Knowledge Base for RTD competencies in IST

http://www.ist-world.org/

Project Objectives

The IST World project aims at setting up and populating an information portal with innovative functionalities that helps to promote RTD competencies in IST in the New Member States and Associate Candidate Countries and facilitates and fosters the networking among research actors and involvement in joint RTD activities. The IST World web portal integrates information about RTD actors such as organizations and experts on a local, national and European level and shows the context of their co-operation in joint projects and publications. The long-term goal of IST World is to provide advanced analytical services for the investigation of European research activities, resources and competences in IST, and for the detection of research trends and the prediction of future research developments. Base for the analytical services are the European RTD competence map, collaboration diagrams of RTD actors in Europe and research domain context spaces.

The IST World portal is built on technology for Current Research Information Systems (CRISs) based on advanced knowledge technologies, techniques and tools that have been developed by DFKI, Jozef Stefan Institute, and Ontotext.

IST World Portal Services

The IST World portal will overcome the shortcomings of existing on-line services by offering advanced analytical and prediction services and by joining knowledge mapping with social networks building. It will support partner search for IST proposals and commercial projects by providing the following functionalities:

o **Information Repository:** information about partners, their resources, active projects and their expertise.

o **Partner Finding Tool:** predicting the optimum consortia of partners based on their competences, experiences and trust.

o **Social Network Identification:** analysis of the present research activities, actors, social networks and results visualized by different techniques.

- **Forecasting/Prediction:** forecasting of RTD trends based on monitoring of current research initiatives, projects and achievements, and predicting possible future research themes based on automatically detected trends.

- **Expertise Identification:** summarising and presenting different aspects of a person's complex expertise profile based on extraction of information from a potentially huge number of web search results.

The current IST World portal provides a set of functionalities that represent personal and organizational competencies, expertise and social network analysis using attractive visualization techniques as presented in figure 1 and 2.
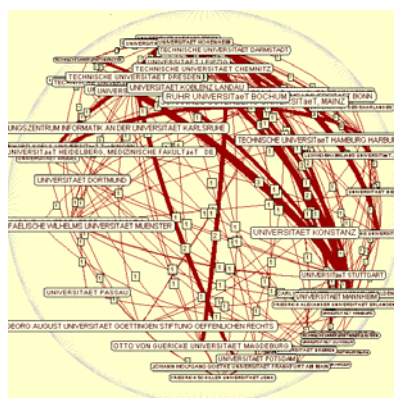

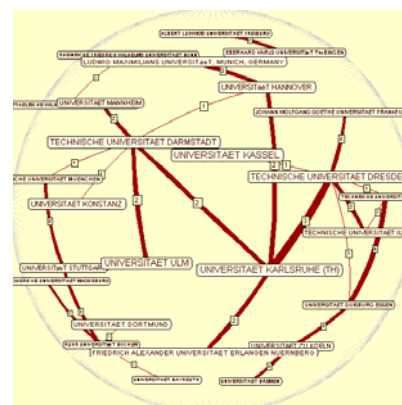Figure 1: Collaborating Universities in Germany

Figure 2: top 20% of Collaborating Universities in Germany

Expected Impact

The target user group of IST World are organisations from all countries looking for specific RTD competencies and organisations from NMS/ACC wishing to promote their own competencies, and service providers. The project contributes to the construction of the European Research Area, which functions as a "common market" for RTD services, technologies, and experts. The project will make market activities more efficient by providing high-quality information that enables an improved matching of demand with supply. The services will be of highest importance for FP7, where cooperation, capacities, people and ideas are main objectives for funding.

