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Sentinels in a nutshell

A short introduction to the Sentinels research program

Rik D.T. Janssen, Technology Foundation STW, March 2006

Sentinels is a Dutch 10 M€ research program, being financed by Technology Foundation STW (www.stw.nl), NWO (www.nwo.nl) and the Dutch Ministry of Economic Affairs (www.minez.nl). Sentinels has its own website at www.sentinel.nl.

This document is a short introduction to the Sentinels research program.

Aim

The Sentinels research program aims to improve ICT, networks and information security, including PCs, corporate and home networks, hand held devices, smart cards, and wireless networks. It targets the technical aspects of security through scientific research in close collaboration by academia and industry.

Scope

Sentinels' scope includes ICT, network and information security, where security is defined as follows:

Security is a property enabling ICT, networks and information systems to function correctly in the face of malice, error or mischance.

Security encompasses confidentiality, integrity and availability relative to authorized users, as well as authentication and non-repudiation. Personal privacy protection is seen as combining confidentiality and integrity.

Ambition

Established methods and tools contributing to the design and implementation of security include risk analysis, user acceptance of cost effectiveness, cryptography, security policy models, security protocols, security certification and biometrics. However, these represent partial solutions.

The ambition of Sentinels is to contribute to the creation of a comprehensive framework for secure systems

engineering. Given the fact that security impinges on every aspect of system design, the realization of this ambition is a long term process, extending over many years.

All Sentinels proposals are expected to contribute to realizing the Sentinels ambition.

Relevance

Mainframes, desktop computers, laptops, palmtops, mobile phones, etc., are all connected and accessible via networks, either wired or wireless. Only security is able to unlock the potential of this ubiquitous connectivity.

Confidentiality and authenticity of information exchange between computing machinery is often a necessary precondition for communication. Secure systems allow the participation of a large audience in e-commerce. Also, trustworthiness may improve the success and acceptance of e-government, for instance with e-voting.

Improved security resulting from Sentinels research enables new business and new developments and is therefore important for the Dutch economy. Annually, millions of euro may be saved by preventing information security problems in government and industry.

Proposals

One of the most important aspects of Sentinels is the *collaborative* aspect of research projects. Universities and industry carry out projects together. Projects are pre-competitive and tackle long-term problems.

Participation in Sentinels projects allows companies to profit from knowledge found during the research, at the earliest possible moment. Each granted project has a forum for communication between industry and university and closely follows the progress of the research. Members have priority to claim the use of the knowledge developed. Other benefits are direct contact with researchers leading to creation and expansion of



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networks, knowledge dissemination and anchoring of knowledge.

Collaborative research means that industry participates in the research and contributes to a project. This can be done by providing financial or material support or by providing research personnel. The size of the contribution depends on the type of research:

1. Fundamental research: industrial partners carry at least 10% of the research proposal's total costs;
2. Method and tools research: industrial partners carry at least 25% of the total costs;
3. Prototype research: industrial partners carry at least 40% of the total costs.

Management

The Sentinels program is managed by the Sentinels Steering Group, whose members represent the program's sponsors. The Steering Group is assisted by a Program Committee, a Daily Board and a Program Office. The Program Committee is responsible for the program's scientific content.

Steering Group members

The Sentinels Steering Group members are:

- Prof.dr. W. Jonker, Philips Research Laboratories & University of Twente (chairman)
- Dr. R.D.T. Janssen, Technology Foundation STW (secretariat)
- Dr.ir. A.A.J.M. Franken MBA, Technology Foundation STW & Netherlands Organization for Scientific Research
- Drs. H.J.T. Nieuwenhuis, Ministry of Economic Affairs

Program Committee members

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- Dr. R.D.T. Janssen, Technology Foundation STW (secretariat)
- Dr.ir. A.M. Bos, Chess Information Technology BV
- Ing. B.E. Elsinga, Capgemini Nederland B.V.
- Prof.dr. W.J. Fokkink, Centrum voor Wiskunde en Informatica & Vrije Universiteit Amsterdam
- Dr.ir. L.J.N. Franken, ABN-AMRO Bank N.V.
- Prof.dr. P.H. Hartel, University of Twente
- Prof.dr. B.P.F. Jacobs, Radboud University Nijmegen
- Dr.ir. P. de Jager, TNO ICT
- Dr. J.C. de Jong, SenterNovem
- E.R. de Lange, Ministry of Economic Affairs
- Dr.ir. J.C.A. van der Lubbe, Delft University of Technology

- Ir. H.A.M. Luijff, TNO Defensie en Veiligheid
- Prof.ir. E.F. Michiels, Ernst & Young EDP Audit
- Prof.dr.ir. B. Preneel, Katholieke Universiteit Leuven
- Ing. B. Snel, Comsec Consulting B.V.
- L.A.M. Strous, De Nederlandsche Bank N.V.
- Prof.dr. A.S. Tanenbaum, Vrije Universiteit Amsterdam
- Prof.dr.ir. H.C.A. van Tilborg, Technische Universiteit Eindhoven
- Prof.dr. E. Verheul, PricewaterhouseCoopers & Radboud University Nijmegen
- Dr. E.P. de Vink, Technische Universiteit Eindhoven & Leiden University

Daily Board members

The Sentinels Daily Board members are:

- Prof.dr. W. Jonker, Philips Research Laboratories & University of Twente (chairman)
- Dr. R.D.T. Janssen, Technology Foundation STW (secretariat)
- Prof.dr. B.P.F. Jacobs, Radboud University Nijmegen
- Dr.ir. P. de Jager, TNO ICT

Program Office

The Program Office is organized by dr. Rik D.T. Janssen, Technology Foundation STW. He can be contacted using the information in the head of the first page.

More information

- The Sentinels website is www.sentinels.nl.
- "Sentinels in a nutshell" (this document) can be found at www.sentinels.nl/library/sentinelsnutshell.pdf.
- The research program text "Sentinels, Security in ICT, networks and information systems" (www.sentinels.nl/library/sentinels.pdf) includes information about scope, vision and focus, aims and objectives, anchoring and knowledge transfer, program management and the procedure.
- Sentinels year plans (from 2004, 2005 and 2006) and year reports (from 2004 and 2005) can be found at www.sentinels.nl/library.
- The document "Networking in knowledge" on www.stw.nl/Infobalie/Gebruikers.htm introduces Technology Foundation STW and their forums for information interchange between researchers and industry.
- The Technology Foundation STW brochure "Richtlijnen Open Technologieprogramma" (www.stw.nl/Infobalie/Aanvragers.htm, in Dutch) includes information on Technology Foundation STW, the format of research proposals and their drafting.