

## Region 10 Section Report Format

(Please replace above heading with your Section name)

*Please use the following format to submit your Section's annual report to Region 10. Please note that the annual reports are used for selecting the outstanding Sections in the region and reports submitted after the announced due date will not be considered for the award. Please do not include more than 3 photographs and preferably put them on additional pages attached to the report (please delete this paragraph in your report).*

### PART A - SECTION SUMMARY

#### A.1 Executive Summary – (Please follow the format given below)

- Section Executive Committee Member List
  - ✧ Dianguo Xu (section Chair)
  - ✧ Qun Wu (Vice Chair)
  - ✧ Jiahui FU (membership development)
  - ✧ Fanyi Meng MTT chapter vice chair
  - ✧ Guangren Duan (academic exchange)
  - ✧ Lixian Zhang (Industry contact)
  - ✧ Qi Wang (Life membership)
  - ✧ Bin Zou (chapter coordinate)
  - ✧ Weixiao Meng (conference management)
  - ✧ Tao Jiang (Local member activity)
  - ✧ Min Jia(Chair for WIE)
  - ✧ Guohui Yang(Secretary)
  - ✧ Kuang Zhang (treasurer, Chair for student branch and YP)
  - ✧ Cong Wang
  - ✧ Yinsong Li (technical activity)
  
- Section Highlights
  - AFFINITIES**
  - ✧ Harbin Section Affinity Group, WIE(WE00208)
  - ✧ Harbin Section Affinity Group, YP
  - ✧
  - CHAPTERS**
  - ✧ Harbin Section Chapter, COM19 (CH10606)
  - ✧ Harbin Section Chapter, CS23 (CH10491)
  - ✧ Harbin Section Chapter, GRS29 (CH10765)
  - ✧ Harbin Section Chapter, GRS29 CHANGCHUN (CH10789)
  - ✧ Harbin Section Chapter, IE13 (CH10672)
  - ✧ Harbin Section Chapter, PE31 (CH10817)
  - ✧ Harbin Section Chapter, SP01 (CH10734)
  - ✧ Harbin Section Chapter, VT06 (CH10795)
  - ✧ Harbin Section Chapter, IA34 (CH10918)
  - ✧ Harbin Section Chapter, IM09 (CH10926)
  - ✧ Harbin Section Chapter, SEN39 (CH10925)
  - ✧ Harbin Section Chapter, SMC28 (CH10875)
  - ✧ Harbin Section Chapter, ED15 DALIAN (CH10411)
  - JOINT CHAPTERS**
  - ✧ Harbin Section Chapter, JOINT CHAPTER, ED15/PHO36 (CH10406)
  - ✧ Harbin Section Chapter, JOINT CHAPTER, EMC27/MTT17/AP03 (CH10460)
  - STUDENT BRANCHES**
  - ✧ HIT Shenzhen Graduate School (Shenzhen, Cn. Stbc65591a)
  - ✧ HIT -Main Campus, (Harbin, Cn Stb66231b)
  - SECTIONS**
  - ✧ Harbin Section(R00208)
  - STUDNET BRANCH CHAPTERS**
  - ✧ HIT Shenzhen Graduate School, Ia34 (Shenzhen, Cn. Sbc65591a)
  - ✧ HIT -Main Campus, Im09/Sen39 (Harbin, Cn Sbc66231b)

- ✧ HIT -Main Campus, Grs29 (Harbin, Cn Sbc66231a)
- ✧ HIT -Main Campus, Ia34 (Harbin, Cn Sbc66231)

- Major Events (International, National)

