

DMC — Distributed and Mobile Collaboration Workshop Report

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1. Introduction

Recent distributed and mobile collaboration technologies enable people to work in nomadic, dynamic teams. In these teams, team-members frequently join and leave the team, change their geographic location, or invite external experts to contribute their expertise. Therefore, the ability to query the company's distributed knowledge base and the search for experts in a specific domain even across enterprise boundaries are key requirements for systems supporting knowledge workers. To enable the collaboration across enterprise boundaries, many recent systems take advantages of Semantic Web technologies.

The Semantic Web [1] as initiated by the World Wide Web Consortium (W3C), provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries [6]. The Semantic Web ontologies are used to represent the knowledge on the computer. An ontology formally describes the concepts found in the application domain, the relationships between these concepts, and the properties used to describe the concepts [3, 4]. Therefore, the ontology defines the shared vocabulary that is used in many distributed collaboration systems [2, 5, 7].

Independently of the business domain, also private "collaboration" has become an important issue. Virtual communities, may these be social networks or virtual enterprises, have recently enjoyed a tremendous popularity. These virtual communities are starting to require functionalities for collaboration in the broadest sense similar to those in business environments. In addition, the wide-spread availability of mobile devices makes support for mobility an arising topic in this domain as well.

The Distributed and Mobile Collaboration workshop (DMC) took place at the 17th IEEE International Work-

shops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE), that is, on June the 24th and 25th 2008 in Roma, Italy. The 2008 edition has been the fifth one of DMC. The workshop has registered 9 paper submissions out of which 4 papers were selected as full papers (44.4% acceptance rate).

2. Workshop Sessions

The papers presented at the DMC workshop can be broadly classified into technical papers focusing on building and maintaining connections between collaboration partners, and papers focusing on architectural aspects of collaboration systems. DMC addresses both of these challenges and functions as a discussion forum for the latest research in these new technologies. In the following, we review the sessions held one by one:

2.1 Technical Aspects

The first session focused on technical aspects of collaboration systems and comprised the following papers:

- *Mobile Ad hoc Networks for Collaborative and Mission-critical Mobile Scenarios: a Practical Study* by Gianluca Bertelli, Massimiliano de Leoni, Massimo Mecella and Justin Dean
- *Service Discovery for Semantic Peer-to-Peer Cooperation* by Devis Bianchini, Valeria De Antonellis, Michele Melchiori and Denise Salvi

The paper "Mobile Ad hoc Networks for Collaborative and Mission-critical Mobile Scenarios: a Practical Study" presents a survey on keeping up TCP/IP WLAN connections while the communication partners are moving. The

authors present experimental results about the emulation of communication protocols in Mobile Ad hoc Networks (MANet). The idea is to exploit real mobile devices that communicate through a fixed workstation that simulates several topologies.

In “Service Discovery for Semantic Peer-to-Peer Cooperation” the authors propose an approach to quickly discover the providers of a certain service by means of (a) Peer reference architecture including a semantic layer providing information about providers offering similar services; (b) rules for navigating this semantic layer to discover matching services; and (c) considerations about the evolution and maintenance of the semantic layer. The proposed approach is situated in a fully distributed p2p system.

2.2 Architectural Aspects

The second session focused on architectural aspects of collaboration systems and comprised the following papers:

- *A Context-aware Data Sharing Service over MANet to Enable Spontaneous Collaboration* by Juan A. Botia, Hoa Ha Duong, Isabelle Demeure and Antonio F. Gomez-Skarmeta
- *An Architecture for an Adaptive and Collaborative Learning Management System in Aviation Security* by Yi Guo, Adrian Schwaninger and Harald Gall

The paper “A Context-aware Data Sharing Service over MANet to Enable Spontaneous Collaboration” presents a context-aware data sharing service over MANet to enable spontaneous collaboration between mobile workers. Context information is used to adapt services and applications to user situation as well as working groups situation.

In “An Architecture for an Adaptive and Collaborative Learning Management System in Aviation Security” the authors present an architecture for a learning environment for the domain of aviation security. In this domain specific mechanisms are needed to quickly adapt to new learning content, to support different roles ranging from screeners to supervisors, and to enable flexible training scenarios and solid job assessments. The presented system is flexible and adaptive both in knowledge and organizational dimensions.

3. Acknowledgements

We thank all authors and participants in the workshop for their valuable contributions and fruitful discussions. We are also grateful to our program committee members who helped us in evaluating the papers for this workshop. Further, we want to thank the WETICE chair and all organizers for making the event possible.

References

- [1] T. Berners-Lee, J. Hendler, and O. Lassila. The Semantic Web. *Scientific America*, 284(5):34–43, 2001.
- [2] S. Castano, A. Ferrara, and S. Montanelli. Ontology knowledge spaces for semantic collaboration in networked enterprises. In *Business Process Management Workshops 2006*, Vienna, Austria, September 2006.
- [3] T. R. Gruber. A translation approach to portable ontologies. *Knowledge Acquisition*, 5(2):199–220, 1993.
- [4] N. F. Noy and D. L. McGuinness. *Ontology Development 101: a guide to creating your first ontology*. Stanford University, Last visited October 2007. http://protege.stanford.edu/publications/ontology_development/ontology101.pdf.
- [5] G. Reif, T. Groza, S. Handschuh, C. Mesnage, M. Jazayeri, and R. Gudjonsdottir. Collaboration on the social semantic desktop. In *Workshop on Ubiquitous Mobile Information and Collaboration Systems (UMICS 2007) at CAiSE 2007*, Trondheim, Norway, June 2007. Springer Verlag.
- [6] World Wide Web Consortium (W3C) Semantic Web activity homepage. <http://w3c.org/sw>.
- [7] H.-L. Truong, S. Dustdar, D. Baggio, C. Dorn, G. Giuliani, R. Gombotz, Y. Hong, P. Kendal, C. Melchiorre, S. Moretzky, S. Peray, A. Polleres, S. Reiff-Marganiec, D. Schall, S. Stringa, M. Tilly, and H. Yu. incontext: a pervasive and collaborative working environment for emerging team forms. In *The 2008 Symposium on Applications & the Internet*, Turku, Finland, July 2008.