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SemanticHealth
A semantic interoperability deployment and research roadmap

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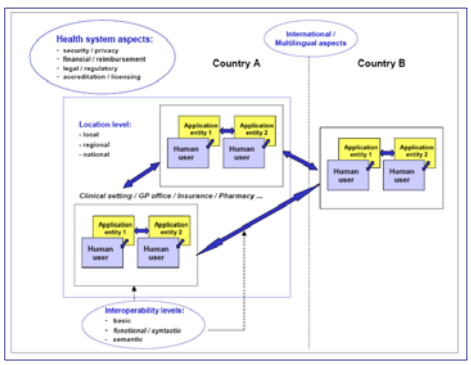
Abstract The SemanticHealth collaborative project, selected for possible funding by the European Union under its 6th Framework Programme, is presented. The rationale is outlined, together with the general and operational objectives of the project. Measurable outcomes have been selected to monitor progress. Subject to the signature of the project documents by all parties involved, the SemanticHealth project is scheduled to start in early 2006.

Introduction

Many countries and international organisations in the world are reaching a new critical and challenging point in their healthcare systems. The combination of rapid advances in basic biological science, an ageing population, increased mobility, an increasing number of specialties involved in the care of each individual maker rapid effective exchange of information essential.

Currently different that interoperability by fragmented. Electronic health records, clinical terminologies and ontologies, messages, data types, security, and system architectures are addressed in isolation by different initiatives. In order to achieve the goals of e-health in general, including by meeting the needs of citizens, patients and providers, but also in order to meet the needs of health systems administrators with regard to higher performance and cost containment, this fragmented initiatives must come together in the comprehensive policy for interoperability.

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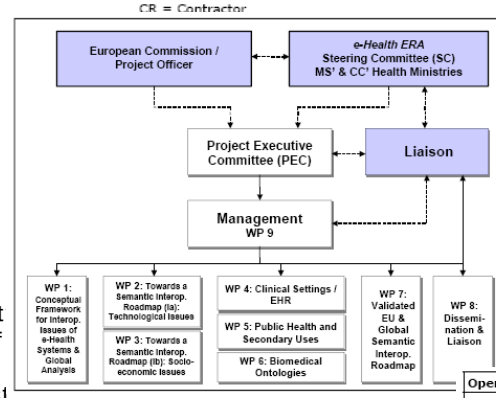


The interoperability domain

Partricipating institutions

Partic. Role*	Partic. No.	Participant name
CO	1	Radboud University Nijmegen Medical Center, Department of Medical Informatics, Nijmegen
CR	2	World Health Organization, Department of Measurements and Health Information Systems, Geneva
CR	3	National Institute for Strategic Health Research, Budapest
CR	4	Nordic Centre for Classifications in Health Care, Uppsala University
CR	5	University of Saint Etienne, Department of Public Health and Medical Informatics, St. Etienne
CR	6	University College London, Centre for Health Informatics and Multiprofessional Education - in collaboration with the University of Manchester

*CO = Coordinator
CR = Contractor



Organisation and management

More recently, developers and vendors have been confronted with the need to ensure that crucial information may be exchanged between systems not only on the basis of preset data elements and categories, standardised as they may be, but also by virtue of a common understanding of the actual meaning, or semantic features, of the concepts at play to describe the content of information.

In addition there is also a need to ensure that the information entered into electronic systems or produced by them is readily understandable by humans and that the rules governing the coding and processing of information inside ICT systems them are indeed transparent and properly verified and certified.

Operational objectives

The roadmap will be based on consensus of the research community, and validated by stakeholders, industry and Member State health authorities. It will:

- identify key short-term (2-5 years) and medium-term (4-10 years) needs to achieve semantic interoperability of e-Health systems (including issues of nomenclatures presently in use, classifications, terminologies, ontologies, EHR and messaging models, public health and secondary uses, and decision support, their relationships, mapping needs, limitations)
- analyse unsolved issues arising in the context of realistic approaches to priority clinical and public health settings (reflecting on models of use, benefits expected, concrete application experience and lessons learned; relevance of open source model)
- take account of the impact of non-technological (health policy, legal, socioeconomic) aspects
- provide a mechanism to integrate the views, needs and priorities of Member State health policy actors (health ministries, health care authorities)

Operational objective	Measurable outcome(s)
1a) Development of a generic Conceptual Framework for Issues of Interoperability of e-Health Systems 1b) EU-*wide* and global analysis of e-Health interoperability approaches	• Completion of an appropriate conceptual framework (month 3) • Concise synthesis of European and selected global approaches and experience (month 7)
2. Preparing for a preliminary Semantic Interoperability Roadmap (I a): Technological Issues	• Report on comparative analysis and initial technological recommendations for improving semantic interoperability (month 12)
3. Preparing for a preliminary Semantic Interoperability Roadmap (I b): Socio-economic Issues	• Report on comparative analysis and initial socio-economic recommendations for improving semantic interoperability (month 13)
4. Analysis of semantic interoperability needs in clinical settings / EHR	• Report on barriers, approaches and priorities for semantic interoperability in support of clinical care delivery (month 16)
5. Analysis of semantic interoperability needs in the field of public health and secondary uses	• Report on assessment of the semantic congruence between key international health information system components (month 12) • Report on barriers, approaches and priorities for semantic interoperability in support of public health and secondary uses (month 17)
6. Analysis of semantic interoperability needs in biomedical ontologies	• Report on barriers, approaches and priorities for integrating biomedical ontologies (month 18)
7. Developing a final European and Global Semantic Interoperability Roadmap	• Validated European and Global Semantic Interoperability Deployment and Research Roadmap (month 24)
8. Dissemination & Liaison	• Launch of an e-Health semantic interoperability portal (month 4) • At least one workshop on each of the topics of objectives 2. - 7. (months 10 - 22), 10-15 experts present; special workshops attached to CEN and HL7 meetings; special industrial forum • Agenda item on three meetings of the EU Health Care Authorities (Steering Committee to the e-Health ERA project) (months 6 - 22)
9. Project Management	• High quality project management: (months 1 - 25) • Implementation of a quality assurance and assessment of progress and results plan including an internal controlling mechanism (month 3) • Project progress report (month 13) • Final summary project report (month 25)