Sponsored International conferences during 2021

Conference Name	Date
2021 IEEE/OES China Ocean Acoustics Conference (COA)	July 14-17, 2021
2021 IEEE 3rd International Conference on Computer Science and Educational Informatization (CSEI)	June 18-20, 2021
2021 IEEE 4th International Conference on Electronic Information and Communication Technology (ICEICT)	August 18-20, 2021
2021 IEEE 9th International Conference on Computer Science and Network Technology (ICCSNT)	October 22-24, 2021
International Conference on Industrial Application of Artificial Intelligence (IAAI)	December 24-26, 2021
The Third IEEE International Conference on Power Data Science (ICPDS)	December 17-19, 2021
2021 IEEE International Conference on Power, Electronics and Computer Applications (ICPECA)	January 22-24, 2021
2021 Asia-Pacific Conference on Image Processing, Electronics and Computers (IPEC)	April 14-16, 2021
2021 IEEE International Conference on Artificial Intelligence and Computer Applications (ICAICA)	June 28-30, 2021
2021 IEEE International Conference on Electronic Technology, Communication and Information (ICETCI)	August 27-29, 2021
2021 IEEE 4th International Conference on Automation, Electronics and Electrical Engineering (AUTEEE)	November 19-21, 2021
2021 IEEE International Conference on Advances in Electrical Engineering and Computer Applications (AEECA)	August 27-28, 2021
2021 IEEE 4th International Conference on Information Systems and Computer Aided Education (ICISCAE)	September 24-26, 2021
2021 IEEE Conference on Telecommunications, Optics and Computer Science (TOCS)	December 10-11, 2021

- Major Chapter Activities;

- ✧ Membership Development (April, 2021);
- ✧ Chapter election (June, 2021);
- ✧ Organized distinguished lectures (August, 2021):
  - Lecture 1: Machine Learning for Microwave Modeling and Design
  - Lecture 2: Metamaterials for Invisibility Cloak and Super-scattering
  - Lecture 3: Band-Notched Dual-polarized Electromagnetic Transparent
  - Lecture 4: Antennas for Cross-Band Scattering Suppression Metadevice Realization Through Inverse Design
- ✧ Chapter opening ceremony was held.
- ✧ A talk on Millimeter Wave Signal Propagation in Indoor Environment and Underground Mine was given by Qingsheng Zeng from Nanjing University of Aeronautics and Astronautics
- ✧ Prof. Zhengpeng Wang from Beihang University was invited to give a report on A Novel Ultra-Wideband Plane Wave Generator Antenna Array for OTA Test
- ✧ Recent Progress on the Design of Chinese-Character-Shaped Patch Antennas and Arrays by Kwok L. Chung from Huizhou University.
- ✧ Prof. Yujian Li from Beijing Jiaotong University was invited to give a lecture on Multi-Band Mode-Composite Antennas for Millimeter-Wave and Sub-6-GHz Applications
- ✧ A lecture on Dispersion Engineering of Spoof Surface Plasmon Polaritons was given by Jiafu Wang from Air Force Engineering University.
- ✧ A High-order Modulation (64-QAM) Broadband THz Communication System over 100 Gbps was given by Zhengrong Lai, Guangdong Communications & Networks Institute.

- Major Student and Affinity Group Activities

Table of Seminars:

<b>Title</b>	<b>Date / Location</b>
Present situation and development trend of water turbine technology in China	July 15, 2021 Activity center 330 academic lecture hall
Organized a lecture on Knowledge driven image / video restoration network	June 18 Activity center 216 academic lecture hall
Absolute and relative precise orbit determination of LEO satellite constellation	October 9, Tencent meeting ID: 421 140 292
Infrared video behavior analysis and visual analysis in smart campus	May 20 J1622, science and technology innovation building, Science Park, HIT
[Hitalk micro salon] academic sharing meeting on "key technologies of space advanced connection and separation mechanism"	February 8 <a href="http://meeting-tencent-com-s.ivpn.hit.edu.cn:1080/s/Kchc7PddJSU1">http://meeting-tencent-com-s.ivpn.hit.edu.cn:1080/s/Kchc7PddJSU1</a>
Towards Accurate Biomedical Genomics Anywhere Anytime	August 10 Tencent meeting ID: 585 320 599
Autonomous Systems	June 16 Tencent meeting ID: 161 561 957
Fractional-Order System Models and Their Verified Numerical Analysis Using Interval Methods	January 15 ZOOM ID: 816 2713 3557 Password: 545601
Homogeneous quadrotor control: Theory and Experiment	January 8 Tencent meeting ID: 115 976 096 Password: 202001
Thermal management and new energy technology changes brought by micro nano technology	June 11 A801, Mingde building
Electronic Skin: from Conformal Interface to Sense Digitalization	June 8 Tencent meeting ID: 179 250 297 Password: 0608
Application experience of National Natural Science Foundation of China	May 30 618, New technology building

