

IEEE Sweden

Vehicular Technology / Communications / Information Theory

Joint (VT/COM/IT) Chapter

Tommy Svensson (S'98–M'03–SM'10), Chair

PhD, Professor, Senior Member IEEE
Chalmers University of Technology, Dept. Signals and Systems
Gothenburg, Sweden
tommy.svensson@chalmers.se

$$C = W \log_2 (1 + \text{SNR})$$



Current IEEE Sweden VT/COM/IT Chapter Board

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- Gabor Fodor (PhD, Ericsson/KTH)
 - Industry activities

Core Activities

- Swedish Communication Technologies Workshop (Swe-CTW)
- Wireless Vehicular Communications workshop
- IEEE Sweden VT-COM-IT Joint Chapter Best Student Journal and Conference Paper Award
- IEEE Distinguished Lecturers Tours (DLTs) and invited distinguished "IEEE Technical Seminars" speakers from academia/industry
- Technical Sponsoring
- Social media
- Award identifications and nominations
- Administrative board meetings, MoMs stored on Chalmers document server

Swedish Communication Technologies Workshop (Swe-CTW)

- Initiated by the IEEE Sweden VT/COM/IT Chapter
 - 2011 Stockholm, 2012 Lund, 2013 Gothenburg, 2014 Västerås (co-located with SNCNW 2014), 2015 Karlstad (co-located with SNCNW 2015), 2016 Mid Sweden University, Sundsvall
 - 2017 Chalmers University of Technology, <http://www.chalmers.se/en/departments/e2/Swedish-Communication-Technologies-Workshop-2017/Pages/default.aspx>, co-located with the IEEE SPS Summer School on 5G
- Focus on networking for young researchers (PhD students and post docs) in Sweden (and the nordic countries)

Format of Swe-CTW

- The workshop feature tutorials, poster presentations of submitted abstracts, and invited talks by the top nominated papers for
 - IEEE Sweden VT-COM-IT Joint Chapter Best Student Journal Paper Award
 - IEEE Sweden VT-COM-IT Joint Chapter Best Student Conference Paper Award

Swedish Communication Technologies Workshop (Swe-CTW) 2017, June 1-2, 2017

- Chalmers University of Technology, Gothenburg,
<http://www.chalmers.se/en/departments/e2/Swedish-Communication-Technologies-Workshop-2017/Pages/default.aspx>
- Co-located with the IEEE SPS Summer School on 5G on their June 1 program,
<http://5g.ellintech.se>
- Keynote “Massive MIMO for many low power links: a challenging road worth traveling”, by Liesbet Van der Perre, Professor, KU Leuven
- Tutorials:
 - “Positioning using mmWave signals ” by Henk Wymeersch
 - “Wireless access for massive Machine-Type Communication ” by Petar Popovski
- Poster session and Joint mingle with Swe-CTW & IEEE SPS Summer School on 5G
- IEEE Sweden VT-COM-IT Joint Chapter Best Student Paper Awards Ceremony
 - 10 invited talks by the first authors of the IEEE Sweden VT/COM/IT Best Conference/Journal Papers
- ~50 participants

Workshop Wireless Vehicular Communications, Nov 2, 2016, Halmstad

- <http://www.hh.se/english/schoolofinformationtechnology/eventsandseminars/wwvc2016.65444248.html>
- Speakers:
 - “Reliable and scalable vehicular networking for cooperative automated driving”, Geert Heijenk, University of Twente
 - “A Simulation Framework for V2V Wireless Systems”, Christian Nelson, Lund University
 - “Frame-Asynchronous Coded Slotted ALOHA for Vehicular Communications”, Fredrik Brännström, Chalmers University of Technology
 - “Platooning Enabled by ETSI ITS-G5 Communications: Fuel Efficiency Analysis”, Alexey Vinel, Halmstad University
 - “C-ITS Deployment in Europe – Current Status and Outlook”, Katrin Sjöberg, Volvo Group Trucks Technology
 - “Handover of Safety-Critical Autonomous Driving Functions: From Theory to Practice”, James Gross, KTH
 - “Grand Cooperative Driving Challenge – Some hints from the winning team”, Víctor Díez Rodríguez, Halmstad University and Segula Technologies
- 30 participants

