

## **A new European concept for secure messaging**

**VTT Technical Research Centre of Finland and its nine European research and industrial partners are developing a telecommunications solution for critical applications such as market data delivery. Compared with the traditional messaging system, which is vulnerable in failure situations, the new self-healing, resilient messaging platform is markedly more secure. Its data protection solution is based on adaptable information security services, system monitoring and assurance solutions that improve system resilience.**

VTT's research is part of GEMOM (Genetic Message Oriented Secure Middleware), a recently launched research project, co-funded by the European Commission, DG INFSO (Emerging Technologies and Infrastructures Security Unit F5), within the ICT theme of the EU Seventh Framework Programme. The two-and-half-year project is scheduled for completion in June 2010.

GEMOM involves ten industry and research partners across Europe, with a total cost of about EUR 5 million. It is being co-ordinated by CNIT – the Italian National Consortium for Telecommunications and Q-Sphere Ltd. The rest of the partners include NR Norwegian Computing Center, HP European Innovation Center, Queen Mary University of London, JRC Capital Management and Research GmbH, Datel Consulting International, Diginus and TXT eSolutions.

GEMOM supports a messaging infrastructure which will offer assurance against security vulnerabilities and erroneous input vulnerabilities at significantly lower cost than existing solutions, thus improving the reliability, integrity and availability of the infrastructure. The project is concerned with the development of a secure, self-organising and resilient messaging platform, which enables reliable message sourcing and delivery in security-critical applications. Thanks to the platform's resilience, even serious failures will not compromise the system's higher level functionality. The most critical functions will remain available even if a part of the functionality is lost. VTT's research in the project is focused on the study and development of information security and resilience solutions.

Commercial and industrial enterprises spend billions of euros in messaging applications annually. In Europe alone, the annual market volume reaches several millions. Large companies investing in new messaging technology look for resilience and scalability first, while for smaller enterprises cost is the primary factor, then resilience. Opening the market and competition to SMEs as well requires the development of a cost-efficient messaging framework that better meets the resilience and scalability requirements and provides assurance against security vulnerabilities and erroneous input vulnerabilities.

The explosive popularity of IT networks, adoption of Service Oriented Architectures and ubiquitous computing are changing our understanding of what the "computer" or even simple applications are. We are on the threshold of an era where the "network becomes the computer". Information networks are emerging alongside computers as independent entities that may perform simple software tasks. The GEMOM messaging platform

enables fluid, resilient and adaptive messaging which fully supports this shift in data processing and IT evolution.

VTT's information security research project is particularly concerned with developing proactive security assurance methods and technical security solutions by combining top expertise from various fields. VTT's information security research focuses on areas such as information networks, equipment and systems for the data communication and software sectors, authentication systems and critical infrastructure.

For further information:

Reijo Savola, Network and Information Security Research Coordinator, VTT  
Tel. +358 20 722 2138  
[reijo.savola@vtt.fi](mailto:reijo.savola@vtt.fi)

Kaarina Karppinen, Research Scientist, Project Manager  
Tel. +358 20 722 2373  
[kaarina.karppinen@vtt.fi](mailto:kaarina.karppinen@vtt.fi)