

Members' Newsletter Nr 4 - 2016

This newsletter aims at sharing information with the IEEE Sweden Section Members. The Newsletter is subject to continuous improvements. Hence we kindly ask for contributions, feedback and involvement from our readers. Please submit to Rune Persson rune.persson@computer.org or Sweden Section Chair Mats Edvinsson, mje@ieee.org



Editorial

Year 2016 is nearing its end, with a number of IEEE activities and events in Sweden. The Chapters and Branches of the IEEE Sweden Section have arranged about 70 meetings and arrangements, mostly in the technical-scientific area. We have summarized some selected events and initiatives.

Please observe some important items in this Newsletter – events in the near future, important dates, important positions, and inputs from you as a member.

A message from the Sweden Section Chair

Dear IEEE member!

2016 has been a very exciting year for IEEE Sweden. Also in this issue, Sweden has received a prestigious IEEE award, elevated more Senior Members, and now got the first IEEE Milestone!

We continue to increase industry relevant events, (re-)vitalizing IEEE entities, and improve the Section (e.g. modernize the website). Please find related articles in this issue

Please note, tight deadline: **IEEE/ICES Workshop on Safety and Security for Autonomous Systems**

- **27 Jan 2017** at 09:00 – 12:00, via **WebEx** or **physically at KTH**, main campus
- Speakers from Ericsson, Volvo Cars, Saab Kockums and KTH. Topics include: Relations between safety, security and privacy goals in our connected society; Managing safety and security in the context of autonomous construction equipment machines; Safety aspects of unmanned maritime system operations; Securing large-scale cyber physical systems; and Bringing reliability and security together: challenges and opportunities
- Please register for physical or WebEx participation by using the following link:
<http://www.ices.kth.se/events.aspx?pid=3&evtKeyId=d6a2bc5d3b7449b99c940a1e89f2515d>

Please mark **15 March 2017** in your calendar – the **IEEE Sweden Section AGM**, Annual General Meeting. Like recent years, we intent to broadcast the lecture by the key note speaker via IEEE WebEx, available for everyone. The Section, Chapters and Affinity Groups are now preparing to close 2016. AGM documents will be available on the website ahead of the AGM.

The new Section Board for 2017, to be approved at the AGM, has been nominated by the Nomination Committee. However, we would like each of you to either nominate yourself or someone you know to the remaining 2 positions in the Board.

IEEE Region 8 will be very present in Sweden in 2017: The Region 8 Director 2017-2018 will be Margaretha Ericsson, Sweden. The next Region 8 meeting will be in Stockholm in March 2017.

Last but not least; **SEASONS GREETINGS !**

Mats Edvinsson, Chair IEEE Sweden Section

IEEE Sweden first Historical Milestone – the Gotland HVDC Link

On Nov 2016, the **IEEE Board of Directors** approved the IEEE History Committee's recommendation, that proposal be approved as an IEEE Milestone in Electrical Engineering and Computing with the following citation:

Gotland High Voltage Direct Current Link, 1954

The Gotland HVDC Link was the world's first commercial HVDC transmission link using the first submarine HVDC cable. It connected mainland Sweden to Gotland Island. The 96 km cable used mass-impregnated technology. The Swedish manufacturer ASEA produced the link for Vattenfall, the state-owned utility. The project used mercury-arc rectifiers for the 20 MW/100 kV HVDC converters, developed by an ASEA-Vattenfall team led by Dr. Uno Lamm.

Instrumental in this process have been ABB and Vattenfall, from IEEE Prof Olof Samuelsson Lund Institute of Technology, PE/PEL chair Prof Lina Bertling Tjernberg, and Sweden Section Chair Mats Edvinsson.

At the moment efforts are ongoing on the arrangements of the dedication ceremony in 2017.

Nasim Farahini – the MGA Achievement Award 2016

IEEE Sweden WIE Chairperson and Student Branch Co-ordinator **Nasim Farahini** has been selected as the Recipient of the very prestigious MGA Achievement Award 2016:

For her outstanding contributions in promoting student activities, and for establishing and reinforcing the network of women engineers in the IEEE Sweden Section.