Workshop on next-generation 5G wireless networks with applications to Mobile and Vehicular Communications,

May 3 2016, Chalmers University of Technology, Gothenburg,

http://www.chalmers.se/en/departments/s2/calendar/Pages/WS-5G-Vehicular-Comm_3May2016.aspx

- Keynote Speaker by Prof. Martin Haenggi (U. Notre Dame, Indiana, USA) “An Introduction to Stochastic Geometry and its Applications in Vehicular Networking”
- Speakers:
 - “Using Stochastic Geometry to Model Packet Reception Probabilities in Vehicular Networks”, Erik Steinmetz, SP Technical Research
 - “On the Performance of Amplifier-Aware Dense Networks: Finite Block-Length Analysis”, Behrooz Makki, Chalmers University of Technology
 - “Coverage Analysis and Blockage Effects in Cellular Networks, Chao Fang, Chalmers University of Technology
 - “Urban Traffic Control for Future Intelligent Transportation Systems”, Henk Wymeersch, Chalmers University of Technology
 - “Moving Networks”, Tommy Svensson, Chalmers University of Technology
 - “V2V Communications Reliability over Urban Intersections”, Mouhamed Abdulla, Chalmers University of Technology
 - “What Role Does Vehicle-to-Vehicle Communication Play for the Automated Vehicle?”, Katrin Sjöberg, Volvo Trucks
- 40 participants

19 IEEE Technical Seminars 2016 (1/2)

- Technical Seminar by Prof. Emilio Leonardi, Politecnico di Torino, Italy.
 - 2016-01-28 “Impact of Clustering on the Performance of Network De-anonymization”, KTH, Stockholm
- Technical Seminar by Prof. Eyan Modiano, Massachusetts Institute of Technology, USA.
 - 2016-02-15 “Optimal Control of Wireless Networks: From Theory to Practice”, KTH, Stockholm
- Technical Seminar by Prof. Lionel C. Briand, University of Luxembourg, Luxembourg.
 - 2016-02-16 “Scalable Software Testing and Verification Through Heuristic Search and Optimization: Experiences and Lessons Learned”, KTH, Stockholm
- Technical Seminar by Prof. Giuliano Antoniol, Polytechnique Montréal, Canada.
 - 2016-04-01 “50 years after the software crisis: what did we learn”, KTH, Stockholm
- Technical Seminar by Prof. Carlo Ghezzi, Politecnico di Milano in Italy.
 - 2016-04-22 “Formal methods and continuous change: towards a happy marriage”, KTH, Stockholm
- Technical Seminar by Prof. Alberto Bemporad, the IMT Institute for Advanced Studies Lucca, Italy
 - 2016-05-24 “Recent advances in embedded model predictive control”, KTH, Stockholm
- IEEE IT Distinguished Speaker Seminar by Prof. Gerhard Kramer, Technical University of Munich.
 - 2016-06-02 “Bounds on the capacity of optical fiber channels”, LiU, Linköping
- Technical Seminar by Prof. Hamid Krim, North Carolina State University, USA.
 - 2016-06-13 “Convexity, Sparsity, Nullity and all that....”, KTH, Stockholm
- IEEE Distinguished Lecture by Prof. Marco Chiani, University of Bologna, Italy.
 - 2016-09-02 “Model order selection for ranging, source enumeration and spectrum sensing”, Chalmers University of Technology, Gothenburg

