

Slovenia Section

Jože Guna, IEEE Slovenia chair

Section Vitality

Please provide information about the date of last Section elections, date of next elections, and do you have the practice of Vice-Chair becoming the next Section Chair. Section ExCom meetings (list them and provide brief summary if appropriate). List the activities carried out to retain and recruit members and the results obtained.

The last Section elections have been carried out on November 20th through December 10th, for the term 2024-2025. The next elections will be organized by the end of the year 2025. The chair candidates are nominated by the member petition. The ExCom meetings are held two times per year, usually in the beginning of each year when the yearly section assembly is held and in fall (September) as part of the IEEE International Electrotechnical and Computer Science Conference - ERK¹. To better benefit our members, we have established also a third membership and ExCom meeting in spring, usually taking place in May or June.



In the year 2024/25, since the last report in October 2024, so far, the Slovenia Section has organized and reported 33 new various events.

In order to recruit members and retain the current ones we actively promote various activities:

- Encourage and support chapters and affinity groups
- Encourage student members and young professionals
- Encourage membership development and support the senior member and the fellow member elevation
- Organize technical and professional workshops, promotion events (e.g. IEEE Day, IEEE activities presentations as part of academic curricula)
- Encourage cooperation with the academia, invited lectures with distinguished lecturers
- Encourage cooperation with the industry (e.g. student competitions, hackatons, workshops, and companys' visits)
- Promote science and engineering to elementary and high school students
- Organize and promote IEEE at co-sponsored conferences and events (e.g. the 33th IEEE International Electrotechnical and Computer Science Conference, 2nd SloChip conference², ...)
- Premier IEEE conference co-organization and co-sponsorship (MetroSEA 2024, BalkanCom 2024)
- Active contribution and attendance at IEEE conferences and other events
- Recognize the commitment of volunteers by awarding them and recognizing their valuable contributions
- Organize stands dedicated to membership during sponsored conferences

Currently, the Slovenia Section counts 267 active members. The membership retention is stable and very high. We are proud to have met the R8 retention and recruitment goals again this year.

¹ ERK, <https://erk.fe.uni-lj.si/index.html>

² SloChip conference, <https://slo-chip.fe.uni-lj.si>



Figure 1: MD outstanding retention performance reward



Figure 2: MD outstanding member recruitment performance award

Students

List of Student Branches (SB) in your Section, the newly formed or dissolved SBs, if any since the last meeting reporting (Oct 2020). List the student meetings held and Section activities addressed to Students and Young Professionals.

There are two Student Branches (Ljubljana and Maribor). The number of groups remains unchanged. All groups hold regular meetings and organize technical, professional and promotional events. All groups are very active and involved in IEEE promotion and membership development activities. The membership and the number of events has increased compared to the last year. We are especially proud of enriched cooperation between both student branches as well between other chapters and affinity groups (YP, WIE, GRSS, etc.).

We are proud of:

- Student paper competition for both branches – very active and successful
- Cooperation between student branches and IEEE SI section and chapter activities

Most notable events in 2024/25 were:

Student Branch Ljubljana:

- Hands-on Tuesday, lecture&workshop multiple events
- Red Pitaya - IEEE Student challenge "Sh*t happens" Finals, student competition joint cooperation series of events
- Electrotechnical days - Dnevi elektrotehnike - Radio skavt Božo
- SPC related meetings and events
- Regular meetings/elections

Student Branch Maribor:

- Workshop Step into the Future: Using Artificial Intelligence for Seniors
- Introduction to Artificial Intelligence in Computer Games
- Red Pitaya - IEEE Student challenge "Sh*t happens" Finals, student competition joint cooperation series of events
- NVIDIA Workshop: Fundamentals of Deep Learning (CNN, RNN, LLM) in collaboration with Croatia (FERIT, Osijek)
- NVIDIA Workshop: Generative AI with Diffusion Models
- Slovenia Section Local Student Paper Competition
- Workshop: Accelerating CUDA C++ Applications with Multiple GPUs
- Workshop: Scaling CUDA C++ Applications to Multiple Nodes
- Workshop: Fundamentals of Accelerated Computing with CUDA C/C++
- IEEE ISN GRSS/CIS/MTT-S Workshop Maribor 2024
- 3rd NVIDIA Workshop: Upgrading CUDA C++ Applications to Multiple Nodes
- 2nd NVIDIA Workshop: Accelerating CUDA C++ Applications with Multiple GPUs
- 1st NVIDIA Workshop: Fundamentals of Accelerated Computing Using the CUDA C/C++ Framework
- NVIDIA Workshop: Generative Artificial Intelligence with Diffusion Models
- Cooperation with ACM workshop
- Regular meetings/elections

We are especially proud of the 2nd and 4th place at the student paper competition at the Melecon 2024 conference (<https://r8.ieee.org/sac/ieee-r8-student-paper-contest-2024-winners/>).



Figure 3: SPC Melecon 2024 winners (2nd and 4th place)

Affinity Groups

List of Affinity Groups (YP, LM, WiE, SIGHT, etc.), list of SB AGs, newly formed or dissolved AGs/SB AGs, if any since the last meeting reporting. List the activities intended to support affinity groups.

