CETIC EUROPEAN RESEARCH PROJECTS

PONTE

Efficient Patient Recruitment for Innovative Clinical Trials of Existing Drugs to Other Indications

Type of project: European Commission – FP7 – ICT – Specific Targeted REsearch Project
CETIC budget: €694,875
Duration: 2010-2013
CETIC departments: Software and Services Technologies, Software and System Engineering
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BACKGROUND

Due to the global economic crisis, which is impacting pharmaceutical research, new research funding is being reduced and existing medications are being re-positioned for new uses and applied to new diseases and disorders.

However, expected benefits may be limited by the presence of side effects, and new efficacies may be missed in the trials. Translation into clinical therapy must also overcome barriers at the pre-clinical and clinical levels. Thus, bridging basic science to clinical practice comprises a new scientific challenge which can result in successful clinical applications with low financial cost.

PONTE aims at providing a platform following a Service Oriented Architecture (SOA) and Semantic approach that will offer semi-automatic intelligent identification of patients eligible to participate in well-specified clinical trials for drug re-positioning, with particular focus on mitigating patient safety risks, reducing clinical trial costs, and improving clinical trial efficacy. Work in this direction involves decision support mechanisms fed with information retrieved from a semantic search engine – with the search engine operating on top of a data representation, linking data in drug and disease knowledge databases, clinical care and clinical research information systems.

CETIC has three key responsibilities in the PONTE project:

- As coordinator of the project, CETIC is responsible for the overall management with a focus on quality assurance tasks.
- Standardisation activities: continuous interaction between the activities of eHealth-related international standards, and particularly in the area of semantic interoperability between clinical research and clinical care information systems, and the international standardisation activities.
- Data representation and organisation: semantic data and metadata representations for clinical trials, in order to support interoperability of clinical care information system data, enabling search, data mining and advanced machine learning across clinical care information systems following an SOA approach.

KEY RESULTS

PONTE will provide four main outcomes:

1. Consistent linking of clinical research information systems with clinical care information from Electronic Health Records (EHRs) through the development of a Semantic Specification Language. An innovative Ontology-Based Search Engine able to mine information based on this semantic data representation. Development of mechanisms that automatically identify the semantic information of schemas and detect semantic relationships between the distributed databases' constructs. Combination of ontology-driven data integration and text mining techniques to enable the mining of information required from the various heterogeneous data sources involved.
2. Integration of a wide spectrum of existing clinical data standards into an innovative core ontology-driven scheme that encompasses the entire clinical research and clinical care processes within the PONTE objectives. As scalability is considered to be of major importance, the proposed platform will be implemented following the SOA concepts.
3. Advanced authentication and data confidentiality techniques will be incorporated, and usage control techniques will be explored for providing access control services as well as privacy protection services.
4. Current legislation related to access and use of patient health data for the purposes of the PONTE platform (among other legal issues) will be studied and will guide the PONTE architecture through the duration of the project.

PONTE aims at providing automatic intelligent identification of patients.

PARTNERS

CNR, CUH, ICCS/NTUA, IoPR, LUH, NKUA, SMI, TUD