

Curriculum vitae [Jan. 2007]: Prof. Hans A. Hansson

Name:	Hans Arne Hansson	Born: August 8, 1957, Sundbyberg Sweden
Telephone/fax:	+46 70 491 2288 (phone)	+46 21 103110 (fax)
E-mail/WWW:	hans.hansson@mdh.se	www.mrtc.mdh.se/han

**A. Professional Preparation**

- 1992 PhD. (Tekn.Dr.) in Computer Systems, Uppsala University (UU). Thesis title: *Time and Probability in Formal Design of Distributed Systems*. Advisor: Prof. Bengt Jonsson.
- 1984 Tekn. Lic. in Computer Systems, UU. Thesis title: *From Formal Specification to Automatic Implementation of Communication Protocols*. Adv.: Prof. Björn Pehrson
- 1984 BSc. in Business Administration and Economics (ekonomexamen), UU.
- 1981 MSc in Eng. Physics (Civing. F), UU. Final year spent at Case Western Reserve University, Cleveland Ohio. Thesis title: The implementation of a Micro-Pascal code generator for intel-8086.

B. Appointments

- 1997 – Professor in Computer Engineering/Real-Time Systems, at Mälardalen University (Mdh)
- 2004 Visiting Professor at Universitat de les Illes Balears, Spain
- 1999 – 2004 Visiting Professor in Computer Systems at Uppsala University (UU)
- 1998 Docent in Computer Systems at UU
- 1988 – 1997 Senior Lecturer in Computer Systems at UU
- 1987 – 1993 Researcher and Scientific Advisor (1993) at SICS (Swedish Institute of Computer Science, Stockholm).

Commissions of trust

- 2006 – Director of the Strategic Research Centre PROGRESS
- 2005 – Director of Research (forskningsprefekt) at CSEE dept. at Mdh
- 1998 – Director Mälardalen Real-Time Research Centre, Mdh
- 1997 -- 2004 Program Director for the national research programme ARTES
- 2004 – Director of the industrial graduate school SAVE-IT
- 2002 – Coordinator of the national research programme SAVE
- 2005 – Member of the Swedish Research Council (VR) Computer Science Evaluation Committee
- 1999 – Member of the board of TeknIQ (KKS-supported technology transfer initiative)
- 1998 – 2004 Elected member of the board of Mälardalen University
- 1994 – 1997 Elected President of the Swedish National Association for Real-Time (SNART)
- 1996 – 1997 Department Chairman at DoCS, Uppsala University (Assistant Chairman 1987 – 1991)
- 1993 Assistant Laboratory Leader at the Distributed Systems Lab. at SICS.
- 2003 Co-chair and organiser of the European Summer School on Embedded Systems
- 2002 Program Chair for IEEE Workshop on Factory Communication, Västerås
- 2000 General Co-chair 7th Int'l Conf. on R-T Computing Systems (RTCSA'2000), Korea.
- 2000 Co-chair and organiser of 1st Sweden-Korea WS on RTS, Korea
- 1999 Program Chair for Euromicro Conference on Real-Time Systems, York, U.K.
- 2002 – Reviewer of the European IST project NEXT TTA and IST Integrated Project DECOS.
- 2003 Evaluator for a national European research programme in Embedded Systems
- 2003 – Associate editor of Kluwer's Real-Time Journal
- 2005 Guest Editor Special issue on Factory Comm. Systems of IEEE Tr. on Ind. Informatics
- 2000 – Mentor for RISE platform at BTH and member of reference groups for CERES profile at HH

C. Entrepreneurial achievements

- Director, initiator and driving force at Mälardalen Real-Time Research Centre (MRTC). From an initial size in 1999 of 1 professor, a handful of senior researchers, and 10 PhD-students, MRTC now includes 11 professors, ~20 additional senior researchers, and more than 60 PhD-students. MRTC features a unique combination of scientific excellence and close industrial collaboration, including projects with companies such as ABB, Bombardier, Ericsson, Scania, and Volvo, as well as with several SMEs.
- Responsible for and driving force behind the PROGRESS Strategic Research Centre, wick in fierce national competition, as the only such centre in Computer Science/Engineering, was awarded 43 MSEK in funding from SSF for the period 2006-2010.
- Responsible for and driving force behind the ARTES national research programme, with a 95 MSEK support from SSF; 1998—2006).
- Initiator and responsible of the national research initiative SAVE (Component Based Design of Safety Critical Vehicular Systems), involving researchers from Mdh, Uppsala, KTH and Linköping. SAVE is supported by SSF with 26.5 MSEK 2002-2007

- Initiator and responsible for SAVE-IT, an industrial graduate school supported by industry and a 20.8 MSEK grant from the KK-foundation.
- Instrumental in winning the "TeknIQ – Expertkompetens Intellegenta Produkter" programme to Mälardalen Univ. TeknIQ is a national initiative to strengthen embedded systems competence in SMEs, with a support of 65 MSEK from the KK-foundation 1999-2005.
- Co-founder of Zealcore Embedded Solutions AB. Established in 2001.
- Co-founder of Tau Datorsystem i Uppsala HB. Established in 1988.

