

25th IEEE Real Time Conference - La Biodola, Elba, Italy

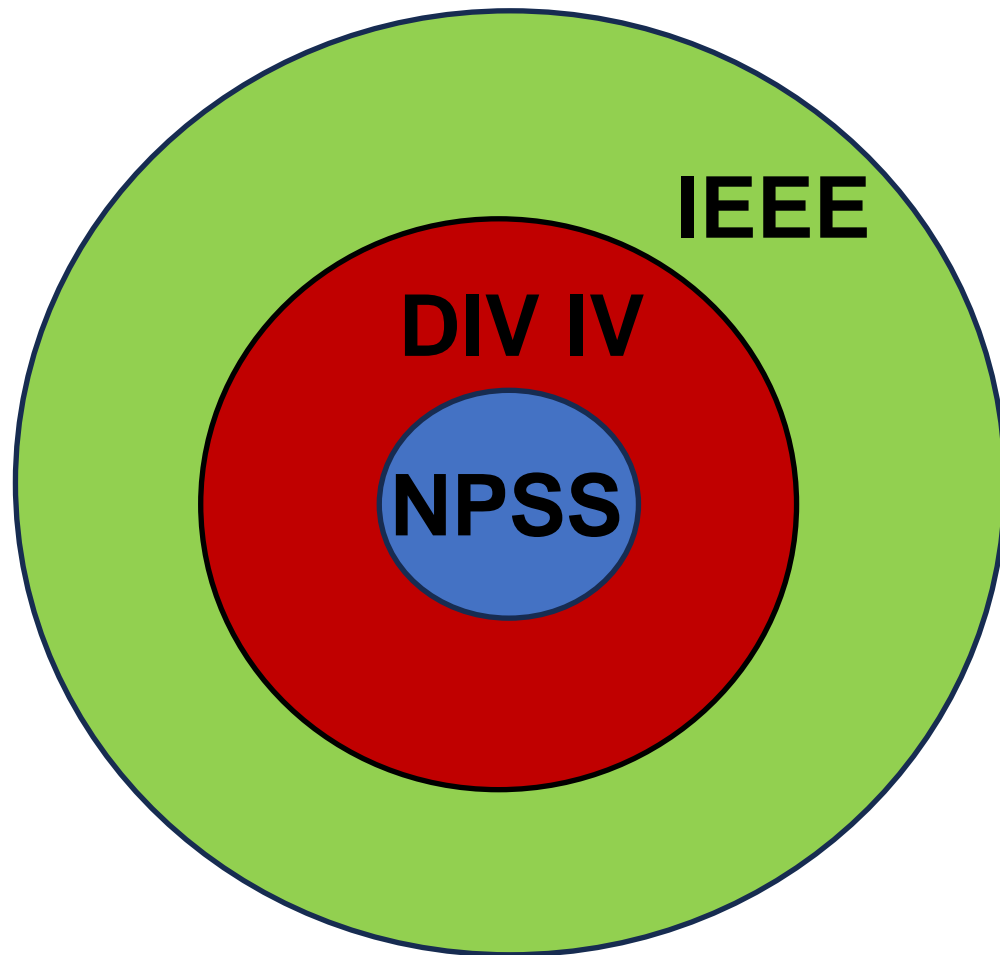


Welcome

Vesna Sossi, PhD

*IEEE Fellow
NPSS Past President,
Div IV Director-Elect*

NPSS - Division IV - IEEE

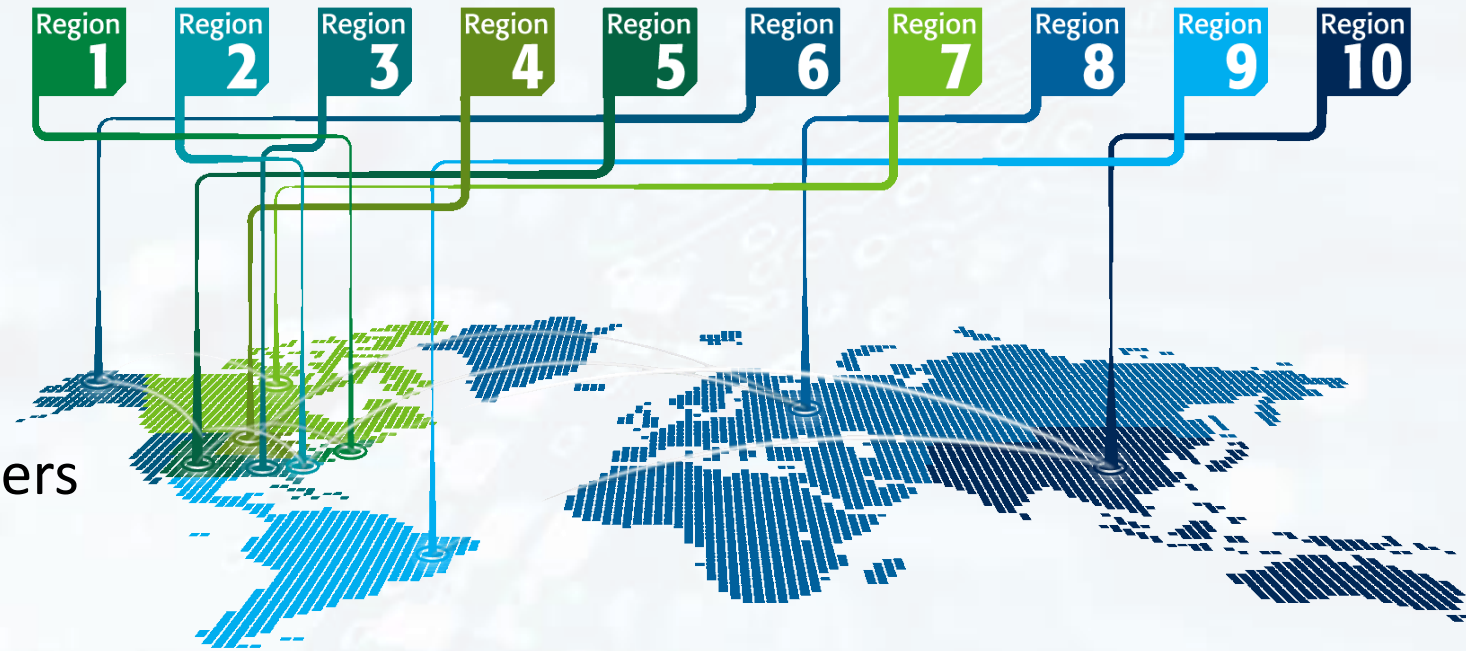


Why should I be an IEEE NPSS member?

IEEE at a Glance

IEEE has...

- ▶ Over **500,000** members in more than **190** countries, more than 67 percent of whom are from outside the United States
- ▶ More than **189,000** Student members
- ▶ **347** Sections in **ten** geographic Regions worldwide
- ▶ **2,815** Chapters that unite local members with similar technical interests
- ▶ **3,613** Student Branches at colleges and universities in over **100** countries
- ▶ **4,240** Student Branch Chapters of IEEE technical Societies
- ▶ **670** affinity groups and growing



All figures stated above are current as of 12/31/2024.



6 IEEE Strategic Goals (2025-2030)



Advance science and technology as a leading trusted source of information for research, development, standards, and public policy

ADVANCING SCIENCE



Inspire intellectual curiosity and support discovery and invention to engage the next generation of technology innovators

FOSTER THE NEXT GENERATION



Drive technological innovation while promoting scientific integrity and the ethical development and use of technology

DRIVING ETHICAL INNOVATION



Expand public awareness of the significant role that engineering, science, and technology play across the globe

PUBLIC OUTREACH



Provide opportunities for technology-related interdisciplinary collaboration, research, and knowledge sharing across industry, academia, and government

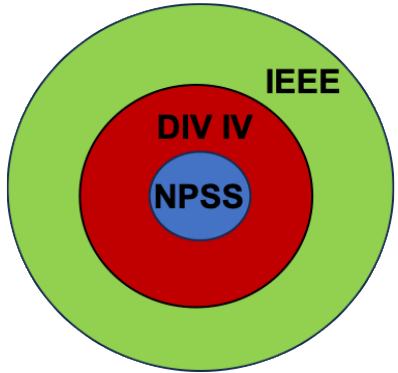
INTERDISCIPLINARY COLLABORATIONS AND IMPACT



Empower technology professionals in their careers through ongoing education, mentoring, networking, and lifelong engagement

