

MAMS Mini-Grant Application

1. Application details

Institution: Monash University

Monash University is well known for its lead in the establishment of PKI infrastructure among higher education sectors in Australia. Monash has also established the E-Research Centre to fulfil the growing demand from the internationally reputed researchers to conduct and enhance their activities. Grid technologies have been observed as the prime resource for the E-Research initiatives and thus Monash has commissioned Monash Sun Grid computing and data Grid facilities. Some of the Monash E-Research activities are ARC (Australian Research Council) funded LIEF (Linkage Infrastructure Equipment Facility) project among Monash, Australian National University and University of Queensland for establishing a Data Grid Infrastructure and DEST (Department of Education, Science & Training) funded DART (Dataset Acquisition, Accessibility & Annotation E-Research Technologies) project. DART is funded among Monash, James Cook University and University of Queensland for developing pilot E-Research tools for acquiring, annotating and accessing instruments and sensors data (e.g. Protein Crystallography, Climate Modelling, History data) and then processing and storing into federated repositories for annotation and long term preservation. The ARROW is another DEST funded project being led by Monash, which identifies and test software or solutions to support best practice institutional digital repositories comprising e-prints, digital theses and electronic publishing.

Project Advisors:

Prof. Ah-Chung Tsoi	Director, Monash E-Research Centre
Alan McMeekin	Executive Director, Information Technology Services Division

Project Directors:

Jack Chorowicz	Director, Infrastructure Services, ITS Division
Dr. Asad Khan	DART CI and Senior Lecturer, Faculty of IT

Project Chief Investigators:

Leon Troeth	Manager, ITS Identity & Messaging Services
A.B.M. Russel	DART LI and E-Research Software Specialist

Project Developer Team:

Lawrie Hanson	Team Leader, Registration and Authentication Services, ITS Identity & Messaging Services
Michael Guenzel	Administrator Developer, Registration and Authentication Services, ITS Identity & Messaging Services
Programmer	Interface Programmer

2. Project Goals, Objectives, Deliverables

The goal of this project is to provide a secured federated authentication and authorisation infrastructure interface for the Grid services established through DART and LIEF funded Data Grid project. DART project is creating E-Research tools for acquiring, processing and storing instruments and sensors data into multi institutional repositories where the Data Grid project will be providing a distributed infrastructure at the national level for mass scale data preservation. These DART and LIEF funded Data Grid projects that use Globus, GridFTP and SRB would require Single-Sign-On (SSO) mechanism for authorized users of the partner organisations to log in using one name and password (or equivalent), and then be able to access all authorized E-Research Grid services without needing to log in again. MAMS identity and access management (IAM) self-registration tools would be used for Single-Sign-On capability among Grid CA and MyProxy based E-Research Grid services and federated inter institutional Identity management services. MAMS Mini-grant will facilitate all these projects by establishing federated authentication and authorisation infrastructure for E-Research Grid services through Shibboleth and SAML among partner organisations which would promote DEST funded E-Security Framework for Research initiatives for a common trusted federation within Australia's Higher Education sector.

3. Category and Selection Criteria

3.1 Value of the service (for SP) and/or user-base (for IdP) in terms of promotion of the Testbed Federation for Australian research effectiveness.

Monash will be contributing towards MAMS project as an institution IdP with seventy thousand users. It will also open a pathway for integrating the E-Research services being developed under DART and Data Grid projects among Monash, ANU, UQ and JCU.

The proposal can be categorized as being category A i.e. "Combination of valuable SP + whole of institution IdP at level 2.

3.2 Relevance to Backing Australia's Ability & Systemic Infrastructure Initiatives goals

The DART and ARROW are the two key ongoing projects being led by Monash under Backing Australia's Ability initiatives. This MAMS grant will enhance the authenticated and authorized access of E-Research Grid services in a federated manner.

3.3 Technical excellence of the proposal

The proposal has been jointly developed by Information Technology Services Division and Faculty of Information Technology. The proposal provides all required application contents and selection criteria as requested by the MAMS application package.

3.4 Relevant experience of the proposed project team

The identity management group at Monash has extensive experience with identity management and authentication systems, and is well placed to deliver a production federation level 2 shibboleth service. Leon Troeth and Michael Guenzel have been involved with authentication systems since 1999 and 2001 respectively. Both of them are part of the team that manages directory services for Monash University and are largely responsible for the Monash PKI implementation. A.B.M. Russel has been involved with various projects on Monash E-Research Grid development including establishing and managing Monash Sun Grid facilities (2005) and developing DART pre-processing system (2006). He has been developing and managing Monash Sun Grid CA with GSI and MyProxy as Grid authentication and authorization mechanism since 2005. He has also been supporting Monash E-Research portal development team as implemented VPAC Engineering Grid toolkit and Computational Grid portal in 2004.

3.5 Relevant project management experience

Leon Troeth has been managing large scale projects since 2000 and has managed 5 large projects at that time. A.B.M. Russel coordinated various academic projects at RMIT and managed VPAC Engineering Grid toolkit and Computational Grid portal project in 2004 as the lead investigator and currently managing Monash Sun Grid project since 2005. Apart from being the lead investigator for DART pre-processing system (SI-7 WP), A.B.M. Russel is also actively providing technical assistance to DART SI-4789 WPs Project Manager in 2006.

3.6 Involvement with the MAMS project to date

The ITS Identity and Messaging team have been involved in the MAMS project since its early stages. They have attended every MAMS related workshop and training session, and have close contact with one of their former staff members who is now part of the MAMS shibboleth project team. The ITS IMS team also contributed in testing MAMS shibboleth installation CD and set up a test shibboleth service. They were also involved in the related CAUDIT PKI project, and were one of the Universities involved in testing the proposed architecture for that service.

3.7 Commitment to contribute to the Federation as an SP as an/or IdP until at least the end of 2006

The proposed testbed infrastructure will be developed during 2006 for providing a secured federated authentication and authorisation access mechanism for DART and Data Grid project's Grid interface services. This will encourage other partner institutions of DART and LIEF projects to join the MAMS federation as an IdP.

3.8 Proposal does not duplicate work already expected from funding received

There was no funding received for a secured federated interface development. This grant would be a complement for providing a federated authenticated and authorized access to Grid services infrastructure developed through DART and Data Grid projects.

4. Project Schedule and Resourcing

Stage 1	July – September	<ul style="list-style-type: none"> • Implementing a production shibboleth based Identity management service. This implementation would be linked to the MAMS testbed federation at level 2. • Integrate MAMS shibboleth and SAML based federated identity and access management (IAM) tools with Grid CA and MyProxy based Grid services. This integration would provide Single-Sign-On capability for accessing the E-Research Grid services by the authorized users of the partner organisations. • Establishing the secured testbed for Grid services through shibbolized Grid portal among partner Universities e.g. Monash, ANU, UQ and JCU.
Stage 2	October – November	<ul style="list-style-type: none"> • Shibbolizing Grid Services • Evaluation of testbed system
Stage 3	December	Final report

A programmer would be employed for the development of secured federated interfaces.

5. Risk and Contingencies

Cases	Actions
Recruiting suitable programmer for the programming task	Recruit skilled and reliable programmer
Integration incompatibility with Grid services interfaces	Follow open standards and use MAMS present implementation
Lack of technical support from MAMS	Identify technical requirements and keep regular contact with MAMS technical team members
Failure of meeting the deadlines by project team	Strategic planning and project scheduling from the commencement of the project