19 IEEE Technical Seminars 2016 (2/2)

- IEEE VTS Distinguished Lecture by Prof. Ekram Hossain from University of Manitoba, Winnipeg, Canada.
 - 2016-09-12 “On coalition based cooperative packet delivery in vehicular delay-tolerant networks under uncertainty”, Chalmers University of Technology, Gothenburg
- Technical Seminar by Prof. Yoram Bresler, University of Illinois at Urbana-Champaign, USA.
 - 2016-09-13 “Learning Sparsifying Transforms for Signal, Image, and Video Processing”, KTH, Stockholm
- Technical Seminars in a mini-workshop on 5G at Chalmers University of Technology, Gothenburg:
 - 2016-09-15 “Nokia’s view on 5G mobile communications, and specific 5G challenges addressed in Nokia Bell Labs Wroclaw”, by Dr. Patrick Marsch, Nokia Bell Labs Wroclaw
 - 2016-09-15 “Challenges in Data-Center Technologies for Distributed Radio Signal Processing”, by Prof. Raymond Knopp, Eurecom
 - 2016-09-15 “5G - Is the “Killer Application” back?”, by Prof. Jens Zander, KTH
- ITS Distinguished Lecture by Prof. Henry D. Pfister from Duke University, USA.
 - 2016-09-16, “Graphical Models and Inference: Insights from Spatial Coupling”, LTH, Lund
- Technical Seminar by Dr. Benoit Baudry from INRIA, France.
 - 2016-10-28 “Running software in uncertain environments: how diversification and approximation can enhance robustness”, KTH, Stockholm
- Webinar by Northstream
 - 2016-11-08 “Telecom trends and the road to 5G”,
- Technical Seminar by Prof. Claire Tomlin University of California, Berkeley, USA.
 - 2016-11-18 “Safe Learning”, KTH, Stockholm
- Technical Seminar by Prof. Wei Yu, University of Toronto, Canada.
 - 2016-11-23 “Cloud Radio Access Networks: Capacity, Optimization, and Duality”, KTH, Stockholm

Award promotions and nominations

- Distributed call for Young Researcher Award in Region 8.
- Initiated and handed out in conjunction with SweCTW'2013, SweCTW'2014, SweCTW'2015, SweCTW'2016, SweCTW'2017 <http://sites.ieee.org/sweden-vtcomit/best-student-paper-award/>
 - IEEE Sweden VT-COM-IT Joint Chapter Best Student Journal Paper Award
 - IEEE Sweden VT-COM-IT Joint Chapter Best Student Conference Paper Award
- All awards winners are now presented at our web site

Dissemination

- Article in IT Newsletter Sep 2017, online:
<http://www.itsoc.org/publications/newsletters/september-2017-issue/view>
- Article in VTS Newsletter May 2016, online:
<http://newsmanager.commpartners.com/ieeevt/issues/2016-05-29/1.html>.
- Article in Oct 2015 issue of Comsoc Global Communications Newsletter, online:
http://www.comsoc.org/files/Publications/Magazines/gcn/pdf/GCN_2015_10.pdf.
- Michael Mentmaier presented our chapter activities for IT Society during the ISIT June 25-30, 2017.
- Tommy Svensson took part in the IEEE Sweden Section Chapter Chairs meeting in Stockholm, Oct 6, 2016 and presented the IEEE VT/COM/IT Chapter activities.
- Reporting to Comsoc on activities via Comsoc Questionnaire Spring 2017.
- Annual report for 2016 presented during AGM, April 20, 2017.
- Brief contribution related to ITS award to IEEE Sweden Newsletter Sep 2017.