EMPOWER PROFESSIONALS

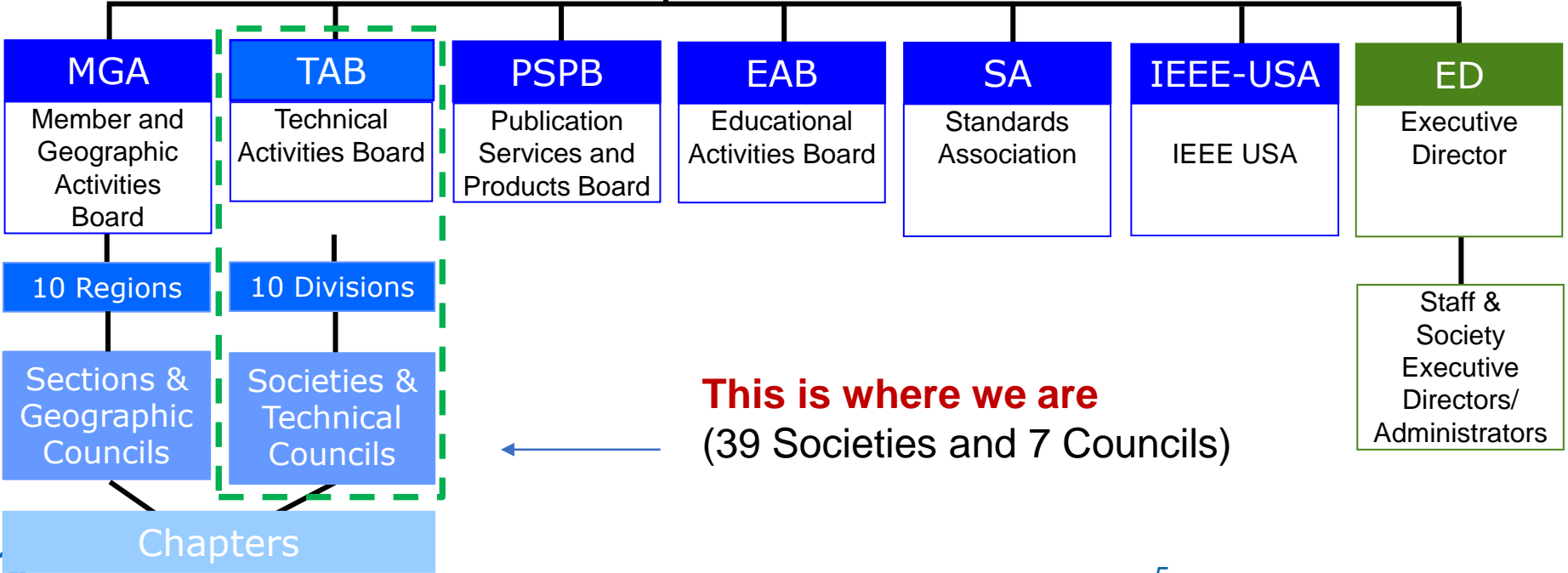
IEEE Organization



MEMBERS

Board of Directors (BoD)