- Awards

## A.2 Financial Report – (Please follow the format given below)

- Summary (as per submitted L50)

Date	Transactions	Comments
01/01/2020	\$44.47	Section activity
30/01/2020	(\$60.08)	Section activity
01/02/2020	\$44.16	Section activity
01/03/2020	\$40.96	Section activity
31/03/2020	(\$47.86)	Section activity
01/04/2020	\$31.15	Section activity
20/04/2020	(\$33.06)	Section activity
01/05/2020	\$540.90	VT06 for chapter events/activities for 2020
01/06/2020	\$6,659.49	SECTION REBATE
01/07/2020	\$22.65	Section activity
08/07/2020	(\$76.74)	Section activity
01/08/2020	\$23.24	Section activity
01/09/2020	\$21.13	Section activity
14/09/2020	(\$120.73)	Meetings & Social Events
01/10/2020	\$19.61	Section activity

01/11/2020	\$18.99	Section activity
01/12/2020	\$17.56	Section activity
10/12/2020	(\$82.56)	Section activity
14/12/2020	(\$119.22)	Section activity

- Any other financial activities

Type	Check	Comments
Meetings & Social Events(via local account)	\$70	Malleable Thermosets and Their Functional Composites
Meetings & Social Events(via local account)	\$91	Research on Monocular Vision SLAM Based on Multi Sensor Fusion
Meetings & Social Events(via local account)	\$112	Challenges and Outlooks for Robotic Manipulation of (Soft) Deformable Object
Meetings & Social Events(via local account)	\$49	Modelling and Approximation in Complex Networked Systems
Meetings & Social Events(via local account)	\$96	Advancing Next-Gen IC Chips: Innovations in Nanofabrication and Nanometrology
Meetings & Social Events(via local account)	\$67	Convergence in Uncertain Linear Systems
Meetings & Social Events(via local account)	\$99	Robust State Estimation for Switched Systems: Application to Fault Detection
Meetings & Social Events(via local account)	\$46	Prioritizing Features in Process Safety And Security
Meetings & Social Events(via local account)	\$53	Achievements and Prospects of Beidou Satellite Navigation System
Meetings & Social Events(via local account)	\$101	Observability of Large-scale Boolean Control Networks with an Application to the T-cell Receptor Kinetics
Meetings & Social Events(via local account)	\$47	On Power System Automation and Control Room of Future
Meetings & Social Events(via local account)	\$124	Robotic Interaction Control And Human-Robot Collaboration

## PART B - ORGANIZATIONAL ACTIVITIES

### B.1 Membership Development Activities

- Total number of active members in the past 3 years is more than 1500.
- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
  - Invited many scholars, Young Professional professors and Women in Engineering from many university (Dalian Jiaotong University, Northeast University, Harbin Engineering University, Heilongjiang University and Harbin University of Science and Technology, etc) to attend the virtual meetings, the topic of meetings are listed as below:
    - Special Presentation:**About IEEE (September 2021; Hosted by IEEE Harbin Section Secretary Prof. Guohui Yang)
    - Special Presentation:**What opportunities you will get on academic after you join in IEEE (July 2021; Hosted by IEEE Harbin Section Secretary Prof. Guohui Yang)
    - Special Presentation:**About IEEE International conferences (September 2021; Hosted by IEEE Harbin Section Vice President Prof. Qun Wu)

