



Sparkling Science >

Science linking with School School linking with Science

Research Project

30.11.2009 – 30.08.2011

FUNSET Science: Future Network- Based Semantic Technologies

Concepts for the applications of semantic and software agent technologies in small- and medium-scale enterprises to form network organizations

LEADING INSTITUTION

Vienna University of Technology
Automation and Control Institute
Dr. Munir Merdan
merdan@acin.tuwien.ac.at

SCHOOL INVOLVED

Technologisches Gewerbemuseum, Vienna

PARTNER FROM ECONOMY AND SOCIETY

COPA-DATA GmbH, Salzburg



BMWF^a

www.bmf.gv.at
www.sparklingscience.at

Austrian Federal Ministry of Science
and Research

Basic Information about Sparkling Science

Sparkling Science is a research program of the Federal Ministry of Science and Research (BMWF) which started in 2007 and adopts an unconventional way in the promotion of young scientists that is unique in Europe.

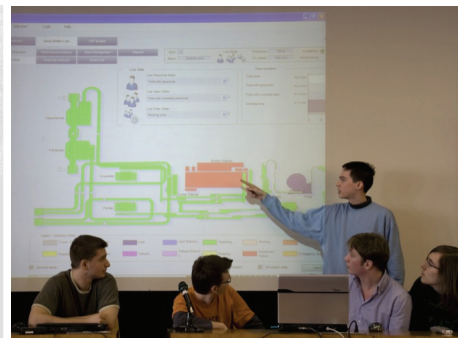
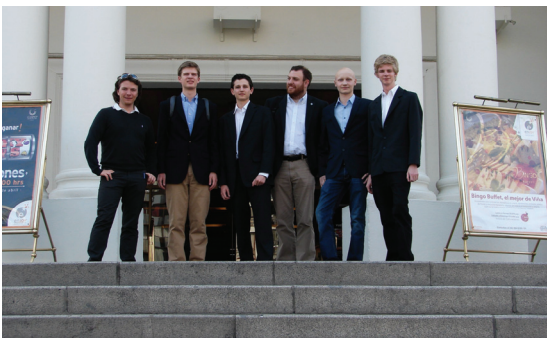
The specific characteristic of the program: so far 168* projects (94 of them have already been completed) scientists work side by side with young people in current scientific research projects: Sparkling Science supports big research projects and supported from 2007 until 2010 also smaller school research projects.

In the 114 big research projects (42 have already been completed) the young colleagues take an active part and work independently on parts of the research projects. As junior colleagues they introduce important suggestions into the research approach. They collaborate in the conception and conducting of investigations, conduct polls, collect data, interpret these together with the researchers and present the results at schools, universities and even at scientific conferences.

In a second initiative within the Sparkling Science program the BMWF awarded grants to smaller projects that were submitted and conducted not by the involved research institutions, but by the schools, who designed and lead the projects themselves. In these projects, too, schoolchildren worked closely together with researchers, supporting state-of-the-art research activities and contributing to the results.

Both sides of the program is/were open to a broad thematic spectrum. Research is carried out on all sorts of different topics: from mechatronics and molecular biology to migration research, from acoustics and biometrics to literature research.

* Status quo: January 2012



One Example out of 168


FUNSET Science: Future Network-Based Semantic Technologies

The capability of enterprises to form network organizations (Virtual Enterprises) and to cooperate with partners is an important factor for a competitive market position. The information and knowledge exchange between partners play a critical role for the success of such networks. It is of biggest importance to have an optimized information flow to find the appropriate knowledge source in the desired quality and in adequate time.

In current networked organizations it is usually not transparent to the partners, which knowledge is available at which partner's site. Our approach is to use semantic technology together with software agents in order to improve knowledge capturing, knowledge reuse, and knowledge transfer. The software agents are used within a complex virtual company to control certain components and processes (domains). Semantic means in this context, that all relevant concepts important for small and medium-sized enterprises (SME) will be modelled into an ontology by capturing the associations between the domains, ensuring at the same time the understanding of exchanged knowledge during the inter-agent communication.

This allows business partners to build open communities that define and share the semantics of the information exchanged in their domain. The development of an ontology for the most SMEs is still not very common, as many companies hesitate to start this resource-intensive process. The goal of the project is to develop and implement the concepts for the applications of the semantic and software agent technologies in particular SMEs and to present the best practice as well.





Sparkling Science >
Science linking with School
School linking with Science

oead

www.bmwf.gv.at
www.sparklingscience.at

BMWF^a

Austrian Federal Ministry of Science
and Research