Assembly



Divisions

I

II

III

IV

V&VIII

VI

VII

IX

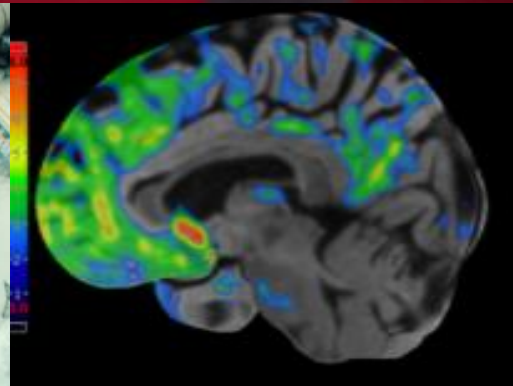
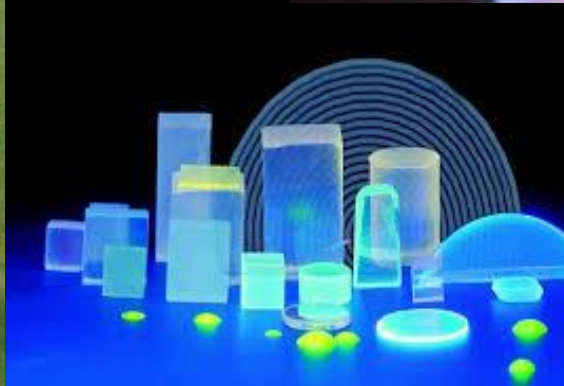
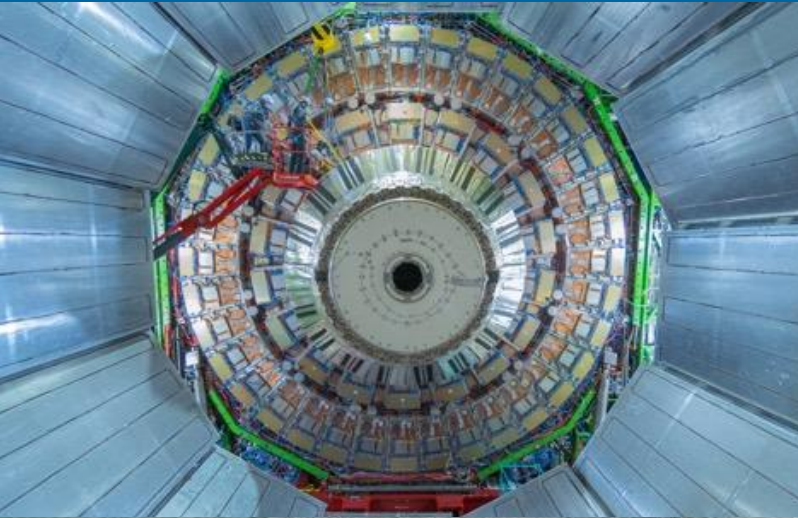
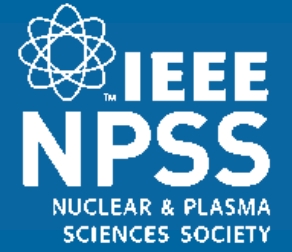
X

The image displays a grid of IEEE society logos, organized into columns labeled I through X. The logos are as follows:

- Column I:** CAS, CEDA, ELECTRON TYPING SOCIETY, IEEE NANO, SSGS
- Column II:** DEIS, IEEE ELECTRONICS PACKAGING SOCIETY, IAS, IEEE INSTRUMENTATION & MEASUREMENT SOCIETY, pels, UFFC
- Column III:** IEEE ComSoc
- Column IV (highlighted with a red border):** IEEE AP-S (Antennas and Propagation Society), BTS, IEEE CTSoc, IEEE RFID, IEEE CSC, EMC SOCIETY, IEEE MAGNETICS, IEEE NPSS
- Column V&VIII:** IEEE computer society
- Column VI:** IEEE Education Society, IES, PSES, IEEE PRO COMM, IEEE Reliability Society, SSIT, IEEE TEMS
- Column VII:** IEEE PES (Power & Energy Society)
- Column IX:** AESS, GRSS, it, ITSS, OES, IEEE Signal Processing Society, VTS
- Column X:** IEEE Biometrics Council, IEEE Computational Intelligence Society, IEEE Control Systems Society, EMB, IEEE Photonics Society, IEEE Robotics & Automation Society, IEEE Sensors Council, IEEE SMC (Systems, Man, and Cybernetics Society), IEEE SYSTEMS SOCIETY

COMMON THEME: ELECTROMAGETISM

IEEE and IEEE Nuclear and Plasma Sciences Society

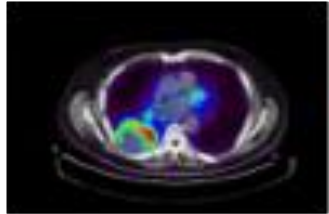


NPSS at a Glance

Technical Areas in NPSS (8)

Computer Applications in Nuclear and Plasma Science (CANPS)

Computer systems, HW and SW aspects of data acquisition/analysis/storage/control in all NPSS disciplines



