)
- Environmental Quality Modeling and Simulation (EQM)
- Computational Electronics and Nanoelectronics (CEN)
- Integrated Modeling and Test Environments (IMT)

COLLABORATION TOOLS (Described in paragraph 2.3.4)

- Links to Online Meeting Tools (NetMeeting, Tango, IChat)
- Discussion Forums

HPC USER SUPPORT (Described in paragraph 2.3.5)

These capabilities are not included in the initial IOE development

- User Services Help Desk
- Software Repository
- HPC Resource Information
- Usage Data
- Allocations
- Job Status

- Training Information