The award includes a plaque with the above citation and an award cheque of US\$250. Nasim's contributions to the Sweden Section include activities related to students branches, Young Professional and specially WIE. She has been instrumental in getting student branches re-vitalized and keeping the WIE activities going on for years.

The award page on the IEEE portal reads as: *This award is to recognize individuals, or a team, involved with Member and Geographic Activities (MGA) and its organizational units for singular achievement in the development and completion of a project(s), or activity(ies), directed to the fulfilment of one or more of the MGA goals. This award is designed to recognize those substantive projects or achievements of a relatively short nature (one to three years), but that have left an undeniable imprint on the fabric of regional operations.*

The accomplishments of the candidate should be of "significant performance" and should have made a distinguishing contribution to IEEE. The focus should be on volunteering for IEEE, MGA, or its organizational units, not on professional achievement. More about the award can be read at: https://www.ieee.org/societies_communities/geo_activities/awards/achievement.html

We wish Nasim a very good luck in all her future endeavours!

Samarth Deo, Sweden Section Secretary

Industry webinars on 5G organized by IEEE Sweden Section

We organized two very hot topic workshops on 5G in November and December respectively, exclusively for IEEE Sweden members.

Telecom trends and the road to 5G – an exclusive IEEE webinar on 8 Nov with Northstream, technically sponsored by the IEEE Sweden joint VT/COM/IT Chapter

Bengt Nordström, CEO of Northstream, a leading consultancy company in the Telecom Market, described the latest telecom trends, who is driving the 5G investment today, opportunities in the 5G era and possible threats to the success of 5G. E.g. players like Ericsson and Nokia face tough times and are struggling with continued aggressive price competition in a stagnating market. Meanwhile, consolidation in Europe temporarily stalls which forces operators to look for other ways of dealing with continued margin pressure. At the same time, operators and equipment vendors worldwide are in a race to be the first to launch 5G. Big hopes are tied to 5G to deliver growth and new usage areas, but for this to happen, operators and vendors must bear in mind several crucial considerations and differences from previous introductions of new technologies.

5G networks – Service Management for Diverse Enterprise Sectors – an exclusive IEEE webinar on 6 Dec.

Rafia Inam, at Ericsson, is an experienced researcher with an award winning paper 2015, discussed the challenges of the next generation mobile networks management and a paradigm shift in mobile network implementation. The concept of “network slicing” as a mean of managing complexity and timely delivery of services to diverse enterprise sectors. Initial results from Ericsson’s testbed network implemented at Kista Stockholm Sweden, that demonstrate the maintained QoS requirements for diverse requirements. 5G network operators will face the challenges of managing network services for diverse enterprise sectors such as automotive, mining and utility with different requirements throughout their lifecycle.

Viacheslav Izosimov, Sweden Section Board

PE/PEL seminar on power converters for particle accelerators – ESS examples

On **7 Nov 2016 at LTH in Lund**, a cutting-edge lecture related to the ESS project was presented by our IEEE member Carlos A. Martins: "Applications and topologies of power electronic systems for large particle accelerators - the example of ESS". He is the Power Converters section leader at European Spallation Source ERIC, and Professor at Industrial Engineering and Automation Department, LTH.

The event was a prelude to the Senior elevation meeting in Lund, see separate article.

The European Spallation Source (ESS) is a multi-disciplinary research facility in the field of materials science currently under construction in Lund.

The spallation process will require the construction of the world most powerful Linear proton Accelerator (Linac), which will accelerate a beam of protons for a time duration of 2.86ms (beam pulse length). A beam pulse repetition rate of 14 pulses per second is required. Each beam pulse will achieve acceleration energies up to 2 GeV once projected against a rotating tungsten target, representing an average beam power of 5 MW.

He started with the fundamentals of particle acceleration and the role of electrical engineering. The force acting into a charged particle is given by the Lorentz equation; The basic principle of force generation leading to particle acceleration relies in adequate electrical and magnetic fields, with both quantities being intrinsically linked to the electrical and electronics engineering disciplines.



