

## Region 10 Section Report – Bombay Section

### PART A - SECTION SUMMARY

#### A.1 Executive Summary

- Section Executive Committee Member List

No	Name	Position
1	Mr. Abhay A. Phansikar	Section Chair
2	Prof. Suryanarayana Doolla	Section Vice Chair
3	Dr. Vinit Kotak	Section Vice Chair
4	Dr. B Satyanarayana	Section Secretary
5	Prof. Sanjay Pawar	Section Treasurer
6	Mr. Anthony Lobo	Immediate Past Chair
7	Mr. Anand Gharpure	Section Jt. Secretary
8	Dr Saurabh Mehta	Technical & Professional Activities Chair
9	Prof (Ms) Ashwini Kotrashetti	Section Jt. Treasurer
10	Prof Milind Mushrif	Member
11	Aiyappan Pillai	Member
12	Mr Dnyaneshwar Kamble	Member
13	Dr Sanjay Dorle	Member
14	Seema Kawale	Member, WIE Chair
15	Hitesh Mehta	Member, Industry Relations Chair
16	Prof. Kiran Talele	Member, Student Activities Chair
17	Prof Swapnali Makdey	Member
18	Mr Mukund Sathe	Member
	Dr G S Tomar	Chair MP Subsection, Ex-Officio Member
	Mr Arvind Kumar	Chair Nagpur Subsection, Ex-Officio Member

- Section Highlights

<http://iecebombay.org>

- Major Events (International, National)

#### Technical Events

Number	Date	Event	Description	Attendees
1	15 Nov 2019	Goa Industry Meet	Meeting of IEEE and Non IEEE Industry Members in Goa	12
2	13-15 Dec 2019	IMaRC 2019	Jointly Organised with IEEE MMTS and Bombay Section MTTTS Chapter	350+
3	11-13 Aug 2019	IBSSC	First IEEE Bombay Section Signature Conference. Theme AI/ML/RPA	200+
4	4 <sup>th</sup> – 11 <sup>th</sup> October 2019	IEEE Week Celebration	Done at the Newest IEEE branches by inviting all new branches counselors with lecture on processes to be followed, branch vitality maintenance	300+
5	30 <sup>th</sup> -31 <sup>st</sup> March 2019	Hackathon	Section Hackathon with a problem statement to find a solution to tweak asked to their existing project.	100+

- Major Chapter Activities

Over 125+ activities are done by Chapters; the details are provided in list in section B. Many DL's visited and gave talks at various locations in the section.

- Major Student and Affinity Group Activities

Key Student Activities are listed herein. Events done by Affinity groups have been listed in Section B.

Number	Date	Event	Description	Attendees
1	Various	ORIENTATION Cum Training  SAC Volunteer Training  Local Branch Counselor Meets  Admin Committee Meets	IEEE ORIENTATION Cum VOLUNTEER TRAINING, Student Branch Operations etc were undertaken jointly with new student branch openings and at some existing branches many times during the year  These were also done in coordination with YP & WIE.	400+
2	18-20 Jan 2019	Bombay Section Students Congress	Bombay Section Congress to promote Leadership, and team bonding, having technical/professional/academic tracks for both students and teachers	375
3	13-09-2019	InOrbit 1.0	Organized at Somaiya Sion by 7 Student branch volunteers across section for Branch Revival/Global Outreach/Mentorship.	125
4	15-09-2018	Phoenix 1.0	Organized at ISBM Sus by 4 Student branch volunteers across section for Branch Revival/Global Outreach/Mentorship.	130
5	07 Oct 2019	Workshop Dr Rita Pujari of NASA NV Space Grant	Opportunities for innovation, Grant Funding, having a longer-term vision and facilitation to reach goals	250+
5	21/9/2019	GABFEST	Joint SB Initiative of R10 SAC Funded for revival and orientation of student branches. Venue- Priyadarshini Institute of Engineering and Technology, Nagpur	250+
6	5/10/2019	Leadership Conclave	Nagpur- IEEE Region 10 funded initiative under Leadership and Member Orientation. Venue- Ramdeobaba College of Engineering, Technology and Management, Nagpur	100

- Awards

Outstanding Volunteer Awards

Sponsorship of members and student members to attend various leadership conferences  
Scholarships

Number	Date	Event	Description
1		Hemant Sonawala Award	Approx USD 1500 Dollars for Needy girl engineering student with active IEEE record.
2		XTREME AWARD	Over USD 1500 dollars for teams that will come in top 100 in India
4		SWYC Participation	Approx USD 1000 dollars for deserving candidates to participate in SYWC
5		AISYC Congress Participation Award	Approx USD 1000 dollars for deserving candidates to participate in AISYC, along with LM's
6		POCO	Approx USD 750 for participation in POCO

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

- Summary (as per submitted L50)

All amounts shown herein are in Indian Rupees

BOMBAY SECTION R00121 BUDGET		Budget18_19	Actual18-19	Budget 19-20
<b>Inflow during the year</b>				
<b>Conf Income</b>				
Rebate from IEEE Headquarters / Reimb		1700000	2,191,000.00	2,078,572.00
Interest from SB & FD accounts		500000	347,000.00	400,000.00
Income form Events and other sources		200000	194,000.00	200,000.00
Grants received for various projects				
	<b>Total Income</b>	<b>2400000</b>	<b>2,732,000.00</b>	<b>2,678,572.00</b>
<b>Expenses</b>				
Conferences (net outflow)		100000	-	300,000.00
Professional Activities (Workshop/Seminars/DLs)		250000	1,007,000.00	300,000.00
Area wise Technical activities		200000	128,000.00	250,000.00
Job Fairs				
Student Activities (Section)		250000	374,000.00	250,000.00
Grants and Awards (Students)		150000	107,000.00	200,000.00
Meeting and Social Events		300000	99,000.00	250,000.00
Promoting IEEE Brand, Website, Membership Development		50000	23,000.00	50,000.00
Travel		150000	240,000.00	200,000.00
Accounting, Audit, Section registration expenses		75000	94,000.00	75,000.00
Other Management, General Expenses, Secretarial assistance		175000	121,000.00	170,000.00
Chapters		100000	98,000.00	100,000.00
Affinity Groups		100000	79,000.00	100,000.00
Sub-Sections (complete)		500000	360,000.00	400,000.00
Grants + Expenses for Student Activities				
Grants + Expenses for Professional Activities			-	
	<b>Total Expenses</b>	<b>2400000</b>	<b>2,730,000.00</b>	<b>2,645,000.00</b>