D. Other Merits of relevance

Theses of graduate students under main supervision

Student name	Degree	Thesis title	year	Current pos.
Mikael Nolin	PhD	Predictable High-Speed Communications for Distributed RTS	2000	Prof. MdH/ SW-expert CC-Syst.
Henrik Thane	PhD	Monitoring, Testing and Debugging of Distributed Real-Time Systems	2000	CEO Zealcore
Andreas Ermedahl	PhD	A Modular Tool Architecture for Worst-Case Execution Time Analysis	2003	Researcher MdH
Thomas Nolte	PhD	Share-driven Scheduling of Embedded Networks	2005	Researcher MDH
Mikael Nolin	Lic.	Response-Time Analysis for ATM Networks	1997	-
Markus Lindgren	Lic.	Measurement and Simulation Based Techniques for RTS analysis	2000	Engineer at ABB
Daniel Häggander	Lic.	SW Design When Migrating to Multiprocessors	2000	Indep. consultant
Magnus Larsson	Lic.	Applying Config. Mgmt. Techniques to Component-based Systems	2001	Res. Mgr. ABB
Stefan Sjöholm	Lic.	Design of ASIC/FPGA with Top Down Design Flow and VHDL	2001	CEO RFHWC
Johan Furunäs	Lic.	Interprocess Communication Utilising Special Purpose Hardware	2002	Consultant at ÅF
Thomas Nolte	Lic.	Reducing Pessimism and Increasing Flexibility in CAN	2003	-
Joel Huselius	Lic.	Preparing for Replay	2003	PhD stud. at MdH
A. Pettersson	Lic.	Analysis of Execution Behavior for Testing of Multi-Tasking RTS	2003	PhD stud. at MdH
Daniel Sundmark	Lic.	Replay Debugging of Embedded RTS using Standard Components	2004	PhD stud. at MdH
Moham. El Shobaki	Lic.	On-Chip Monitoring for Non-Intrusive Hardware/Software Observability	2004	Manager Trittech

Other merits

- Postdocs hosted: Ken Tindell (1994-1995; PhD U. of York, UK), Peter Altenbernd (1996-1997; PhD U. of Paderborn, Germany), Philippas Tsigas (1997-1998; PhD U. of Patras, Greece), Sasikumar Punnekkat (1999-2000; PhD U. of York), Insik Shin (2006-; PhD from UPenn), and Cristina Seceleanu (2006-, PhD from Åbo Akademi).
- Participant in the European projects COST 11-bis and COST 11-ter (dealing with modelling of Communication Networks), the Esprit projects SPEC and CONCUR (formal methods for concurrency), the Esprit project COMIC (dealing with Computer Supported Co-operative Work), and the IST Network of Excellence ARTIST (Advanced RTS).

Record of Hans Hansson's previous research achievements

Research mainly in Computer Science and Computer Engineering, and to a limited extent also in SW Engineering. Topic wise, focus on distributed embedded systems with contributions in data communication, real-time systems, system development, modelling and analysis. Selected contributions include:

- [2002--] Techniques for **component-based design of safety-critical real-time embedded systems**. This work is a natural extension and combination of previous work on real-time systems, modelling and design, taking advantage of recent development in SW Engineering.
- [1995--] **Modelling and analysis of real-time communication**, including timing analysis for various networks (e.g. CAN and ATM), as well as a method for making timing – reliability trade-offs, and techniques for real-time scheduling of network traffic. Best paper award and invited journal publication
- [1998--] **Real-Time Testing and Debugging**, in particular development of a novel patented technique for real-time systems debugging. Commercialisation supported by venture capital is now being accelerated in the spin-off Zealcore.
- [1996-2003] **Execution-time analysis**, including a framework and techniques for static analysis of program code, as well as a technique based on measurements. Initiated world-leading group at UU/MdH.
- [1991-1997] **Development of automotive control SW**, including an execution platform and design method. Basis for the commercial real-time operating system (Rubus) and a design method currently in use at Volvo and others.
- [1988-1995] **Formal modelling of timing and probability**, including probabilistic modal logics, timed-probabilistic process algebra, verification techniques, algorithms and tools (model-checking), as well as several case-studies. Invited book and several well-cited publications. Early and foundational work on probabilistic logics and modelling.