There are WIE, YP and LM active affinity groups. The number of groups remains unchanged. All groups hold regular meetings and organize technical, professional and promotional events. There is a strong cooperation with younger members, students and student branches. All groups are very active and involved in IEEE promotion and membership development activities.

Most notable events in 2024/25 were:

WIE:

- Workshop: Exploring Programming Basics and AI Fundamentals
- Workshop: Fundamentals of Accelerated Computing with CUDA C/C++
- Workshop: Accelerating CUDA C++ Applications with Multiple GPUs
- Workshop: Scaling CUDA C++ Applications to Multiple Nodes
- Workshop: NVIDIA – Generative AI
- Workshop: Introduction to AI in computer games
- Regular meetings/elections

YP:

- Invited lecture prof. dr. Ryoichi Shinkuma: Digital Twin for Mobility With 3D Sensors
- Workshop: Fundamentals of Accelerated Computing with CUDA C/C++
- Workshop: Accelerating CUDA C++ Applications with Multiple GPUs
- Workshop: Scaling CUDA C++ Applications to Multiple Nodes
- Workshop: NVIDIA – Generative AI
- Workshop: Introduction to AI in computer games
- Participation in SYP 2024 (Grenoble, France)
- Regular meetings/elections

Chapters

List of Chapters and SB Chapters in your Section, the newly formed or dissolved Chapters, if any since the last meeting reporting. Indicate how many have reported on time and received rebate. Highlight some of the activities.

The section has 9 active chapters: Industrial Electronics / Industrial Applications, Signal Proc. (SP-01)/Circ. and Syst. (CAS-23), Computer (C-16), Communications (COM-19), Education (E-25), Power Engineering (PE-031), Computational Intelligence, Geoscience and Remote Sensing. As of February 2022 there has been established and approved a completely new chapter, the Biometrics Council Chapter, enriching the total number of active chapters.

Chapters are active and are organizing technical, professional, promotional events and workshops. They are cooperating with the academia, industry and other interested parties. In 2024 there have been 59 different events reported according to the VTOOLS so far.

We are proud of cooperation of IEEE and other professional organizations (e.g. ACM, Electrotechnical Association of Slovenia, ...)

We are especially proud of the following events:

- the 33th IEEE International Electrotechnical and Computer Science Conference, <https://erk.fe.uni-lj.si/erk24.html>
- SloChip – the 2nd and 3rd Slovenian international large conference on chips and semiconductors, <https://slo-chip.fe.uni-lj.si>
- IEEE premier conference MetroSea 2024, <https://metrosea.org/ms2024/>
- IEEE premier conference BalkanCom 2024, <https://www.balkancom.info/2024/>
- 39th Workshop on Telecommunications VITEL 2024, <https://www.drustvo-sikom.si/vitel-2024/>
- 26th Seminar on Radio Communications, SRK, <https://srk.fe.uni-lj.si/2024/main.php>
- 27th Seminar on Optical Communications, SOK, <https://sok.fe.uni-lj.si/2025/main.php>
- ARTEMIS - Discussion with NASA astronaut Mr. Randy Bresnik
- Industry cooperation – RedPitaya competition
- Industry cooperation – Infineon Mission Hub
- Numerous projects approved (bilateral projects ProjNet and INS of the IEEE GRSS chapter,
- Webinar by Dr. Terence Sim on "Continuous Authentication – Still a Thing after 20 years?"
- Webinar Biometric Recognition in the Era of AI Generated Content (AIGC)
- Numerous other invited lectures & workshops & webinars & trainings & summer school events
 - Victor Lubecke, IEEE Fellow (IEEE MTT-S Speaker B. Program, Olga Lubecke, IEEE Fellow, University of Hawaii at Manoa: Physiological Radar)
 - Artificial neural networks in sensing applications in the field of microwaves (Zlatica Marinković, Faculty of Electronic Engineering, University of Niš)
 - Enhancing Radar Performance: A Comprehensive Guide to Phase Noise Measurement Techniques (Boštjan Batagelj, Andrej Lavrič, Faculty of Electrical Engineering, University of Ljubljana)
 - prof. Terence Sim (NUS, Singapur) Continuous Authentication – Still a Thing after 20 years?
 - Webinar prof. Terence Sim (NUS, Singapur) Power Papers: Some Practical Pointers
 - prof. Xiaoming Liu (MSU, ZDA) Biometric Recognition in the Era of AI Generated Content)
 - prof. Tempestt Neal (SFU, ZDA) Qualitative Methods for Biometrics Research: Exploring User Behavior and System Design
 - workshop: Synthetic Realities and Data in Biometric Analysis and Security (SynRDinBAS)
 - workshop: 1st International Workshop on Synthetic Data for Face and Gesture Analysis
- Yearly IEEE SI assembly
- Spring IEEE SI assembly
- Autumn IEEE SI assembly



Figure 4: SloChip conference



Figure 5: Infineon Mission Hub



Figure 6: ARTEMIS - Discussion with NASA astronaut Mr. Randy Bresnik

Industry

List the activities carried out to foster relations with Industry and the results obtained.