Sponsoring of Conferences/Workshops

- RNDM 2016 - 8th International Workshop on Resilient Networks Design and Modeling, Halmstad, Sep 13-15, 2016
- Topical workshop on Micro-structured Optical Fibers, Ericsson AB, Kista, Sep 15, 2016
- IEEE International Workshop on Computer-Aided Modeling Analysis and Design of Communication Links and Networks (CAMAD) 2017, Lund June 19-21, 2017
- COST ACROSS summer school on Cloud Computing and Networking, Kalrstad, June 26-30, 2017
- 8th Nordic Workshop on System and Network Optimization for Wireless (SNOW'2017, Riksgränsen, May 2-4, 2017

Online Media

- IEEE Sweden Section
<http://sites.ieee.org/sweden/vtcomit-vehicular-technologycommunicationsinformation-technology/>
- & (http://www.ieee.se/chapterindex.php?code=vt_com_it)
- New web site hosted by IEEE:
<http://sites.ieee.org/sweden-vtcomit/>
- LinkedIn group: <http://www.linkedin.com/groups/IEEE-Sweden-VT-COM-IT-5070706>
- Facebook page:
<https://www.facebook.com/ieeeSwedenVtcomit>

Received 9 Awards

- IEEE Information Theory Society Chapter of the Year Award 2017, 2013
- IEEE Vehicular Technology Society Chapter of the Year Award 2016
- IEEE Region 8 Chapter of the Year Award 2015 (Large chapter category).
- IEEE Comsoc Chapter Achievement Award 2015, 2013, 2012, 2011 (four Chapters receive this award in the world per year),
 - <http://www.comsoc.org/blog/introducing-winner-2015-chapter-achievement-award-sweden-chapter>
- IEEE COMSOC special recognition "For long-time achievements in chapter activities and ongoing excellence serving its members", 2013

Members

AGM 2017:

360 unique VT/COM/IT members, 522 memberships (VT:102, COM:346, IT:74).

AGM 2016:

419 unique VT/COM/IT members, 587 memberships (VT:104, COM:403, IT: 80).

AGM 2015:

536 unique VT/COM/IT members, 723 memberships (VT:121, COM:517, IT: 85).

AGM 2014:

599 unique VT/COM/IT members, 797 memberships (VT:117, COM:583, IT: 97).

AGM 2013:

491 unique VT/COM/IT members, 675 memberships (VT:111, COM:474, IT: 90).

AGM 2012:

630 unique VT/COM/IT members, 848 memberships (VT:127, COM:616, IT: 105).

AGM 2011:

506 unique VT/COM members, 611 memberships (VT: 115, COM: 496).

- *Comment 1: There is a drop in members.*
- *Comment 2: There seems to be less members when the AGM is held in the spring (compared to the autumn)*

Ambitions for the Coming Years (1/2)

- Consolidate and evolve our core activities towards our members
 - SweCTW \leftrightarrow Swedish National Computer Networking Workshop (SNCNW)
 - Regain interest in the workshop
 - Involve VINNOVA
 - Wireless Vehicular Communications Workshop
 - Distinguished lectures and mini-workshops from academia
 - IEEE Sweden VT-COM-IT Joint Chapter Best Student Journal/Conference Paper Award
 - Will be split to four awards for 2016: PHY/MAC (conf., journal) and Networking (conf., journal)
 - Evolve Distinguished industry lecture program
 - Evolve our on-line media (awards page parts done, permanent workshops web pages remain)
- Catalyze higher layer convergence in communications
 - SweCTW - Swedish National Computer Networking Workshop (SNCNW)
- Report our work in the IEEE Global Communications Newsletter
 - Done in Oct 2015

Ambitions for the Coming Years (2/2)

- **Seek to organize (ISIT, ITW, ICC, VTC, ...) if we can find a General chair**
 - VT/COM/IT Board is positive
 - Göteborg & Co is actively promoting a top conference in the VT/COM/IT area to be organized in Gothenburg
 - What can IEEE Sweden help with?
- **General Data Protection Regulation (GDPR)???**
- **Joint IEEE Sweden/Cross-chapter/Student chapter activities**
 - Continue the work with IEEE Sweden section to improve economy handling – account restoration almost done
 - Contribute to IEEE Sweden Newsletter
 - Involve north of Sweden (Luleå)
 - Senior elevations
 - **Increase interest in Engineering in Sweden, address the grand societal challenges**