



Goals of the mTeam project

The development of powerful, mobile devices, equipped with Internet connectivity and fast wireless local area networks, creates new opportunities for collaborative work. In the modern Knowledge Economy, mobile, nomadic knowledge workers work in flexible teams on projects that require a creative approach. The goal of the *mTeam project* is *enabling the creation of applications that would exploit the full potential of mobile devices in the support of collaborative work*. The realization of this goal requires the fulfilment of several requirements:

- Since the users of mobile devices do not always have Internet connectivity, collaborative applications should be distributed and able to work even in the absence of a fixed infrastructure.
- Security, privacy and trust management are a crucial requirement for users of collaborative applications.
- True collaboration exists only in a social context that should be expressed and used by the supporting applications.

The mTeam project will focus on the algorithmic foundations and basic research problems in realizing such decentralized collaborative applications, as well as systems issues like creation of middleware that can be used to support these applications. For the purpose of middleware evaluation, two applications will be developed that will exploit the entire spectrum of middleware functions: the *TeamCreator* and the *TeamEnvironment*.

The *TeamCreator* will be used for the task of team design and team management. A manager that wishes to solve a problem needs to answer the following questions: who, of the people I know, can solve my problem? Whom do I trust to do a good job? How can I get to know the people who can help my team? These, and alike questions can be answered by an application that uses an *innovative social network* to express the mental map of the users' social environment. The social network will have three dimensions: of acquaintance, expertise and trust. The *TeamCreator* will build this social network using information provided by the *TeamEnvironment*, subject to access control restrictions that protect a users' privacy and ownership of social information.

The *TeamEnvironment* will be a combination of a *distributed version control tool with collaborative applications* such as instant messaging, VoIP, whiteboards and noticeboards. Users of the *TeamEnvironment* should be supported in their collaborative work on a given project. The *TeamEnvironment* will use access control restrictions to private or shared information. The *TeamEnvironment* should also generate information that can be used by the *TeamCreator* to build the three-dimensional social network.

The *TeamCreator* and *TeamEnvironment* will use a middleware that will be capable of running on mobile devices such as smartphones or PDAs, as well as on desktop PCs, and will use a P2P layer that does not assume 24/7 access to a server infrastructure. The creation and perfecting of this middleware are the practical goals of the mTeam project. To demonstrate the usability of the middleware, we will focus on supporting additional test case applications. A planned application will support collaboration among environmental

scientists - active in monitoring, modeling or analysing data, and sharing knowledge, who often find themselves in such intermittently connected networks, and also need to find information and collaborate with domain experts of diverse backgrounds.