



## Prof. Kurt Rothermel

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### Biography

Kurt Rothermel received his doctoral degree in Computer Science from Stuttgart University in 1985. From 1986 to 1987 he spent a sabbatical at the IBM Almaden Research Center in San Jose, and joined IBM's European Networking Center in 1988. He left IBM in 1990 to become a Professor for Computer Science back at Stuttgart University.

### Research Interests

Kurt Rothermel leads the Distributed Systems Research Group at the Department of Distributed Systems. His current interests focus on infrastructures for ubiquitous computing, distributed systems, communication protocols, in particular location aware systems.

### Nexus-Project

Spatial-aware systems know the position of the objects they model, e.g. the positions of their users. A wide area of new applications arises, if it is additionally possible to augment the real world models by virtual objects, such as, for example, "Virtual Post-Its". The objective of Nexus is to develop generic system functions, which support spatial-aware systems and an augmented model of the real world. These functions will allow to create an augmented world model, to integrate existing and new information services into this model and to interact with it. Changes in the real world, e.g. position changes, are observed by sensor systems and propagated to the model, which will be updated accordingly. The Nexus project started in November 1998 with funding from the Government of Baden-Württemberg. Since January 2000 it is a research group of the DFG. See [www.nexus.uni-stuttgart.de/](http://www.nexus.uni-stuttgart.de/)

### Canu Project: Communication in Ad Hoc Networks for Ubiquitous Computing

In the CANU project the challenges of communication in ad hoc networks are addressed with respect to ubiquitous computing scenarios. The context-awareness of ubiquitous computing applications is manifested in a model of the environment. This model is called "experience" reflecting the perception and interaction of a node with its environment. The exchange of such model data between nodes as well as querying information of other nodes via the experience decouples the application from various information sources, e.g. sensors, user input, model updates with other nodes. Currently the focus of CANU is on designing an appropriate generic structure of the experience along with basic algorithms, e.g. information diffusion for model updates or routing of queries to a location offering the most current state of the information. Another objective of CANU is the investigation of the influence of such a generic information exchange model to application architectures.

### Recent Publications

A. Leonhardi, K. Rothermel. *A Comparison of Protocols for Updating Location Information*. In Batzer Cluster Computing Journal, Special Issue on Spatial Location in Networking, 2001, to appear

F. Hohl, U. Kubach, A. Leonhardi, K. Rothermel, M. Schwehm. *Next Century Challenges: Nexus - An Open Global Infrastructure for Spatial-Aware Applications*. In Proceedings of the Fifth Annual International Conference on Mobile Computing and Networking (MobiCom '99), pp. 249-255, Seattle, WA, USA, August 1999

A. Leonhardi, U. Kubach, K. Rothermel, A. Fritz. *Virtual Information Towers - A Metaphor for Intuitive, Location-Aware Information Access in a Mobile Environment*. In Proceedings of the Third International Symposium on Wearable Computers (ISWC'99), pp. 15-20, San Fransisco, CA, USA, October 1999

U. Kubach, K. Rothermel. *An Adaptive, Location-Aware Hoarding Mechanism*. In Proceedings of the 5th IEEE Symposium on Computers and Communications (ISCC 2000), pp. 615-620, Antibes, France, July 2000

U. Kubach, K. Rothermel. *Exploiting Location Information for Infostation-Based Hoarding*. In Proceedings of the 7th Annual International Conference on Mobile Computing and Networking (MobiCom 2001), Rome, Italy, July 16-21, 2001