4. **Special Presentation:**How to join IEEE (October 2021; Hosted by IEEE Harbin Section Vice chair Prof. Qun Wu)
5. **Special Presentation:**How to use the facilities that IEEE afford to members. (November 2021; Hosted by IEEE Harbin Section Prof. Kuang Zhang)

## B.2 Chapter Activities

- Total number of Chapters in the Section
  - ✧ Up to now, the Harbin Section has 15 chapters including the joint chapter.
- Number of Chapters formed in the current year
- Number of active Chapters (Chapters who have reported required number of meetings during the year)
  - ✧ There are 15 chapters are active.
- Summary of Chapter activities (Chapter wise with attachment table/information)
  - ✧ Organized several seminars and technical activities
  - ✧ Help to organize the international conference as a technical co-sponsor or sponsor
  - ✧ Organized several lectures and tutorials in Harbin, Jilin, Shenyang and Dalian city of Harbin section region.
  - ✧ Organized local members to serve as review for some conferences and journals
  - ✧ Organized local members to serve as editors for some journals

## B.3 Professional and Continuing Education Activities

Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs with attachment table / information

Workshop on LaTeX  
 Workshop on Matlab  
 Membership Development Boot Camp  
 Distinguished lecture 1: Recent Advances in ANN for Fast Parameterized Modeling and Optimization  
 Distinguished lecture 2: Research on Antennas Based on Substrate Integrated Suspended Line  
 Distinguished lecture 3: Antenna-inspired Metamaterial Absorber with Low-profile, Wideband, and Fully Improved Angle Insensitive Performances  
 Distinguished lecture 4: A Novel Sea Clutter Suppression Method based on Neural Network

## B.4 Students Activities

- Total number of Student Branches in the Section **4**
- Number of Student Branches formed in the current year **1**
- Section level student activities (student congress, paper and other contests, awards etc) :
  - ✧ 4 students excellent paper awarded
- Number of active Student Branches (Student Branches who have reported required number of meetings during the year) **4**
- Summary of Student Branch activities (Student Branch wise with attachment table/information)

Title	Date
IEEE Student Branch organized a seminar on discussion -Decoupling for MIMO antennas	April 2021
How to use Latex to format the conference paper	May 2021
Discussion on avoid the plagiarism problems of paper	May 2021
Organized a tutorial on introduction Matlab	July 2021
Workshop on RF Properties of Graphene and its Applications to Antennas for 5G/6G Communications	September 2021

Wireless channel model evolution from 5G to beyond 5G	October 2021
Webinar on Communication-efficient Decentralized Signal Detection	October 2021
Lecture on to design the oral session PPT and poster	November 2021
Training on to be volunteer in international conference	November 2021
Conducted the contest on Antenna Technologies for 5G/B5G Communications	December 2021

## B.5 Affinity Group Activities

- Young Professional (YP):
  - ✧ Organized the workshop in school to encourage women and young scholars in engineering
- Women in Engineering (WIE)
  - ✧ Please find B.1 in this file. Some Promotional lectures or virtual meetings about IEEE were held.
- Life Member

## B.6 Awards & Recognition Activities

- Award constituted by the Section:
  - ✧ IEEE Harbin Section sponsored or technical supported several international conferences, in some conferences best paper awards, best oral paper awards, best poster awards were constituted.
  - ✧ Electronic design contest was held; the rankings were constituted.
  - ✧ Outstanding Section Membership award.
  - ✧ Outstanding Chapter award
- Please list all Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year 2015
  - ✧ IEEE Harbin Section team received a Gold award for membership development in 2021.
  - ✧ Prof. Kuang Zhang, the chair for Young Professional Affinity Group, Harbin section won an award from IEEE for notable services and contributions towards the advancement of IEEE and the engineering profession during the 2016-2018.
  - ✧ Prof. Jiahui Fu, won an award for outstanding achievement in member recruitment for the Harbin section during the 2018 membership year, which is recognized by the IEEE member recruitment and recovery committee.

