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Research Data Management for Mechanical Engineering Departments

The Brief

A six-month project to scope, specify, design and implement a research data management plan (RDMP) suited especially to the needs of the Department of Mechanical Engineering at the University of Bath.

The RDMP will consist of a core data management plan supported by documented guidance to allow such a plan to be specialized for each new research project within the department and suitable tools integrated within the department’s existing IT infrastructure to support execution of each plan.

Additionally, the Research Activity Information Development Associative Tool (RAIDmap) specified during the ERIM Project for the contextualization of research data will be implemented as a prototype.

The rubric adopted for the project is:

*We will aim to provide guidance and tools to aid practical RDM planning which are simple and engaging to use, easy to access and which require least effort on the part of the users.*

The Objectives

Objective 1 Develop a user-driven requirements specification for a research data management plan (RDMPRS). Principally the CARDIO toolkit and semi-structured interview techniques will be used for requirements elicitation and analysis.

Objective 2 Develop and deliver an RDMP for the Department of Mechanical Engineering based on the specification derived from the above exercise.

Objective 3 Implement a technical system and infrastructure to support implementation of the data management plan. This broadly embraces underpinning systems, such as the BUCS-delivered data storage facilities and web service. Understand what existing tools and infrastructure support might be adopted (from MRD programme and other sources).

Objective 4 Provide documentation of the implemented DMP and the supporting infrastructure as a ‘blueprint’ so that the approach can be implemented by other groups or departments. Write a specification/description of the DMP and supporting system.

Objective 5 Implement a prototype of the RAID Associative Tool using, where possible, existing technologies, tools and methods to implement the functional requirements.

Objective 6 Write guidance and user support documentation as appropriate. Write department procedural user documentation.

Objective 7 Provide input to the DCC, by the submission of any policies and guidance created by the project, for assessment and reuse by the community. Similarly, provide appropriate feedback to the DCC on assessment and use of DCC tools and methods within the project.

The Approach

- A characterization of the current research data management capability of the department using the CARDIO tool, and previous work from the ERIM Project, will allow a user-driven requirements specification to be developed for the departmental RDMP.
- To assist in this, a panel of researchers (as data originators/users) within the Department of Mechanical Engineering will be engaged as a ‘sounding-board’ for the evolving data management procedures, guidance and tools. The panel will include representatives from a wide spectrum of sub-disciplines within the department.
- Where appropriate procedures and guidance will be developed from similar material developed during the ERIM Project. In particular the ‘cascade’ of best practice documents developed during that project will be used.
- The prototype RAIDmap tool will be developed using the iterative rapid-prototyping approach typical of the agile software development method.

Alex Ball, Mansur Darlington, Uday Thangarajah, Chris McMahon & Liz Lyon