A further benefit is that the portal provides a map of the research competencies in Europe and the NMS/ACC in particular. This will reveal local strengths and clusters of innovative organisations, as well as gaps and weaknesses in particular areas. The data mining and visualisation technologies will allow the detection and analysis of patterns in the data, and will be of use for partner search, investors and policy-makers as demonstrated with figure 3.
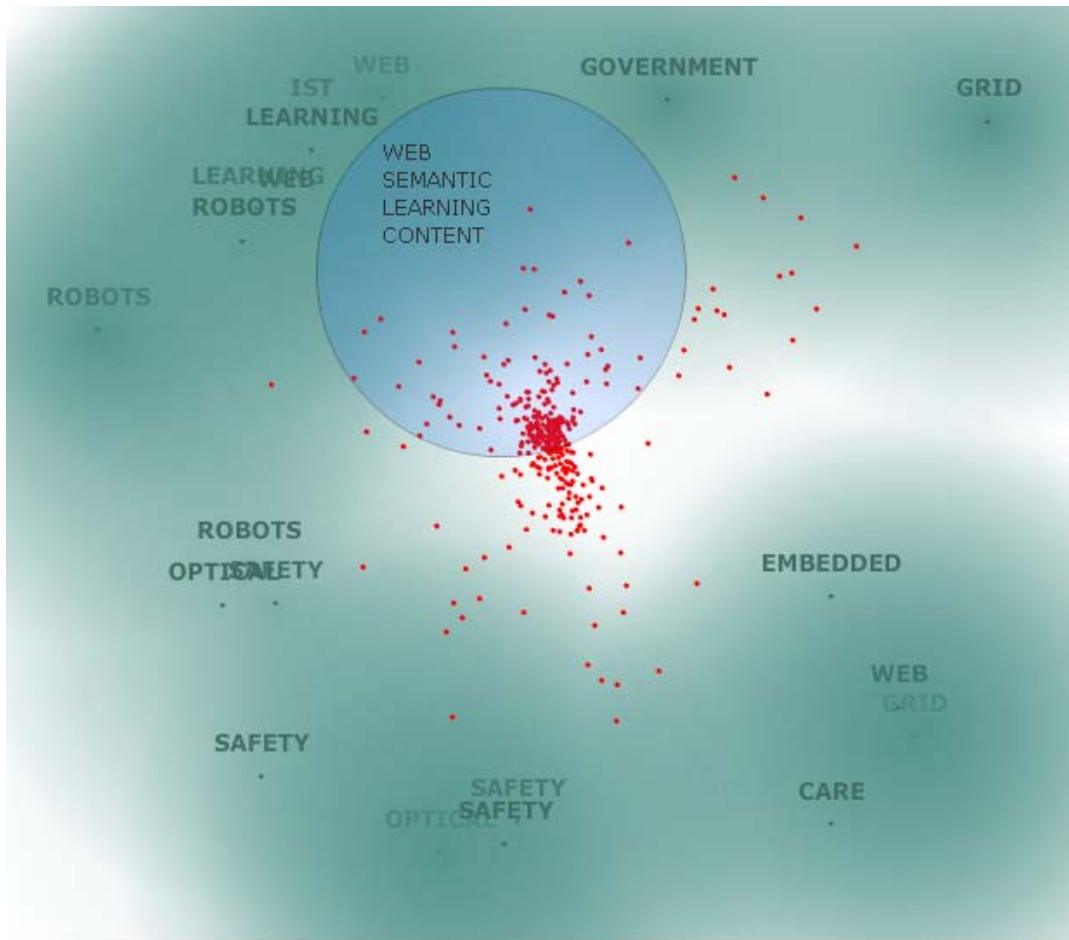
Figure 3: Competence Diagram for „Information Systems"

Data Sources

All IST World analytics depend on the data in the repository. In order to achieve a critical mass of accurate data and comprehensive coverage, one cannot rely on one single way of data acquisition. Therefore, there are three major ways foreseen to populate the IST World database:

1. **Base:** Existing data will be imported from CORDIS, from domain-specific portals such as LT World, and from CERIF-conformant national and European Current Research Information Systems (CRISs).

2. **Community based:** The portal will offer service for community building and maintenance in which organizations, groups and experts will register themselves and their projects and build professional virtual communities. Promotion campaigns in the new member states (NMS) and associated candidate countries (ACC), aimed especially at SMEs, will be carried out in order to ensure that research competencies from these countries are well represented in the database.

3. **Automatic:** Web and text mining techniques will be used to acquire additional data.

The IST World portal is still work in progress and more features, and information will be added over the coming months. A new major portal release is planned for autumn 2006. More information about the project and pointers to related initiatives can be found at the IST World project page: http://ist-world.dfki.de/

The IST World consortium is represented by the following fifteen contractors from different European Countries:

- o *(DFKI) Deutsches Forschungszentrum für Künstliche Intelligenz (Co-ordination), Germany*
- o *(JSI) Institute Jozef Stefan   JSI, Slovenia*
- o *(ONT) Ontotext Lab, Sirma Goup, Bulgaria*
- o *(Talos) RTD Talos, Cyprus*
- o *(UTIA) Institute of Information Theory and Automation, Czech Republic*
- o *(AF) Archimedes Foundation, Estonia*
- o *(MTA SZTAKI) Computer and Automation Research Institute, Hungarian Academy of Sciences, Hungary*
- o *(IMCS) Institute of Mathematics and Computer Science, University of Latvia, Latvia*
- o *(LIC) Lithuanian Innovation Centre , Lithuania*
- o *(PiM) Projects in Motion, Malta*
- o *(SUT) Silesian University of Technology, Poland*
- o *(ICI) National Institute for Research and Development in Informatics, Romania*
- o *(STUBA) Slovak University of Technology, Slovakia*
- o *(TUB) TUBITAK, Turkey*
- o (CCLRC) CCLRC, United Kingdom

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