

# Share

## Supporting and structuring HealthGrid Activities & Research in Europe: developing a roadmap

**SHARE goal is to ensure the successful take up of HealthGrids in the next 10 years by creating a roadmap for essential technology development years.**

### Objectives of the project

A major challenge for the coming years is to address the unique ICT aspects of the life sciences in an integrated way. Life science research present the need to access, analyse, protect and share massive quantities of diverse, geographically distributed information, computationally intensive analysis techniques and rapidly evolving medicine, science and technology.

The recent emergence of Grid technology opens new perspectives to enable interdisciplinary research and technology development at the cross roads of medical informatics, bioinformatics and system biology impacting healthcare.

Action on Grids for health is needed at EU level to address mobility of citizens and provide cross frontier interoperability of data, cross-frontier infrastructures, optimal exploitation of resources (both technical and medical), equitable distribution of healthcare; and definition and implementation of standards.

Such deployment requires harmonization of existing legal frameworks for storing, accessing, communicating, and processing health related data in Europe.

**SHARE** will achieve the following goals:

- To propose strategies to address some of the issues listed in the European Action Plan for e- Health.
- To define a roadmap for research and technology to allow a wide deployment and adoption of HealthGrids both in the shorter term (3-5 years) and in the longer term (up to 10 years).
- To define a complementary and integrated roadmap for e-Health RTD policy relating to Grid deployment, as a basis for improving coordination amongst funding bodies, health policy makers and leaders of Grid initiatives, avoiding legislative barriers etc.

### Project Description

The HealthGrid roadmap will cover the domain of RTD and uptake of Grid applications in healthcare comprehensively, including infrastructure, security, ethical, legal, financial, economic and other policy issues.

### Scenario

Suppose that the epidemiology department of a public health authority records primary care and drug prescription information from a regional area. A researcher from this epidemiology department has to take a decision on the preferred treatment for the disease "A" to inform medical practitioners. This information has been traditionally obtained from the drug manufacturer companies and obtained through clinical trials. However, the information registered would enable to perform more realistic cost-efficiency and safety analysis. After talking with the experts, the epidemiology researcher selects the most relevant fields and performs a correlation study of treatment length, adverse effects, treatment cost, patient physical information and medical records. This study requires consolidating the information from several databases and performing long and computationally-costly knowledge discovery processes which are executed on a grid infrastructure, taking into account the security and integrity restrictions. Final data determines that for a group of the population "X", current treatment is inadequate and costly, whereas alternative treatment "Y" seems very effective. This information is published for the medical practitioners who use this as an advisory guide for their daily work. Finally, treatment cost of disease "A" has been reduced.

**“The Share Roadmap will focus on identifying requirements for further research and technology development”**

Each section of the roadmap will detail actions to be taken in terms of objectives and possible methods or approach as well as recommended milestones for completion, stakeholders responsible, appropriate methods of coordination etc All sections of the roadmap will take fully into account issues related to standards and will respect the security requirements for handling

medical data. Non- European issues will be factored in to our roadmap in order to ensure that European HealthGrid policy does not inadvertently preclude international interoperability.

The conceptual work during the start-up phase of the project will also specify in detail both the general scope and specific features of the roadmap. In this sense, the roadmap will focus on identifying requirements for further research and technology development.

It will also sketch a realistic picture with respect to desirable applications/ICT implementations and indicate which technologies may have the potential to make a substantial contribution in this context. This will be supported through the presentation of good practice examples.

To ensure that the RTD roadmap ultimately to be generated will actually yield positive results and desired impacts it will be based upon and, wherever possible, justified by empirical evidence from the research domain and a bottom-up assessment involving relevant stakeholders.

In a sequential process, relevant research communities and communities of practice at EU, national and global levels will be joined up to enable an iterative refinement and extension of the initial road map.

### **Expected Results & Impacts**

Health care systems in all countries are under strong pressure to reduce costs and improve (economic) efficiency. For quite some time, the European Union through the various framework programmes for RTD has strongly supported the development of ICT applications in the health sector, albeit with mixed results.

The same holds for various national activities; only recently these have gained in scope and relevance for health care professionals and citizens. The overriding societal goal of all these activities - and in line with **Share** as well - is to contribute towards better health and care across Member States, in particular through implementation and diffusion of e-health products and services on regional, national and trans-European e-healthcare infrastructures based on the Grid technology.

It is expected that this will contribute to better medical outcomes, better quality of life for citizens and patients, more efficiency and improved access - key impacts for all countries and all their citizens.

## **S h a r e**

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**Project co-ordinator:** CNRS

**Contact person:**

Yannick Legré

Tel: +33 473 405 137

Fax: +33 473 405 001

Email: [legre@clermont.in2p3.fr](mailto:legre@clermont.in2p3.fr)

Website: <http://www.eu-share.org>

**Partners:**

- CNRS (FR)
- HealthGrid (FR)
- Universidad Politecnica de Valencia (ES)
- University of the West of England, Bristol (UK)
- Facultés Universitaires Notre-Dame de la Paix (BE)
- European Health Management Association (IL)

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