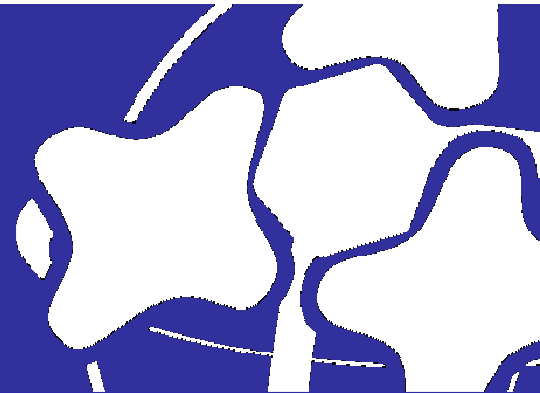


Interaction and Context Based Technologies for Collaborative Teams

Context-aware relevance-based pervasive services support dynamic collaboration of knowledge workers in multiple team configurations – adaptive and pro-active services anywhere, anytime, anybody, any device.



Introduction

Knowledge workers are increasingly engaged in various projects at the same time requiring flexible collaboration. **New team forms** emerge that feature dynamic interaction patterns currently unsupported by existing software services.

Relevance-based service aggregation and provisioning are key to improved human collaboration

Teams of virtual, nimble, or mobile/nomadic kind evolve and merge to reflect the vibrant nature of human interaction.

To enable efficient collaboration amongst team members and effective

participation of individuals in multiple teams at the same time, collaboration environments need to exhibit capabilities for large-scale interaction, peer-to-peer communication, and loose coupling in a trusted serviced-oriented way.

inContext strives to enable dynamic collaboration by exploring new techniques and algorithms for pro-active service aggregation, context-aware service adaptation and service provisioning.

Project Objectives

inContext's contribution will be twofold. On the one hand, new techniques and algorithms for mining human-to-human and human-to-service interaction patterns provide the foundation for providing relevant services at the right place and time. On the other hand, a new generation of services no longer merely reacts to changes in a collaborative environment but anticipates transitions and adapts accordingly. To this end, relevance-based context representation models and methods for context-coupling and enrichment allow for autonomic service adaptation and provisioning.

At a glance: inContext

Interaction and Context Based Technologies for Collaborative Teams

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Duration:

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Total cost:

4,044,089

EC funding:

2,497,264

Strategic Objective:

2.5.9 Collaborative Working Environments

Project Identifier:

FP6-034718



First Year Achievements

A first prototype of the inContext Pervasive Computing Ser and its main component has been developed as result of the first project year efforts. Relevant results in every one of the project's key research and innovation areas have been achieved and could be demonstrated on a selected user scenario through a specifically developed web application.

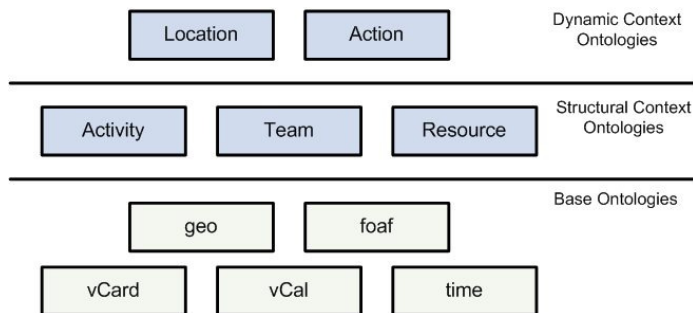
Results have been achieved in all the project's four key innovation areas

Dynamic interaction patterns: mining and algorithms.

A logging infrastructure enables the observation of interactions which are persisted as events for highlevel data mining. Current algorithms allow the extraction of social networks of teams, human interaction patterns, service performance figures, as well as metrics on teams, actors, and actor's relationships. The results are presented in a user interface utilizing graph visualization techniques.

Context representation, transformation models and reasoning techniques.

Data models and ontologies for collaborative work have been developed and implemented in a context store, which is queried by other parts of the platform to answer context related queries. The query mechanism is enhanced by a reasoning engine that can combine simple sensor data into more complex information concepts. A further concern of this phase was the implementation of software sensors to gather context data. Next steps will be concerned with refining the reasoning and context store implementation and model.

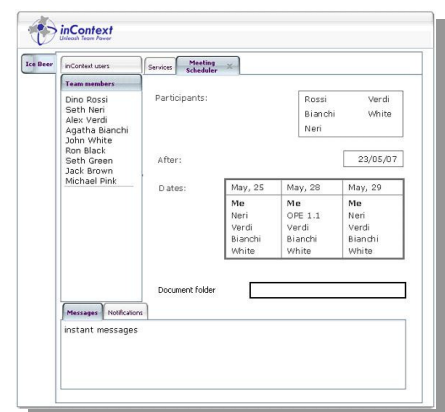


Relevance-based service aggregation and provisioning techniques.

A first prototype contains core services which enables the system to select automatically most relevant services for composition based on non-functional properties and the user's context. In a next step aggregation metrics will be defined to automatically combine services into higher level services by also using the composition context.

Autonomic service adaptation: Context learning, coupling, and enrichment.

The first prototype of the context tunnelling framework integrates an Activity Service and message annotation mechanism to correlate contexts and services. This allows simple tunnelling of context information between completely decoupled collaboration services.



Demonstration Case: Schedule a Meeting

One specific user scenario was selected and used as basis for the development of an application level software component. The chosen scenario is based on an Use Case elaborated together with the end user partner Electrolux and involves activities to automaticaly schedule a meeting. These activities include proposing dates, participants and relevant documentation by the exploitation of context information. The application is based on web technologies and makes use of Ajax technology for an increased interactivity and user interface expressiveness.