

# RUBRIC Central Technical Team: what we do and how we do it.

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## What is RUBRIC Central?

The RUBRIC (Regional Universities Building Research Infrastructure Collaboratively) project is a DEST sponsored project and aims to meet the needs of smaller and regional universities in several ways. This is done by working on developing sustainable repository infrastructure, based on best practice that has emerged and is continuing to emerge from the first round FRODO (Federated Repositories of Digital Objects) projects, and the second round MERRI (Managed Environments for Research Repository Infrastructure) projects<sup>1</sup>.

RUBRIC Central is the core team of people on the RUBRIC project. There are several groups who make up RUBRIC Central – the Administrative team, the Communications and Metadata team, and the Technical team (the Tech team). The technical team provides a broad range of skills in programming, system administration, and institutional repository experience. This paper will concentrate on the RUBRIC Central Technical Team and the role it plays in the RUBRIC Project.

## What does the Technical Team do? (Why do we need a TT?)

The Technical Team provides technical infrastructure for the RUBRIC project and its partners, including provision of hardware and software for project management, along with provision of institutional repository instances, correctly installed and configured. The Technical Team is also responsible for trouble-shooting any technical problems that arise, and if possible, for debugging. A large part of the RUBRIC Project requires technical support, not only for installation and configuration of trial repositories, but also for providing advice and guidance for setup of production systems in the later stages of the project. In order to provide this level of support, a Technical Team was created, consisting of a Technical Manager and two Technical Officers. This structure has since changed to a Senior Research Fellow acting in an advisory capacity, a Senior Technical Officer, and two Technical Officers.

The RUBRIC Project aims to assist in exposing research and development from institutions in Australia and New Zealand, so has assessed three repository solution software packages that were provided as recommendations from the FRODO projects. RUBRIC has concentrated on these, and gained extensive experience in installation, configuration, development and deployment of these systems. These systems are Dspace, in association with ANU and the APSR project; Fez, in association with University of Queensland and the APSR project; and VITAL from VTLS, in association with the ARROW project and Monash University.

## How do we go about our technical role?

When the project began, the decision was made to implement a virtual infrastructure, based on benefits demonstrated to RUBRIC Central by the USQ Division of ICT. Benefits of this type of infrastructure include the ability to create a new server for a partner in a very short time, cost benefits in provisioning, reliable backup strategies, and security and access benefits. Using virtual infrastructure allows the Technical Team to have a simulated production environment in which to test and configure, without the risk of damage to production systems.

The primary focus of the Technical Team has been to provide service and assistance to the project partners. Communication plays a major role in providing this service and this is aided by use of various tools including Trac<sup>2</sup> – a combination of a wiki, a work-ticketing system, and a subversion repository. This facilitates communication between project team members as well as with project partners. Each member of the larger RUBRIC project has the ability to monitor the progress of various tasks and to keep up to date with what's happening. Participation in the wiki is not compulsory, but it has provided a mechanism for the Technical Team to monitor and attend to some of the more important issues for project partners.

The Technical Team works on development cycles the concept for which was introduced to RUBRIC Central by Technical Manager Peter Sefton. Peter had previously used this technique in other projects. The Central team works in weekly cycles based on agile programming methodology. These cycles are created in Trac and provide the opportunity for the Team to monitor all tasks closely. Each week various tasks are assigned to each team member, based on an approximate number of work units. Any associated action to be completed by that member are documented through the work ticket for that task. Every task is broken down into smaller tasks if possible, to enable more accurate tracking of work. By having these smaller units of work, the team is able to accurately estimate the amount of time required for a given task, and communicate that to involved parties. This sort of communication assists with building good relationships within the team and the project partners, and enables all parties to be involved in the prioritising of tasks.

RUBRIC has linked Trac to a Subversion repository which is used to house all RUBRIC Central documentation. The documentation is created using ICE (Integrated Content Environment)<sup>3</sup>, which then sends working copies of documentation up to the centralised subversion repository. The technical documentation that is kept in Subversion includes procedures, tech reports, reports on events, guideline documentation, and notes. The entire documentation repository is secured, allowing access only to RUBRIC parties. The repository also contains a public section to house tech reports ready for public consumption.

## Some neat tricks we've done

A major focus of the RUBRIC Central Technical Team has been interoperability between repository solutions. A major component of work completed has been on data migration between the three main repository solutions previously mentioned.

The ability to migrate data from one type of repository solution to another is important, particularly when considering the many different software solutions available and the type of repository architecture on which they are based. Systems using different metadata formats mean that moving data from one to another for whatever reason can be very difficult and

potentially may mean many hours of data entry.

The work being done by RUBRIC is concentrating on minimising the effort required to move objects and metadata. By using XSLT, RUBRIC is creating metadata transformations which are able to be moved between the three software solutions under evaluation. RUBRIC is also including work on migrating from outside systems, into the three solutions, including from Eprints, EndNote, and Voyager. An entire migration process is also being developed, from source harvesting, to destination ingest.

RUBRIC has also provided communal instances of each of the three repository solutions being used. These communal instances were set up early in the project, and each partner project manager was provided with guidance in using each system. This allowed each partner to sample each solution, and learn for themselves what features may or may not benefit. Customisations were done to each of these instances as well and suggestions and queries from partners about configuration was often implemented, providing it did not affect overall usability.

After the trial phase, partners have now entered a pilot phase whereby each institution has been able to choose a solution. This solution has been installed on a separate server, allowing a partner to have their own server. While backend access is not permitted due to security reasons, the necessary work is performed by the RUBRIC Central Tech Team on advice from that partner. Each instance is customised to the partners' requirements, providing a degree of ownership.

## Where to from here?

The RUBRIC Central Technical Team has already developed extensive skills in installation and configuration of three repository solutions. Future work will include further investigations into making this process smoother for partners. Pilot systems are now being developed for each partner institution, and this phase will continue into early 2007 to allow partners to gain maximum exposure to their chosen repository solution before going live in 2007.

Data migration is another high priority for the project and work will continue on strategies for migration between repository solutions. RUBRIC will continue to monitor further research done worldwide on metadata formats and standards, in order to provide maximum flexibility to project partners.

As institutional repositories develop and the next generation of software emerges, research and testing will continue. This will allow RUBRIC to provide the best possible recommendations, based on the available FRODO solutions at a given time.

Further use will also be made of technologies emerging from the area of IRs and project management. RUBRIC's current use of Trac to manage work cycles and documentation is not new, but has been extremely useful, and the value of investigating further solutions to extend the services that RUBRIC can provide is also recognised.

- 1 RUBRIC Website: <http://www.rubric.edu.au>
- 2 Trac website: <http://trac.edgewall.org/>
- 3 ICE website: <http://ice.usq.edu.au/>