

**Title of Project: eDiaMoND**

**Principal Investigator: Professor Sir J.M. Brady, University of Oxford**

**Aim(s) of Project:**

- The development of the Grid technology infrastructure to support, within a secure environment, federated databases of mammographic images (and associated metadata and provenance data)
- The development of Grid-connected mammography workstations and a database of standardised mammographic images
- The development, testing and validation of the system on a set of important applications

**Please provide a summary of the project proposal (max 1 page):**

The eDiaMoND project aims to build a national database of mammographic images for use in the clinical management of breast disease. This will be achieved by building the necessary Grid infrastructure through a partnership between the Oxford e-Science Centre, the MIAS IRC, IBM, and Mirada Solutions. Working closely with clinical partners in four leading UK hospitals, the project will use Grid technologies to develop tools that will allow this infrastructure to be used to improve the efficiency and effectiveness of breast imaging, to perform epidemiological studies, and to be used in the training and education of radiologists and clinicians. The project will take advantage of a key technology developed within the University of Oxford, which allows the standardisation of images as they enter the database. This overcomes the major obstacle of confounding of information about breast tissue properties due to the major differences that can be introduced into images by different equipment and centres. This process is based on a mathematical model of the passage of x-ray photons through breast tissue, and is currently the only such standardisation process. This facility will provide a unique advantage for UK breast imaging. eDiaMoND brings together world-class medical image analysis expertise, computer science expertise and clinical expertise, and will prototype and greatly aid the Government's electronic delivery of healthcare by providing an exemplar of the dynamic, best-evidence based approach to diagnosis and treatment made available through the Grid.

**Please list 3 deliverables that the project will contribute to the UK and/or international cancer informatics community**

1. A prototype of the system described above, which is being developed to be flexible, in the sense that it can be redeployed for consideration of other modalities and diseases.
2. A blueprint document, outlining what would be required to turn the prototype into a nationally-deployed solution.

3. An e-health roadmap, detailing both the generic informatics healthcare problems faced by eDiaMoND, the (generic) solutions employed in eDiaMoND.

**Please describe how the project will incorporate and/or re-use existing informatics infrastructure and/or resources. If the project will not use any existing infrastructure or resources (e.g., data standards or ontologies) please explain why this is the case.**

The project is utilising the DICOM standard, continues to receive input from the UK BSP, and is respectful of all relevant standards in the area.

**Please describe the plans for the sharing of data and dissemination of knowledge that arise from the project:**

Data and knowledge arising from the project will be disseminated through the usual channels namely, via journals, conferences, presentations to interested parties and articles in newspapers and popular science publications.

**Contact details for liason person should further information be required:**

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