Nuclear Medical

We advance nuclear medicine

Particle Accelerator

Design, construction, and operation



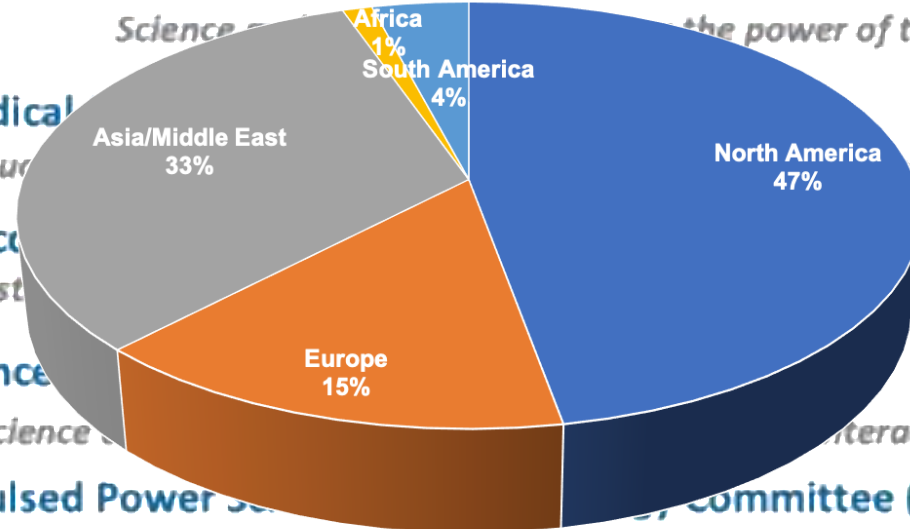
Plasma Science

Explores the science of plasmas



Fusion Technology Committee (FTC)

Science and technology for harnessing the power of the stars



Pulsed Power Science and Technology Committee (PPST)

We produce high peak power to achieve unique sources and study fundamental physics

~3,250 members in 80 countries

Radiation Effects Committee (REC)

We strive to advance, apply, and disseminate radiation effects research



Radiation Instrumentation Technical Committee (RITC)

Radiation Instrumentation A to Z



Interactions of electromagnetic fields and plasma



Why should I be an IEEE NPSS member?

What can the society do for you?

What other opportunities do you have within IEEE?

Networking Opportunities

- ▶ Make friends and collaborations
- ▶ Expand your professional network
- ▶ Learn more about NPSS/IEEE



Volunteering Opportunities (two-way street)

- ▶ Conference abstract reviewing
- ▶ Conference organisation roles
- ▶ Journal article reviewing
- ▶ Membership desk (Membership to leadership – M2L)
- ▶ Committee roles (CANPS, NPSS AdCom)



<http://uv.ieee.org>

Develop your Leadership & Teaching Skills

- ▶ Nominate for a committee role on CANPS or NPSS AdCom
- ▶ Organise and teach a short course or a regional workshop



Schools

EDUCATIONAL and TRANSNATIONAL COMMITTEES

SCHOOL ON ADVANCED TOPICS IN PET/CT AND PET/MR IN THAILAND

The EduCom school on "Advanced Topics in PET/CT and PET/MR" was held in Thailand Jan 27th – Feb 1st, 2023. It took place in two different locations: first we went to Nan in the North of Thailand, where our school was attached to the annual meeting of the Thai Medical Physicist Society, TMPS. Then we moved to Bangkok for three days where we had access to medical imaging facilities at the King Chulalongkorn Memorial Hospital

It was the first school organized by NMISC. We thank the NMISC planning committee and our local counterpart in Thailand Anchali Kisanachinda, who with her team did an excellent job in preparing the event and making sure that everything went smoothly on site.

The participants had to apply on our website and fill in a questionnaire. In total we selected 25 participants (15 female, 10 male; 22 from Thailand, one from



Clockwise from top right:

Running the EasyPET exercise at King Chulalongkorn Memorial Hospital

Students working on the exercises for AI in medical imaging

Three generations of speakers at the WIE event

Wuri from Indonesia had to take along her little daughter and the babysitter in order to attend the EduCom school – only the youngest student doesn't seem to be happy

Attendees at the WIE event to raise awareness for IEEE and NPSS

Meeting for dinner after the WIE event

Students and lecturers at the Thai Medical Physicists Society meeting in Nan

Coffee table discussion on medical imaging



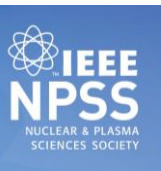
Instrumentation Schools

Bringing technology to all corners of this planet.

The IEEE NPSS Instrumentation Schools, managed by the NPSS Educational Committee, bring modern lab courses to places mainly in Asia and Africa where students only have limited access to such material. Through intense 1-2 week courses students are trained using modern equipment and have close contact with leading experts in the field.

"Thanks a lot Dear Professors. We were delighted. Thank you for all the tools you have given us. We want to use them to advance science and make you proud. Safe journey to you all."