## B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)

- Newsletter (name and number of issues in the year) : no
- Home Page of the Section: <https://site.ieee.org/harbin>
- contacts with Section via [ieee@hit.edu.cn](mailto:ieee@hit.edu.cn), among members contact,they use Tecent social media or Wechat.

## B.8 Industry Relations

- Membership growth and retention
- Activities for/with industrial members

Harbin section organizes industry visit, seminars and exchange activities with following enterprises:

- ✧ Beijing Chuangyu Xingtong Technology Co., Ltd; Harbin AISI Electronics Co., Ltd; Qingdao Ruitaier Electronic Technology Co., Ltd; Shanghai Jingdao Scientific Instrument Co., Ltd; Shanghai Qigao Electronic Technology Co., Ltd; Shanghai Zequan Technology Co., Ltd; Suzhou shengzhiyuan Electronic Technology Co., Ltd; AVIC deep blue underwater precision technology (Shenzhen) Co., Ltd
- ✧ Afford the exhibition opportunities to the industries.

## B.9 Humanitarian Technology Activities

- Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
- SIGHT Activities

## B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”
  - ✧ IEEE Members luncheon was organized (August, 2021)
  - ✧ IEEE Harbin Section establishment anniversary day celebration (September 20, 2021)
  - ✧ Chapter establishment anniversary day celebration (October, 2021)

## PART C - OTHERS

### C.1 Special Events

- Please briefly describe the importance of special events and the outcomes achieved
- Funding secured from the IEEE and external sources including sponsorships

### C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

- Nature of relationship and details of any formal agreement signed
- Details of joint activities
  - ✧ Work with Research Center for Medical and Healthcare Management, Ritsumeikan University, JAPAN to organize the workshop (August,2021)
  - ✧ Work with Liaoning Province Software Industry School-Enterprise Alliance to organize the seminar (October, 2021)
  - ✧ Work with Heilongjiang Association for Science and Technology to organize a lecture for student branches.
  - ✧ Cooperate with Heilongjiang Electronic Society to organize social practice activities
- Benefit to IEEE members (for example discounts, access to technical information etc.)
  - ✧ Invited member as conference peer reviewer.
  - ✧ Afford the fee concession when member publish papers on IEEE conference
  - ✧ Introduce the opportunities for member to deliver invited speeches and keynote speeches on international conference.
  - ✧ Attend the international conference as listeners for free.
- Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)
  - ✧ Help to recruit new member.
  - ✧ Help to organize the activities
  - ✧ Give the lecture to member or student branch
  - ✧ Afford technical support
  - ✧ Serve as volunteer in activities

### C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections:
  - ✧ Worked with Beijing Section and Xi’an Section
  - ✧ Intend to work with Xi’an Section in 2021.
- Joint activities with any other Section:

- ✧ Held an international conference with IEEE Xi'an Section; afford technical support to other sections;

#### **C.4 Support extended to Sub-sections & Society Chapters within the Section**

- Support extended for organising technical, educational and professional activities
- Joint activities for membership development
- Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section

#### **C.5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)**

- ✧ Regular organization of technical activities
- ✧ Establish the new chapters
- ✧ Maintaining active student branches
- ✧ Held virtual international conferences

#### **C.6 Problems anticipated and suggestions for solutions, if any**

### **PART D - GOALS AND PLANS**

#### **D.1 Continuation of project/activity in progress and their implementation plans**

#### **D.2 Goals and Future Plans**

- ✧ Recruit more membership
- ✧ Organize more technical activities
- ✧ Sponsor international conferences
- ✧ Increasing training to members

#### **D.3 Any innovative ideas to make IEEE more creative and value added for sustaining the membership retention and recruitment goals.**

#### **D.4. Business Plan for Sustainable Growth and Financial Stability.**

- ✧ Search for Golden/ Silver sponsors to afford the financial sponsorship to conference
- ✧ Organize membership bootcamps