# Dr. Michael Beigl

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## Biography

Michael Beigl is Senior Research Assistant at the University of Karlsruhe, from where he obtained both his MSc (1995) and PhD (2000) degrees in computing. Michael Beigl joined the University's Telecooperation Office (TecO), a computer science unit conducting collaborative projects in applied telematics, in 1995 as technical lead of the group's ubiquitous computing effort. He is now senior researcher and manager of the TecO.

## Research

Michael Beigl leads the TecO Ubiquitous Computing research group at the faculty of Informatics. His interests evolve around people at the center of communication and information technology, with specific interest in novel information appliances and artefacts, in mobile and ubiquitous networks, human-computer interaction and in context awareness. Questions addressed in his research are: How should such computer be integrated into the environment and everyday objects (digital artefacts), how can all these small artefacts work together (communication & networks) and form one interface (HCI), in what way differs interaction in such environments from today known human-computer interaction (e.g. context-awareness, implicit HCI) and what are then the implications for an overall interface and for systems providing such an interface.

These questions are subject to many application centered research projects, most notably Smart-Its and MediaCup. Both projects provide insights into the augmentation of digital artefacts with sensing, processing, and communication capabilities, and into the provision of an open infrastructure for information exchange among artefacts. One of the artefacts studied is the MediaCup itself, an ordinary coffee cup invisibly augmented with computing and context-awareness. A more general approach is taken in the Smart-Its project. A Smart-Its is a small piece of electronic that will be small and unobtrusive enough to have them post hoc attached to any kind of artefact. The objective is to develop a configurable awareness device that integrates core sensors and perception techniques but that can be dynamically re-configured to compute context specific to an artefact. Smart-Its are connected through a network supporting loosely-coupled spatially-defined communication.

The Smart-Its project is a collaboration between European research institutes and funded by the EU through the Dissappearing Computer initiative. Research areas investigated by TecO are digital artefacts design (hard- and software co-design, sensor nodes), operating systems, networks and higher-level communcation and energy issues. For further information see *smart-its.teco.edu* and *mediacup.teco.edu*.

## Recent Publications

Michael Beigl, Hans-Werner Gellersen, Albrecht Schmidt. *MediaCups: Experience with Design and Use of Computer-Augmented Everyday Objects*, Computer Networks, Special Issue on Pervasive Computing, Elsevier, Vol. 35, No. 4, March 2001, Elsevier, p. 401-409

Lars Erik Holmquist, Friedemann Mattern, Bernt Schiele, Petteri Alahuhta, Michael Beigl and Hans-W. Gellersen: *Smart-Its Friends: A Technique for Users to Easily Establish Connections between Smart Artefacts*, Ubicomp 2001, to be published

Michael Beigl: *Memoclip: A location based Remembrance Applicance*, 2th International Symposium on Handheld and Ubiquitous Computing (HUC2000), Bristol, UK, Sept. 25-27, 2000 and Personal Technologies Vol. 4 No. 4 2000, Springer Press, pp. 230-234