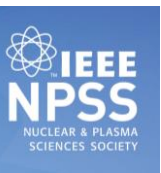
"Thank you to all the Professors for this valuable work. It is a great honor for me to have spent the week of practical exercises with you dear Professor. I dare to believe that one day we will have the chance to meet again and that it will be at this moment for a higher level project. Thank you, teachers, and have a good trip to all of you."



Affinity groups: Young Professionals and Women in Engineering



YP and WiE events are held at most of our conferences supported by IEEE YP



Helping the newer members of our community in their professional advancement.



NPSS Administrative Committee

Functional Committees

Awards
Chapters
Chapters Co-Chair
Communications
Communications Co-Chair
Conferences
Conferences Co-Chair
Distinguished Lecturers
Fellow Candidate Evaluation Committee
Fellow Search Committee
Finance Chair
Finance Co-Chair
NPSS Foundation
Membership
Nominations
Publications
Transnational
Young Professionals
EduCom
Broadening Participation Committee (BP)

Liaisons

Coalition for Plasma Science
IEEE Education Activities Board (EAB)
Fusion Energy Sciences Advisory Committee (FESAC) (US DoE)
ICALEPCS
IEEE Fellows Evaluation Committee
IEEE Social Implications of Technology
ISV Governing Board rep
IEEE-USA R&D Policy Comm
IEEE-USA AI & Comms Policy Comm
IEEE-USA Energy Policy Comm
IEEE NanoTechnology Council
NCRP (National Council on Radiation Protection and Measurements)
PAC Oversight Committee and APS-DPB
RADECS
IEEE Transactions on Medical Imaging (Steering Committee)
Social Media
Women in Engineering
Climate change
IEEE Brain
IEEE AI Coalition
IEEE Standards Association

These are all volunteer roles!

Division and IEEE opportunities

2025 IEEE Future Directions Current Coverage

Industry Advisory Board

IEEE 5G/6G Innovation Testbed™

IEEE Metaverse

IEEE Public Safety Technology™

IEEE ROADMAPS™

IEEE SusTech

IEEE Telepresence

IEEE WPT

Global Semiconductors Ad Hoc

New Initiatives 2025

- Alternative Energy Generation and Storage
- Smart Agri-Food Systems

New Initiatives under consideration:

- AgeTech
- HART (Hardware for AI, Research, & Talent-building)

New Ad Hocs in 2026

- Data for AI
- YP Connect

Transition under way

AI Coalition

IEEE Digital Privacy

IEEE LEO SatS

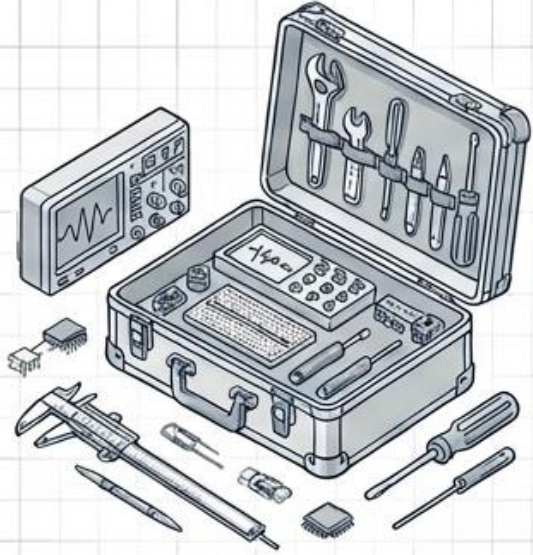
IEEE SMART LIGHTING

IEEE'S Think tank

Both approved in Dec 2025

Emphasis on inter-society collaborations

One unifying HART concept, two distinct dimensions.



IEEE HART Initiative

Delivering Scalable AI-Hardware Solutions through Global Programs and Action.

Core Role	Execution and active implementation.
Focus Areas	Concrete deliverables (Lab in a Box, Competitions) & inter-society collaboration.

IEEE HART Ad Hoc

Defining the Vision and Strategy for AI-Driven Hardware Leadership.

Core Role	Positioning the organization & identifying disruptive opportunities for AI in hardware.
Focus Areas	<ul style="list-style-type: none">• Capture the next-wave of AI adaptation into and through hardware integration.

CALLING ALL IEEE STUDENTS!

COMPETE IN THE IEEE HART HARDWAIRE CHALLENGE!