The role of IEEE, as the interlink between the industry and academia, is important in IEEE Slovenia section, and is evident from numerous various activities:

- SloChip – the 2nd and 3rd Slovenian international large conference on chips and semiconductors, <https://slo-chip.fe.uni-lj.si>
- the 33th IEEE International Electrotechnical and Computer Science Conference, <https://erk.fe.uni-lj.si/erk24.html>
- 39th Workshop on Telecommunications VITEL 2024, <https://www.drustvo-sikom.si/vitel-2024/>
- 26th Seminar on Radio Communications, SRK, <https://srk.fe.uni-lj.si/2024/main.php>
- 27th Seminar on Optical Communications, SOK, <https://sok.fe.uni-lj.si/2025/main.php>

In 2023/24 we have further strengthened the cooperation with the industry and have gained a new distinguished member for the Industry Relations Coordinator position, dr. Mark Umberger, director and owner of Entia company³.

Diversity, Equity and Inclusion

Highlight any diversity metrics (gender, age, religion, geographical, employment, etc.), new initiatives, best practices and progress around diversity and inclusion happening in your Section. Link to IEEE DEI statement.

The values of Diversity, Equity and Inclusion are highly important and included in planning future activities as well as carrying out current activities of the Slovenia Section. This is evident from the active WIE section as well as from activities from other chapters and student branches. The IEEE Slovenia section tightly cooperates with the academia, especially with the Universities, where these values have been recognized and are formalized by specific formal documents, e.g. the Gender Equality Plan Of The University Of Ljubljana, 2022-2027 (<https://kakovost.uni-lj.si/wp-content/uploads/2022/04/Gender-Equality-plan-of-the-University-of-Ljubljana-2022-2027.pdf>) and the Ethical codex (https://www.uni-lj.si/raziskovalno_in_razvojno_delo/etika_in_integriteta_v_raziskovanju/).

Some events actively promote the inclusion of female colleagues, e.g. Workshop: Programming for women, WIE science/engineering promotion at high schools, Active cooperation on the national event Female engineer of the year 2024.

³ Entia, <https://entia.si/en/>

Activities since the last report

Highlight some of the activities in your Section, with special attention to the things that work well, and things that don't, so that your acquired know-how can be used by other Sections.

Some of the most notable activities and achievements in 2024 were:

- IEEE premier conference MetroSea 2024, <https://metrosea.org/ms2024/>
- SloChip – the 3rd Slovenian international large conference on chips and semiconductors, <https://slo-chip.fe.uni-lj.si>
- 27th Seminar on Optical Communications, SOK, <https://sok.fe.uni-lj.si/2025/main.php>
- ARTEMIS - Discussion with NASA astronaut Mr. Randy Bresnik
- Student Programming Competition IEEEExtreme 18.0
- ENLIT 2024, active participation at the conference

Planned activities

Highlight some of the future activities and initiatives in your Section.

In 2024/25 we plan to further strengthen the academia and industry cooperation, as well as promotion of IEEE, science and engineering to students and younger colleagues.

We plan the following activities:

- The organization of the 34th IEEE International Electrotechnical and Computer Science Conference, ERK 2025
- The organization of the 27th Workshop on Telecommunications VITEL 2025
- Organizing student paper competition 2025
- Co-organization and technical co-sponsorship of IEEE premier conferences
- Further promote IEEE to academia and industry
- Apply for the IEEE technical milestone – the electrification of the Postojna cave
- On-site IEEE assembly technical/professional event organization
- Organization of workshops, invited lectures and promotion events

How Region 8 can be of help to your Section, members, and activities

List any challenges your Section is facing and what support is required from the Region 8. Please, also, give us your suggestions for agenda items that you want to be discussed during the R8 Committee meeting.

The Covid-19 crisis is past, however the effects are still somewhat felt. We plan to further enrich the IEEE Slovenia activities with new events, onsite conferences and experience exchange with on-site and in-person communication as well as technical, professional and promotion events organization. We especially wish to further extend our activities to the younger colleagues and to strengthen the industrial cooperation.

It would be of great benefit to our section if R8 could offer more funding initiatives. We would welcome both:

- hardware funding initiatives that would allow researchers and/or students to purchase measuring instrumentation or kits for the development of products that benefit humanity; and
- promotional funding initiatives that would increase awareness of IEEE among engineers, students, and consumers, either by providing extensive promotional materials (pencils, USB pens, sheets of paper, etc.) or by funding promotional activities (visits to industry partners, activities at high schools, etc.).

These days, it seems difficult to explain to potential members what the benefits of being a member of IEEE are, other than simply being part of the society. At least in our part of Europe, an engineer usually needs some tangible evidence or foreseeable benefits to hold on in order to actively participate in society. In this regard we could also benefit from sharing best practice stories or advice from other sections/regions.

It is still challenging to establish contacts with industry partners. Relations with industry are even more difficult because the section is largely composed of academic members. It would be appreciated if the R8 could expand its support by establishing and maintaining contacts with industry partners throughout the whole region, not limited to section borders.

Any other issues of interest