

Curriculum vitae brevis [May 2012]: **Prof. Hans A. Hansson****A. Personal data and contact information**

Name:	Hans Arne Hansson (male)	Born: August 8, 1957, Sundbyberg, Sweden
Civil status:	Married (with Barbara)	Children: Mattias ('84) and Joanna ('89)
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B. 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*. Advisor: 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, US. Thesis title: The implementation of a Micro-Pascal code generator for intel-8086. Advisor: Anders Rundgren

C. Positions

- 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)
- 1988 – 1997 Senior Lecturer in Computer Systems at UU
- 1987 – 1993 Researcher and Scientific Advisor at the Swedish Institute of Computer Science (SICS), Stockholm.

D. Selected Appointments

- 2012 – Scientific Leader, SICS Swedish ICT Västerås AB – a research institute being established in Västerås
- 2008 – 2011 Director of Research at the School of Innovation, Design, and Engineering at MDH
- 1998 – Director of Mälardalen Real-Time Research Centre (MRTC), MDH
- 2006 – 2012 Director of the Strategic Research Centre PROGRESS at MDH
- 2004 – 2011 Director of the national industrial graduate school SAVE-IT hosted by MDH
- 2005 – 2007 Director of Research at the Department of Computer Science and Engineering at MDH
- 1997 – 2004 Program Director for the national research programme ARTES hosted by UU
- 1996 – 1997 Department Chairman at the dept. of Computer Systems at UU (Assistant Chairman 1987 – 1991)

E. Selected commissions of trust

- 2005 – Member (2005-6) and Vice Chair (2011-12) - Swedish Research Council Computer Science Eval. Committee
- 1999 – 2006 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)
- 2007– Associate editor of IEEE Transaction of Industrial Informatics
- 2007–2010 Associate editor of Springer's Real-Time Systems Journal
- 2011 Program Chair – Embedded Software Engineering Track at Euromicro Conf. on SE and Adv. Appl., Finland
- 2002 Program Chair IEEE Workshop on Factory Communication, Västerås, Sweden
- 2000 General Co-chair 7th Int'l Conf. on Real-Time Computing Systems (RTCSA'2000), Korea.
- 1999 Program Chair Euromicro Conference on Real-Time Systems, York, U.K.
- 2002 – Reviewer of the European IST projects NEXT TTA and MEDIA, and IST Integrated Project DECOS.
- 2003, 2007, 2010 Evaluator for national European research programmes in Embedded Systems
- 2007 –, 2009 – Member of the International Advisory Committees for the IEEE Emerging Technologies in Factory Automation (ETFA) and IEEE Symposium on Industrial Embedded Systems (SIES) series of conferences

F. Thesis Supervision (graduated students under main supervision)

Student name	Degree	Thesis title	Year	Current position
Mikael Sjödin	PhD	Predictable High-Speed Communications for Distributed RTS	2000	Full Prof. MDH
Henrik Thane	PhD	Monitoring, Testing and Debugging of Distributed Real-Time Systems	2000	Adjunct Prof. MDH & CTO SafetyIntegrity AB
Andreas Ermedahl	PhD	A Modular Tool Architecture for Worst-Case Execution Time Analysis	2003	Researcher Ericsson (Docent MDH)
Thomas Nolte	PhD	Share-driven Scheduling of Embedded Networks	2006	Full Prof. MDH
Joel Huselius	PhD	Reverse Engineering of Legacy Real-Time Systems: An Automated Approach Based on Execution-Time Recording	2007	Senior SW Engineer at Xdin
Sigrid Eldh	PhD	On Test Design	2011	Adjunct Prof. at Karlstad Univ. & Researcher Ericsson
Mikael Sjödin	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	Independent consultant
Magnus Larsson	Lic.	Applying Config. Mgmt. Techn. to Component-based Systems	2001	Adjunct Prof. MDH & Research Manager 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	-
A. Pettersson	Lic.	Analysis of Execution Behavior for Testing of Multi-Tasking RTS	2003	Consultant at ÅF
Daniel Sundmark	Lic.	Replay Debugging of Embedded RTS using Standard Components	2004	Researcher SICS & Senior Lecturer MDH
Moham. El Shobaki	Lic.	On-Chip Monitoring for Non-Intrusive Hardware/Software Observability	2004	Manager Trittech
Sigrid Eldh	Lic.	On Evaluating Test Techniques in an Industrial Setting	2007	-

+ co-advisor of 8 additional graduated PhDs and 9 Licentiatees

G. Selected leadership and 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 14 professors, 25 additional senior researchers, and 50 PhD-students.
- Responsible for and driving force behind the PROGRESS Strategic Research Centre for Predictable Embedded Software Systems, the only SSF centre in Computer Science; awarded 49 MSEK in funding from SSF for the period 2006-2011.
- Responsible for and driving force behind the ARTES national research programme hosted by UU, with a 95 MSEK support from SSF; 1998—2007.
- Initiator and responsible for the research initiative SYNOPSIS (Safety Analysis for Predictable Software Intensive Systems); awarded 18 MSEK in funding from SSF for the period 2011-2015.
- Initiator and scientific leader of the EU/ARTEMIS JU projects pSafeCer and nSafeCer (Safety Certification of Software-Intensive Systems with Reusable Components), with a budget of M€20 and 32 industrial and academic partners from 6 European countries; 2011—2015.
- Initiator and responsible of the national research initiative SAVE (Component Based Design of Safety Critical Vehicular Systems). With participation from MDH, Uppsala, KTH and Linköping. Supported by SSF with 26.5 MSEK 2002-2007
- Initiator and responsible for the SSF-funded framework project SYNOPSIS (18 MSEK; 2011-2016).
- Initiator and responsible for the SAVE-IT industrial graduate school supported by the KK-foundation with 20.8 MSEK.
- Instrumental in winning the TeknIQ-programme to MDH. 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 (Est.2001; acquired by Enea 2008) and Tau Datorsystem HB. Est.1988.

H. Other merits of relevance

- Main applicant for the Research Council (VR) framework project ARROWS (12 MSEK 2009-2012), given the highest possible mark (“world leading”) and awarded the largest Computer Science framework grant by VR in 2009.
- Member of 4-6 Int’l Programme Committees annually.
- Postdocs hosted: Ken Tindell (1994-1995; PhD U. of York), Peter Altenbernd (1996-1997; PhD U. of Paderborn), Philippos Tsigas (1997-1998; PhD U. of Patras), Sasikumar Punnekkat (1999-2000; PhD U. of York), Insik Shin (2006-2008; PhD from UPenn), Cristina Seceleanu (2006-, PhD from Åbo Ak.), and Patrick Graydon (2012- PhD U of Virginia).

J. Selected record of research achievements

Author/co-author of more than 150 peer-reviewed scientific publications; 26 with more than 30 citations (Google Scholar); citations for top 3 articles: 743, 332, and 306 (details at <http://tinyurl.com/hahpub>). Research in Computer Science, Computer Engineering, and Software Engineering. Focus on distributed embedded systems with contributions in data communication, real-time systems, system development, modelling and analysis, including

- [2002--] Techniques for **component-based design of safety-critical real-time embedded systems**. Natural extension and combination of previous work on real-time systems, modelling and design, taking advantage of recent development in Software Engineering. Nat’l research project SAVE, the strategic research centre PROGRESS, and projects SYNOPSIS and SafeCer focus on exactly this.
- [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**, including development of a novel patented technique for real-time systems debugging and studies of software testing techniques. Publications at leading conferences and commercialisation by the spin-off company 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 software**, 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.