Looking for a hands-on engineering challenge? The IEEE HART HardwAire Challenge is calling for teams of IEEE student members to design and build an innovative hardware prototype.

The twist: teams must incorporate AI into either the design process or the operation of the prototype itself.



**DETAILS
ANNOUNCED**
15 June 2026



**ONLY 50
TEAMS**
will be accepted



TOP 3 TEAMS
earn a trip to present
their prototypes live
at an IEEE event



US\$2,000
grand prize
for the winners



SCAN TO LEARN MORE
& APPLY!



hart.ieee.org/projects/competition/



WHY PARTICIPATE?

- ✓ Apply your skills to real-world engineering problems
- ✓ Work with your team to design something innovative
- ✓ Receive financial support for components and instrumentation
- ✓ Compete for a US\$2,000 grand prize!

START ASSEMBLING YOUR HARDWAIRE TEAM NOW!

Applications open soon – don't miss your chance!



Humanitarian Outreach

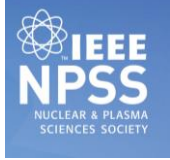
Example

IEEE Smart Village


USD 119 million—109 solar mini-grids—231,000 Nigerian homes and businesses to be connected in underserved communities.

Rajan Kapur, President, IEEE Smart Village

01-May-2026



Help to create self-sustainable regions — with IEEE volunteers, and funding from IEEE entities and the IEEE Foundation, and private donors.



About IEEE Smart Village

HOME / ABOUT IEEE SMART VILLAGE




Systematic Solutions for Empowering a Community.

IEEE Smart Village (ISV) has a unique approach to support the world's energy-impooverished communities by providing a comprehensive solution combining renewable energy, community-based education, and entrepreneurial opportunities. ISV provides seed-funding to carefully selected community entrepreneurs based upon a credible business plan that will impact significant number of people with electricity, education and jobs.

The challenges of starting and sustaining a successful business in the developing world are extreme to say the least. The IEEE Smart Village entrepreneurs are the true heroes. They have learned to build the confidence and support of their local communities. They consistently demonstrate a deep respect for preserving the best of local cultures and heritages while gracefully introducing new technology and business practices. Some of the challenges that they have had to overcome include extremes of climate, altitude, floods, currency devaluations, power blackouts, media blackouts, political instability, local rivalries and contentious elections.

Entrepreneurs funded by IEEE Smart Village collaborate in a very open way to share their experiences, successes, difficulties and lessons learned. For example, the entrepreneurs located in Africa since 2007 are still in continuity with the original founders at the helm. They meet regularly to discuss how to improve their business plans.

IEEE Smart Village supports these entrepreneurs with a team spanning multiple disciplines including fund development, technology, education, proposal evaluation, marketing, program implementation and partner engagement. Many of the ISV Volunteers are IEEE members. However, that is not a requirement and volunteers are needed from a wide range of backgrounds. For those interested, volunteer information is on the Join Us section of this web site.



Project Funding

- ▶ Do you have an idea for a project that aligns with the IEEE/NPSS strategic goals? (<https://iee-npss.org>)

There is funding available

Examples

- Development of virtual labs
- From membership to leadership
- Many educational and humanitarian efforts

NEW this year: YP_travel grant - To enable 2-3 YPs/year to attend IEEE-wide events which emphasize YP engagement. Please see:

<https://newsletter.ieee-npss.org/yp-travel-grant-mar-2026/>

Why am I part of *(and volunteer for)* IEEE NPSS?

- I believe in the values promoted by IEEE/NPSS
- I have the opportunity and privilege to work with people that I respect and admire

How did I get here?

- Started attending conference as a student
- Started volunteering
-

What am I getting out of it?

- Opportunity for continuous learning – depth and breath – stepping stone to broader IEEE activities
- Learning of transferable leadership and organizational skills
- Meet people that influenced my career *(and life)*
- Some wonderful friends

Where do I get more information:

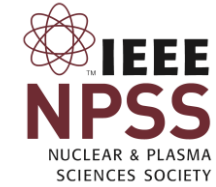
Membership desk!

- *on involvement opportunities*
- *on IEEE and NPSS activities etc...*





Become a new
IEEE and NPSS
Member!



If you sign up to become a **new** IEEE and NPSS member via this QR code, you qualify for a **valuable gift** at this table.

**Special gift for
first time
members!**