In order to save costs, improve performance and reduce the footprint of the RF Gallery, ESS has decided to launch an internal R&D project in collaboration with LTH.

Please find a summary article of the lecture on www.ieee.se

IEEE Chalmers Student Branch Revived

As some of you know, the key initiator of the IEEE Sweden Section and the first Chair was the IEEE Fellow Torkel Wallmark (1919 – 2007), Professor in solid state physical electronics at Chalmers University of Technology in Gothenburg. The first Student Branch in Sweden was at Chalmers in 1966.

(For more details, please download and read the document “IEEE R8 Sweden 50 yr summary - 2015 Dec 31.pdf” at www.ieee.se, Tab “Document Archive”)

After laying dormant for several years, a new group of students have taken initiative into revitalizing the Chalmers SB. The new era of student branch activity was kick-started with a revitalization event on Nov 1, initiated by Andreas Nylander and Josef Hansson at Chalmers. The aim was to show the benefit of membership and activity in IEEE for master and Ph.D. student across Chalmers. The event had two speakers, out of which the first was IEEE Sweden Chair Mats Edvinsson with a presentation about the history, goal and activities of the IEEE organization. After that, a second speaker in the form of NEVS Lead Engineer of Active Safety Software & Controls, Mustafa Ali Arat, who talked about the work at NEVS on Advanced Drivers Assistance Systems, and the future towards automated vehicles.

The event was well appreciated among students, and successful in raising interest in the Chalmers SB. Moving forward, there is now a strong base for further events, which are currently planned at a rate of four events per year in an initial stage.

The IEEE Smart Village (ISV) Project Lecture

Professor Christian Bohm, Stockholm University, Life Senior Member IEEE

The lecture, which had the subtitle “**Power a Village – empower a community**” was given by Raymond Larsen an IEEE life fellow who was one of the cofounders of the IEEE Smart Village project. The lecture was organized by the Social Implications of Technology Chapter, IEEE Sweden Section and occurred on November 9th in a lecture hall at the AlbaNova University Center. Unfortunately, this was the very day when public communications were completely stopped by an unexpected early heavy snowfall (the worst since 1925 according to records). In spite of this, a small and enthusiastic group managed to overcome the obstacles and came to listen to the talk. We do know that there were people who really tried to get there but failed. The talk was very interesting and continued for two hours. There were many questions afterwards.



For those of you who did not manage to come, we will give a short introduction using mostly his own words. More information can be found on the ISV website. <http://ieee-smart-village.org>

Let us first state that ISV is organized under the IEEE Foundation and was initially financed by IEEE Foundation and Technical Society funds but was meant to grow by attracting donations via fundraising campaigns, which is indeed what is happening.

Energy, Education, Empowerment

Are the key words for ISV which arose from the IEEE Humanitarian Technology Challenge of 2008-2010, which began with a premise that IEEE volunteers could invent new technologies and products to help solve world poverty.

The Smart Village sub-group, who were concerned about large-scale deployment, concentrated on designing systems to demonstrate sustainable business models through knowledgeable local partners. Its methods: Promote community involvement, entrepreneurship, ownership, reinvestment

Energy Solutions

Portable energy sources were developed for deployments in poor rural areas in developing nations. The SunBlazer I was designed as a first pilot for rural Haiti in the years 2010-12. It was a mobile 1.5kW solar power station equipped with 40-80 portable home battery packs and accompanying light kits. The users were charged a reasonable fee for bringing electricity to their homes. The income was used to pay operators and to fund new stations. During 2011-12 the SunBlazer was deployed to 15 villages and demonstrated the activity as a sustainable business model. New versions of SunBlazers, light kits and much larger solutions followed from partner innovations in Africa and Haiti.

The 2nd Major Product is Education

The goal is to invent a successful product, delivery system *and* successful business model for education built on Internet interconnectivity. An early major progress was the 2015 pilot IEEE Global Classroom Masters of Development Practice degree program. A Test Bed for interconnectivity to rural areas was designed and is being tested in Colorado. A first pilot for this is planned for use in grade schools in Papua New Guinea funded by IEEE Nuclear and Plasma Sciences Society in 2016-17

Help Empower Communities

People in very poor areas lack: *Critical resources* (education, money, credit) and *Opportunity* (marketable products, market access, refrigeration, transportation, *world class affordable education in villages*). Economic progress is strongly correlated to electricity access. Small amounts of power by developed country standards make a huge difference.

