Contribution ID: **87** Type: **oral presentation**

The Health-e-Child Project: A Grid enabled Platform for European Paediatrics

Monday, September 3, 2007 3:00 PM (20 minutes)

The Health-e-Child (HeC) project is an EC Framework Programme 6 Integrated Project that aims at developing an integrated healthcare platform for paediatrics. Through this platform biomedical informaticians will integrate heterogeneous data and perform epidemiological studies across Europe.

The main objective of the project is to gain a comprehensive view of a child's health by 'vertically'integrating biomedical, information and knowledge that spans the entire spectrum from genetic to epidemiological. The resulting Grid enabled biomedical information platform will be supported by robust search, optimization and matching techniques for information collected in hospitals across Europe.

In particular, paediatricians will be provided with decision support, knowledge discovery and disease modelling applications that will access data in hospitals in the UK, Italy and France, integrated via the Grid. For economy of scale, reusability, extensibility, and maintainability, Health-e-Child is being developed on top of an EGEE/gLite based infrastructure that provides all the common data and computation management services required by the applications. The emphasis of the Health-e-Child effort is on universality of information, person-centricity of information, universality of application, multiplicity and variety of biomedical analytics and person-centricity of interaction. Its corner stone is the integration of information across biomedical abstraction whereby layers of biomedical information (i.e., genetic, cell, tissue, organ, individual, and population layer) are integrated to provide a unified view of a person's biomedical and clinical condition.

This paper discusses the major issues and challenges in bio-medical data integration and how these will be resolved in the Health-e-Child system. It establishes the need for the HeC infrastructure and emphasises the importance of user requirements analysis when integrating highly heterogeneous medical information. HeC is presented as an example of how computer science originating from the high energy physics community can be adapted for use by biomedical informaticians to deliver tangible real-world benefits.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

Health-e-Child Grid project

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Session Classification: Collaborative tools

Track Classification: Collaborative tools