



# ReSIST's Resilience Knowledge Base

Brian Randell



## 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 prototype 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).



ReSIST RKB Explorer

**ReSIST** RESILIENCE FOR SURVIVABILITY IN IST  
KNOWLEDGE BASE EXPLORER  
VERSION 0.9.3

People | Research Areas | Publications | Projects | Search | Recently Viewed | Help

**Prof Brian Randell**

**Detail**

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**Homepage:** <http://www.cs.ncl.ac.uk/people/id=4>  
**Other searches:** [Google Scholar](#)

People	Research Areas	Publications	Projects
Jie Xu	Attribute Of Dependable Systems	Voting Technologies and Trust	CABERNET
Alexander Romanovsky	Fault Tolerance	Voting Technologies and Trust.	Network of Excellence in distributed and dependable computing systems
Alexander B. Romanovsky	D.4.5. Reliability	The atomic manifesto	MAFTIA
Robert J. Stroud	Safety	The atomic manifesto	Malignous- and Accidental-Fault Tolerance for Internet Applications
J C Laprie	Reliability	The atomic manifesto: a story in four quarks.	The esprit network of excellence in distributed computing systems architectures
Algirdas Avizienis	Maintainability	A systematic classification of cheating in online games.	
Jean-charles Fabre	Robustness		
Jean-Claude Laprie	Reinitialisation		
J E Dobson	Termination		

## 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



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People | Research Areas | Publications | **Projects** | Search | Recently Viewed | Help

**Resilience for Survivability in IST** Maximize

22 / 21

**Detail**

**Name:**  
Resilience for Survivability in IST

**Funding source:**  
The European Union

**Funding amount:**  
4500000 EUR

**Start date:**  
2006-01-01

**End date:**  
2008-12-31

People	Research Areas	Publications	Projects
LAPRIE	Telecommunications	Fault Injection for Dependability Validation: A Methodology and Some Applications.	ReSIST WG Arch
Nick Moffat	Information Processing, Information Systems	Fault Injection for Dependability Validation	ReSIST WG Eval
Nicolas Riviere		Error processing and fault treatment	ReSIST WG Algo
Nigel R. Shadbolt		Fault Injection and Dependability Evaluation of Fault-Tolerant Systems.	ReSIST WG Verif
Neil Henderson		Dependability evaluation	ReSIST RKB Editorial Board
Nicolas Salatge			ReSIST Training and Dissemination Committee
Neeraj Suri			ReSIST WG Socio-Technical Systems
Miklos Telek			
Minh Duc N'Guyen			

## 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.

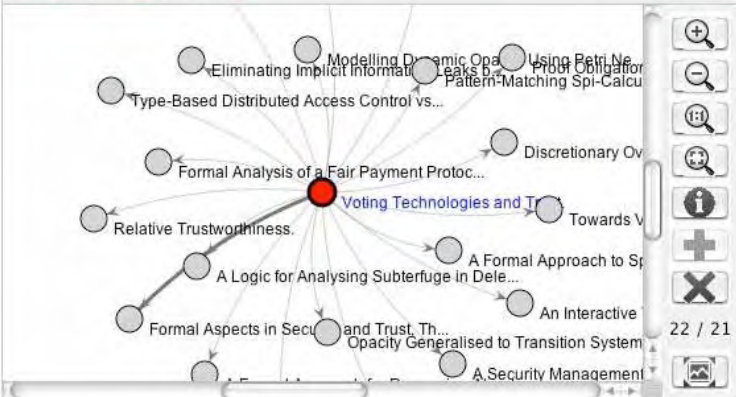


ReSIST RKB Explorer

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VERSION 0.9.3

People Research Areas **Publications** Projects Search Recently Viewed Help

**Voting Technologies and Trust.** Maximize



Detail

**Title:**  
Voting Technologies and Trust.

22 / 21

People	Research Areas	Publications	Projects
Brian Randell Peter Y. A. Ryan	No matching research areas found	Formal Aspects in Security and Trust, Third International Workshop, FAST 2005, Newcastle upon Tyne, UK, July 18-19, 2005, Revised Selected Papers Modelling Dynamic Opacity Using Petri Nets with Silent Actions. Opacity Generalised to Transition Systems. Normative Specification: A Tool for Trust and	No results found

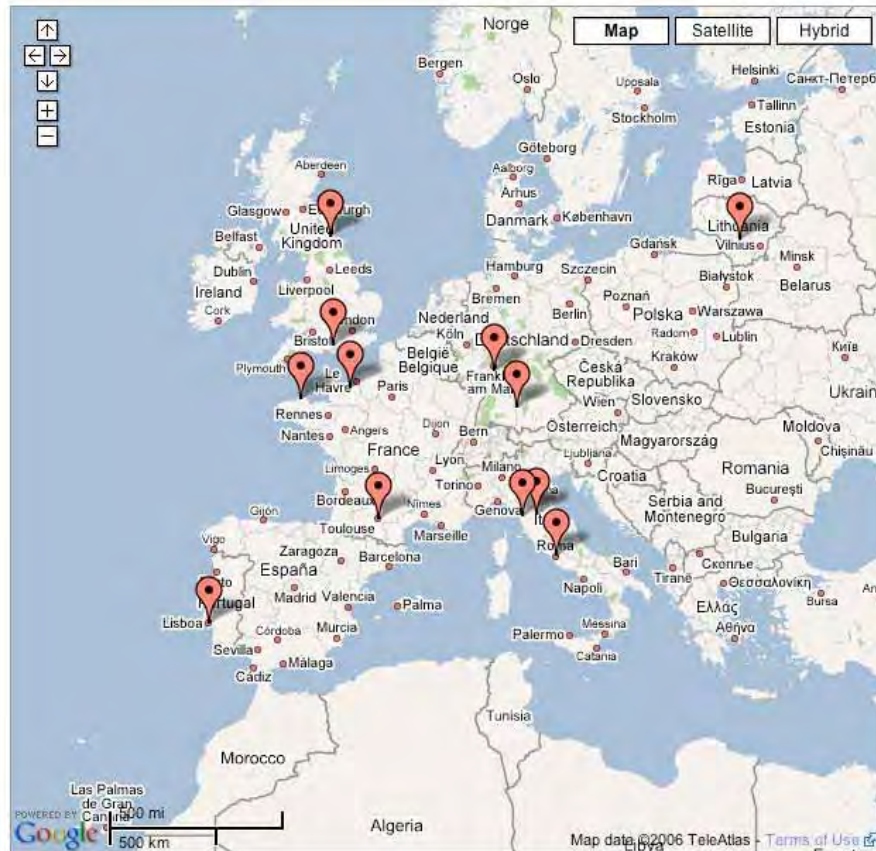
## The RKB Explorer's Publications Tab

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



## 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 . . .

- 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
- **Hence this presentation**