BUT – power alone is not enough to eliminate poverty; many who have electricity remain very poor!

The Reality is...

ISV or any other single entity cannot itself empower communities let alone whole nations of poor people. It can only come alongside to help provide the means of both technology and education to the people themselves. Villages alone have the latent capacity to empowerment and must learn to use it. ISV can be a “Change Agent” like yeast in the bread of community-building.

Empowerment Metrics

People who invest in ISV want to see measurable results:

1. Paying jobs in electricity: Construction, installation, generation, distribution, maintenance, management, sales and that money stays in communities, spent on local goods and services. *But closed loop market won't grow*
2. Income of electricity users will grow, *if successfully coupled to education and new profitable entrepreneurial businesses.*

Learning Beyond the “Lightbulb”

Community owned electricity micro-utilities will attract commercial businesses. They can become steady customers *for much more electricity* than home lighting, the smallest of all loads (and most expensive per kWh) and become larger load customers adding income, stability. Larger customers include shops, gas stations, clinics, schools, irrigation, clean water, adult learning centers...

Without empowerment, western consumer model industries will continue to create dependence, not empowerment

In the presentation Raymond Larsen continued to discuss ISV strategies and projects in six countries in Africa, several states of India, PNG and a growing list of other locations.

Rune Persson, Membership Officer

IEEE Section Board 2017 – as nominated

The Nominating Committee, elected by the 2016 AGM and consisting of Alberto Lorente Leal (chairman), Babak Tagavi (member), and Igor Gazdík (member), submits the following report to the 2017 AGM, along with a nomination of Section Board members to be elected for the year 2017.

Name	Primary position
Mats Edvinsson	Chair
Samarth Deo	Executive vice-chair
Yuxiang Zhu	Secretary
Christofer Silfvenius	Treasurer
Luis Martinez	IT-systems development
P. Rune H. Persson	Membership development
Viacheslav Izosimov	Industrial relations
Vacant	Member
Vacant	Member

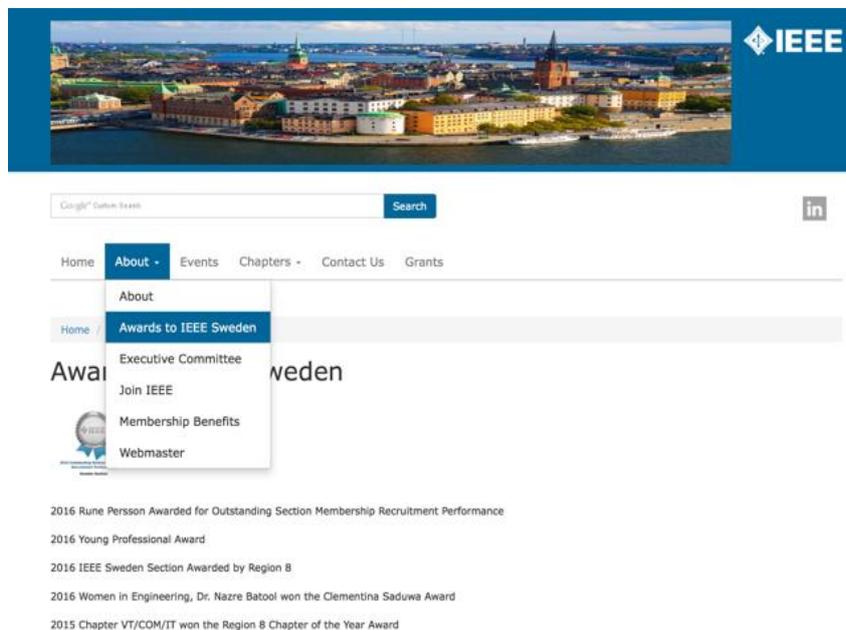
Alberto Lorente Leal, Chair Nominating Committee, a.lorenteal@gmail.com

IEEE Sweden Section – moving to a New Web Design

IEEE Sweden is updating the web-platform and at the same time moving to a new web address.

