

4h – Virtual Organization Support

Action Item Template Response

General Action Item Information

Lead Division/Office: Research Technologies
Action Item Number: 4h
Action Item Short Name: Virtual Organization Support
Dependencies with other EP Action Items:
Implementation leader (name & email):

A. INTRODUCTION AND BACKGROUND

Cyberinfrastructures are rapidly evolving to provide services to communities of scholars that are at multiple institutions. These researchers pursue a wide array of research agendas, including Large Hadron Collider (LHC) data collection and analysis (Open Science Grid), nano engineering (NanoHUB), translational medicine (Indiana CTSI HUB), humanities (IDAH), and basic biology research (iPlant). These virtual organizations (VOs) are changing the way research is practiced and disseminated, particularly in national or international research consortia or in pursuit of national roadmaps. The National Science Foundation is investing significant amounts of funding in the development of VOs, and international efforts such as the European-wide ECOSPACE architecture are ramping up quickly. Indiana University is already participating in the development and support of the cyberinfrastructure for several of these VOs. Making a strategic investment in our VO cyberinfrastructure can position IU scholars for leadership roles in national and international VOs, and position UITS as a leader in the development of VO environments and services.

IU already provides significant leadership in this important and rapidly growing arena. The Community Grids Lab at the Pervasive Technology Institute is very active in the development of collaborative research grids such as the Open Grid Computing Environment (OGCE). The Office of the Vice President for Information Technology & CIO has invested as a founding member in the HUBzero Consortium, a community source software development collaborative for HUB software. This consortium is led by Purdue and also includes the University of Wisconsin and Clemson University. Indiana University oversees the Grid Operations Center for Open Science Grid.

I. DESCRIBE YOUR PLANS FOR IMPLEMENTING THIS ACTION.

The overall goal of IU's participation in this initiative is to further develop the cyberinfrastructure and establish competitive VOs and VO development tools at Indiana University. IU already has a foundation in its work specifically on the following programs:

- Indiana CTSI HUB. A VO for translational medical research for the state of Indiana (Barnett)
- HUBzero. A VO environment that supports national and international collaborations (Barnett)
- Open Science Grid. A national distributed computing grid that supports research VOs (McCaulay)

- Efforts by the Pervasive Technology Institute relating to medical informatics VOs (Cate), Cloud and Grid Services (Fox), and Data Management Grids (Plale).

IU would also be able to leverage UITS leadership in federated identity management, global networking, grid and cloud computing, and security/privacy to enhance its national position in this area. The current status of these efforts is that they sufficiently serve the research communities of practice, but resources are required to expand the scope and reach of IU's VO efforts. Specifically, IU should provide technical resources to host additional VOs and invest in:

Experts to develop operational models for research collaboration (research collaboration scientists) based on existing best practices, organizational psychology, and evolving Web 2.0 collaboration models and tools
 Experts in the design of collaboration software and project management of implementation (research collaboration project managers)
 Experts in content development, management, and marketing (research collaboration marketers)
 Software engineers
 Systems administrators.

The research collaboration scientists would partner extensively with PTI, Informatics, and SLIS scientists to identify and develop research collaboration models, currently very poorly understood, in concert with IU domain scientists who have collaboration projects or aspirations. These scientists would also lead grant-writing efforts to provide funding for VO projects in conjunction with the above partners. The research collaboration project managers would work with the research collaboration scientists to design and deploy VO environments. The research collaboration marketers will develop content, manage relationships, and market VOs to research communities. Software engineers and systems administrators would develop software and support the infrastructures, respectively, to provide sustainability for IU VO projects.

II. WHAT ARE THE POLICY AND PRACTICE IMPLICATIONS OF YOUR PLANS?

None.

I. III. IDENTIFY STAKEHOLDERS.

Faculty and other researchers at Indiana University campuses, including the IU Medical School, grid partners such as the TeraGrid and Open Science Grid, the national Clinical and Translational Science Award (CTSA) community, and other VO organizations.