ReSIST's

Resilience Knowledge Base

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The Purpose of the RKB

- To provide convenient access to extensive information from across Europe about people, projects, institutions, events, publications, etc., of relevance to dependability and security research

- To obtain this information from multiple heterogeneous sources, and to enable it to be queried and analyzed, from various viewpoints, *without* requiring uniformity of terminology

- The RKB is not yet-another conventional web-site providing a manually-collected and classified collection of links to relevant information - rather contains, *and inter-relates,* automatically-collected and updated publicly-available information

- Though the initial concentration is on ReSIST members and EU research, the plan is to expand it to cover other sources, throughout Europe, and our hope is to expand it beyond Europe, given the necessary resources

Present Status

- RKB is based on the technologies and resources used in Southampton University's very sophisticated CS AKtiveSpace System - a pilot knowledge base covering (UK) computer science as a whole, that won the Semantic Web Award for 2003

- Southampton are leading the development of RKB, and gathering public information both from general sources, and from project partners

- Work started on the RKB in March 2006 - a first <u>prototype</u> was "delivered" to the EC at the end of December, providing an explorable graphical and tabular "Community of Practice"-style interface.

- Extensive information has been collected (>50M triples), including the entirety of: CiteSeer, DPLP, CORDIS (EU IST projects database), the NSF Projects database, ACM publication details, and the RISKS Archive

- Significant progress has been made on interface design and on integration mechanisms, and work has started on automated keyword selection using the Compendium of FTCS/DSN papers (from 1970 onwards).

The RKB Explorer's People Tab

This "Community of Practice"-style interface enables users to identify, and obtain integrated information about, individuals who have been dynamically determined by the RKB to be closely related, e.g. through paper co-authorship, or project membership

The RKB Explorer's Projects Tab

This interface enables users to identify, and obtain information about, a given project and to identify other projects that have been dynamically determined by the RKB to be closely related to it.
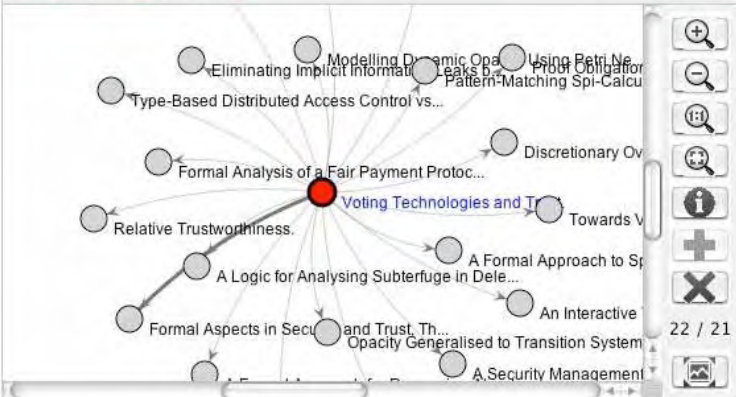
The RKB Explorer's Publications Tab

This interface enables users to identify, and obtain information about, a given publication and to identify other publications that have been dynamically determined by the RKB to be closely related to it.

ReSIST / Maps / ReSIST Members

ReSIST is a "Network of Excellence" that integrates leading researchers active in the multidisciplinary domains of Dependability, Security, and Human Factors, from across Europe as shown below.
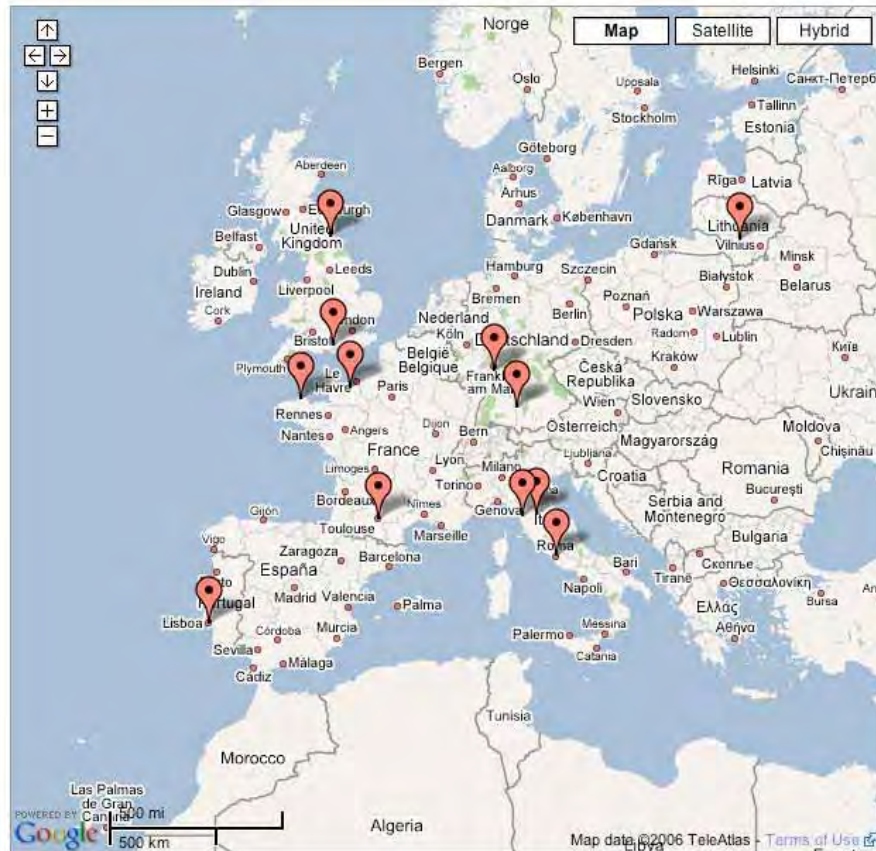
An experimental Geographical Interface

- The map shows member institutions of the ReSIST Network of Excellence

- Clicking on a pointer takes one to integrated information (on people, projects, publications) related to that institution

WG 10.4, Guadeloupe, Jan 2007

Integration

- Information from each separate source is associated with an appropriate set of so-called "ontologies" - which are in effect dictionaries defining words and relations between words in terms of other words.

- Existing general ontologies are being used for such domains as "people", "publications" and "projects".

- "Basic Concepts and Taxonomy of Dependable and Secure Computing" (IEEE TDSC, Jan 2004) is the starting point for a resilience (i.e. dependability & security) ontology

- The equivalent of bi-lingual dictionaries are used to indicate relations between words from different domains, e.g.:
  - is equivalent to
  - is a subset of

- Facilities are provided to assist with the "co-referencing " problem – sorting out whether name variants do or do not refer to the same individual

The Plan . . .

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- **Hence this presentation**