

Next Generation Virtual Organisation Concepts in GRID Environments

Workshop 4e: 16:00 Wednesday 19 October 2005

Abstract

Emerging ICT paradigms are making virtual organizations (i.e. dynamically evolving, collaborative enterprises with participating entities pooling resources, services and information in order to achieve common objectives) possible by providing for the dynamic management of the distribution of computational processes across available resources. However the understanding of – Virtual Organizations – differ significantly in different domains such as economics, Grid computing, collaborative environments and other areas of distributed systems. The goal of this workshop is to provide an overview of the different VO concepts and outline how these concepts fit to selected scenarios.

Description

This workshop is jointly organized by the Integrated Projects Akogrimo, TrustCoM, ELeGI and Adaptive Services Grid. These projects are either active in the design of the next generation grid architectures or can be seen as early adopters of Grid concepts in a business context.

Objectives

The objectives of this workshop is to understand the different views on Virtual Organizations targeted in the most important Next Generation Grid projects in Europe in the context of concrete distributed applications from different domains and the specific challenges that need to be addressed. In particular the new challenges arising while moving from academic grid environments towards business oriented settings are of particular interest.

The contributors to this workshop have been selected from Integrated Projects of different domains. Beside the driving forces of the next generation architecture of Grids in Europe namely NextGrid and Akogrimo contributions from purely business driven Virtual Organisations (TrustCoM) and collaboration focused models (ELeGI) will provide a comprehensive picture of different next generation VO models.

It is planned to make this workshop the first in a series of similar workshop as it is expected that the convergence of VO models is not likely to happen in short term and regular exchange of ideas and the feedback from delegates with a business context is highly desirable.

Target Audience

The workshop is of interest to a wide range of delegates with a focus on:

Researchers: in secure distributed systems, web services technologies, collaborative business processing and collaborative environments and grids.

Early Adopters: Industry Practitioners in particular from the process, collaborative engineering, and electronic service provision industry.

Programme

Secure and Dynamic Virtual Organizations for Business

Lutz Schubert, Höchstleistungsrechenzentrum Stuttgart, Germany

"Virtual Organizations" belong to the key concepts in the Grid computing community. They are currently evolving from basically static to dynamic solutions that are created ad-hoc in reaction to a market demand. This paper provides a definition of "dynamic Virtual Organizations" in order to assess specific challenges applying this concept in a business environment. Within TrustCoM two distinct scenarios representing different extremes have been selected in order to validate the TrustCoM framework. Within this paper starting from a short analysis of the specific requirements

of the two scenarios the parts of the TrustCoM architecture for supporting Virtual Organisations are shown from a VO management but also from an infrastructure viewpoint including their collaboration.

Enabling Knowledge Construction in Learning Processes through Virtual Learning Communities

Nadia Romano, CRMPA, Italy

As online collaborative technologies become easier to use and organisations realise that knowledge is a valuable resource that needs to be managed, virtual communities create a suitable environment for the knowledge building process in a competitive global environment. The knowledge sharing is the most innovative goals of modern e-learning systems, which rely on the shift, in a pedagogical sense, from information transfer to knowledge building paradigm. In this context, dynamic virtual learning communities provide collaboration and cooperating capabilities and services to assist all participants involved in the learning process and to support the acquiring of new knowledge through experimentations and simulations. ELeGI project, having the ambitious goal to develop software technologies for effective human learning, cannot neglect these issues. This paper will outline initial works from the ELeGI project and, in particular, will discuss the main characteristics of the virtual learning communities and the services that are been envisaged.

Specific Challenges of Mobile Dynamic Virtual Organizations (MDVO)

Christian Loos, Universität Hohenheim, Germany

Mobility adds specific new challenges to Virtual Organizations (VO). The challenges for Membership Management and Service (Provider) Selection is significantly different compared to traditional Virtual Organisation (VO) in particular to static infrastructures typical in research Grid deployments. Having VO nodes that change their context such as location, device capabilities, connection quality etc. affect the way how tasks can be distributed. Furthermore nodes can even go offline without notice for an undetermined time. This paper discusses the specific new challenges of Mobile Dynamic Virtual Organizations (MDVO) aligned with a generic scenario from the e-Health domain and how the Session Initiation Protocol (SIP) in particular combined with SIMPLE (SIP for Instant Messaging and Presence Leveraging Extensions) is applied.