The new web page is currently in a development stage.

The New site's main feature is that each Chapter, Branch and Affinity Group now has its own webmaster, thus enabling Chapter and Affinity Groups to enter news and update information on their own, without assistance from the Section webmaster, or of another external webmaster.



At the moment, we are investigating how Chapters can share the calendar and use the entered future events from each Chapter and Section in order to create a common list of IEEE activities in Sweden. These webmaster will also to be able to upload documents related to specific events, like the Section Annual General Meeting.

Input on content, structure or other ideas are welcome, please email your comments to christofer.silfvenius.se@ieee.org.

Current webmasters for the new website are listed below:

Mikael Bergqvist (SIT)
Nan Chen (PE/PEL)
Mathias Grudén (VT/COM/IT)
Luis Guillermo Martinez Ballesteros (Section)
Ted Johansson (SSC/CAS)
Christer Karlsson (EMC)
Ravi Chandra Maheswaram (SIT)
Gunnar Malm (ED)

Andreas Nylander (CPMT)
Göran Salerud (EMB)
Kristian Sandahl (C)
Christofer Silfvenius (Section)
Philippe Tassin (P)
Carl Mikael Zetterling (ED)
Petter Ögren (RAS)

Christofer Silfvenius, Section Treasurer

Congratulations to our 26 new IEEE Senior Grade Members !

The Section started an IEEE Senior Elevation campaign at the end of 2015. During 2016 we have arranged successful elevation meetings in Stockholm, Linköping and Lund. We intend to continue the process in 2017, to arrange Senior elevation meetings in Göteborg (Chalmers), Uppsala, Västerås and in the Northern parts of Sweden.

More info on http://www.ieee.org/membership_services/membership/grade_elevation.html

During July to December 2016, the following members have been elevated to Senior Grade members. Congratulations!

Rune Persson, Membership Officer

Shi Cheng, Stockholm
Robert Forchheimer, Linköping
James Gross, Stockholm
Krister Holmgren, Åkersberga
Tommy Öberg, Knivsta
Sabri Pilana, Växjö
Adrian Popescu, Karlskrona
Sören Poulsen, Ljungby
Arne Alping, Göteborg
Vangelis Angelakis, Norrköping
Christian Antfolk, Lund
David Broman, Stockholm
Michael Felsberg, Linköping

Thomas Lennart, Tygelsjö
Antonios Miranopoulos, Västerås
Lars Mollberg, Göteborg
Saad Mubeen, Västerås
Arne Norlander, Stockholm
Ighodalo Omhonria, Stockholm
Roland Örtengren, Göteborg
Christoforo Pompermaier, Helsingborg
Olof Samuelsson, Lund
Biswajit Sing, Ludvika
Jie Sun, Göteborg
Thomas Swahn, Göteborg
Johan Wernehag, Lund



From the IEEE Senior Grade elevation meeting at LTH in Lund and at Linköping University

IEEE membership benefits; e g Life Membership when retired at a low fee

Many members have left us in connection with their retirement. Please, observe that you will have massive reduction of the membership fees if you qualify for the Life Membership. This occurs when the sum of your age and the number of active IEEE membership years is equal to 100 or more.

In some industries that are keys for our membership, like Ericsson, Sony and Bombardier, there have been massive layoffs. Please, remember that the IEEE and IEEE Society memberships can be of great importance if you must change employer or become unemployed. IEEE membership greatly enhances competitive performance through further studies and further education possibilities through technical webinars, workshops, conferences and meetings. Besides, the IEEE community expands your professional network. In many cases an IEEE membership entails a rebate when buying technical and scientific literature.

Rune Persson, Membership Officer

IEEE Region 8

IEEE Region 8 leadership, as of 2017

The Operational Committee of IEEE Region 8, as of 2017, will be chaired for the first time of a woman, and for the third time by an IEEE Sweden member:

- Director **Margaretha Eriksson**
- Director-Elect **Magdalena Salazar Palma**
- Past-Director **Costas Stasopoulos**
- Secretary **Jan Verveckken**
- Treasurer **Ralph Kennel**
- Vice Chair Member Activities **Antonio Luque**
- Vice Chair Technical Activities **Christopher James**
- Vice Chair Student Activities **Efthymia Arvaniti**

The 108th IEEE Region 8 Committee Meeting will be held in Stockholm on 25-26 of March 2017.

Mats Edvinsson
Chair IEEE Sweden Section

Margaretha Ericsson
IEEE R8 Director-Elect 2015-2016, Director 2017-18

European Public Policy Initiative (EPPI)

The aim of EPPI is to have a technical voice in the European union. Need some funding from the EU countries; slight increase in fees by members. The intention is that IEEE shows its best side of advancing technology for humanity.

Below some questions raised and related answers

What are the benefits to European IEEE members?

This gives European members the opportunity to help shape public policy in Europe for the benefit of the profession and humanity through contributing to policy recommendations, consultations, & events provide critical information on technology considerations to the policy community. The opportunity to participate in peer-selected, volunteer Working Groups resulted in some 200 applications both times that open calls for interest were conducted. These are ways to deepen knowledge of public policy issues affecting our profession, our employers, and our families and to engage with a community of European IEEE members interested in public policy.

Future opportunities under development are to opt-in to review and comment on WG draft

recommendations and to receive Brussels policy updates.

What are the accomplishments of the EPPI WGs?

There are two active WGs – on Energy and ICT – and they hold monthly teleconferences; 2-3 inperson meeting per year. Some highlights include:

- 2016 policy roadmaps developed
- 6 Policy Statements have been reviewed by the Global Public Policy Committee
2 approved; Network Neutrality, Smart Cities. 4 have received feedback, and are undergoing comment resolution [final step] Additional papers at earlier stages of drafting
- Submitted response to the “Public consultation on the public-private partnership on cybersecurity and possible accompanying measures” to the European Commission on 11 March 2016
- Furnished speakers for IEEE Smart Grids for Smart Cities conference in Paris in Q4
- Engaged with policy makers at WG meetings, incl Megan Richards, principle advisor to DG CONNECT; Marietje Schaake, NL, ALDE; Julia Reda, DE, GREENS/EFA; Afonso Ferreira, Policy officer, DG CONNECT;
- Secured policy speakers for IEEE EnergyCon, incl Keynote opening panel: Mark van Stiphout, Dpty. Head of Unit, DG Energy, European Commission; Closing keynote – Jos Delbeke, Director General for Climate Action, DG CLIMA, European Commission
- Held panel session on EU Energy Policy at 2016 IEEE PES General Meeting, with up to 50 attendees from different regions during busy schedule
- Held a student workshop on innovation and ICT policy topics at Oxford University with President Shoop, co-located with a WG meeting

Why is a member assessment essential?

What is good policy in Europe is not necessarily good policy in other parts of the world. Financial support by European members assures European WG volunteers that they can develop policy recommendations appropriate for Europe, without outside influence. Additionally, it assures EU officials that the advice they receive has been developed by European technologists, without outside influence.

The IEEE Sweden Section Board position

The Sweden Section Board meeting 7 Dec 2016 voted unanimously in favour of the following statement: Support for the following two actions:

1. The formation of a new IEEE Organizational Unit, tentatively called “IEEE Europe,” to address public policy matters on behalf of IEEE members residing in EU/EFTA countries. This Organizational Unit will include Working Groups that will develop public policy-related documents. Volunteers of this Organizational Unit will be selected from IEEE members in EU/EFTA countries by an independent nominations and selection process.
2. The collection of an annual assessment in the amount of US\$5.00 from each Higher Grade Member residing in EU/EFTA countries, beginning with the 2018 membership year. This assessment will be used to partially fund the activities of this Organizational Unit and assure independence in the creation and delivery of Public Policy Position Statements.

Please feel free to contact us if you are interested in a particular topic, more information etc.

Mats Edvinsson
Chair IEEE Sweden Section

Margaretha Ericsson
IEEE R8 Director-Elect 2015-2016, Director 2017-18