- Any other financial activities

### Executive Committee and Other Admin Meetings

#### Executive Committee Meetings

These meetings last typically two and half hours each and the agenda consists of General Communications, Admin & Operations, Accounts Presentation, Technical Events, Conferences and presentation by various chairs.

Number	Date	Event	Description	Attendees
1	12-01-19	First Execom	DBIT, Kurla at 9:30am	17
2	09-02-2019	Second Execom	IIT Bombay	14

3	09-03-2019	Third Execom	IIT Bombay	09
4	13-04-2019	Fourth Execom	DBIT, Kurla at 9:30am	17
5	19-05-2019	Fifth Execom	IIT Bombay	13
6	08-06-2019	Sixth Execom	DBIT	13
7	13-07-2019	Seventh Execom	SNDT	17
8	10-08-2019/31-08-2019	Eighth Execom	IIT Bombay	17
9	14-09-2019	Ninth Execom	IIT Bombay	15
10	12-10-2019	Tenth Execom	DBIT	8
11	9-11-2019	Eleventh Execom	IIT Bombay	15
12	14-12-2019	Twelfth Execom	IIT Mumbai	7

#### Local Connect Meetings

Number	Date	Event	Description	Attendees
1	19-01-2019	Meeting with regional members at Nasik	This meeting was with industry and academic members with a view to enhance activities in that region.	12
2	01-02-2019	Meeting with Regional Members at Goa	This meeting was with industry and academic members with a view to enhance activities in that region.	6

#### AGM

Number	Date	Event	Description	Attendees
1	29-09-2019	Bombay Section AGM	Annual General Meeting of the section to pass accounts, update on activities during the year and pass the next year's budget.	60
2	11-12-2019	Nagpur Subsection AGM	Annual General Meeting of the subsection to pass accounts, update on activities during the year and pass the next year's budget.	91
3	04-12-2019	Madhya Pradesh Subsection AGM	Annual General Meeting of the subsection to pass accounts, update on activities during the year and pass the next year's budget.	32

#### Section Representation at IEEE, R10 and India Council

- Dr Priti Bajaj on Eta Kaap Nu Society Governing Board
- 3 Section officers (Mr. Abhay Phansikar, Mr Ashok Jagatia, Dr. Chanakya on India Council Execom (Member, Vice Chair MD, Webmaster) in addition to Section Chair (ex-officio Member)
- Mr Anand Gharpure & Mr. Aiyappan - volunteers in the MGA India Strategic Initiative, and also Indian Insurance Support Team
- Hitesh Mehta on MGA Elevation Committee

## PART B - ORGANIZATIONAL ACTIVITIES

### B.1 Membership Development Activities

- Total number of active members in the past 3 years.

	2019	2018	2017
<b>Life Fellow</b>	5	5	5
<b>Fellow</b>	10	11	9
<b>Life Sr Mem</b>	20	15	10
<b>Sr Memb</b>	295	242	217
<b>Life Member</b>	6	6	5
<b>Member</b>	2304	1592	1752
<b>Assoc. Mem.</b>	70	65	73

<b>Gr. St. Mem.</b>	704	751	633
<b>Affiliate/SA</b>	21	47	
<b>Hi Grd. Total</b>	3432	2734	2704
	As of Dec 2019		
<b>St. Mem. Dec 2019</b>	4738	5712	5537
<b>St. Mem. Jan 2020</b>	3892		
<b>Grand Total Dec 2019</b>	8169	8446	8241
<b>Grand Total Feb 2020</b>	7323		

**Membership Renewal happens till February. Section has seen a good growth in Higher Grade Members.**

- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members

Technically Sponsored Events

IEEE Bombay Section technically co-sponsored various conferences spanning across the region.

The section nominated on representative from the Executive Committee to ensure that the quality of the conference is maintained to IEEE standards.



Technical/Professional Activities : SKEP (Skill and Knowledge Enhancement Program)

The program was initiated in 2013 and is now a flagship event of the section. The events are either wholly sponsored by the section or co-sponsored by society chapters/affinity groups. It has grown from strength to strength with 2015 seeing the program extend to towns outside Mumbai. In the marathon format, 36 (12 + 24) sessions were organized in academic as well as research institutions in two waves. The highlight of the program is the practical orientation of sessions, mostly conducted by Industry experts.

THE SKEP now runs two hands on workshops on EMBEDDED SYSTEMS & VLSI, AT&ML. More workshops will be added in coming years.

## B.2 Chapter Activities

- Total number of Chapters in the Section

Computer Society
Communications Society
AP/ED Chapter
SMC Chapter
Signal Processing
IA/PE/IM Chapter
MTTS Chapter
TEMS

Life Members Affinity Group
YP - GOLD
WIE
Bombay SIGHT Pratham
IES/PELS Joint Chapter
CES Chapter
AES Chapter

- Number of Chapters formed in the current year

Two New Chapters got added at Section Level, The Consumers Electronics Society and Power Electronics Society/Industrial Electronics Society Joint Chapter. However since the approval is as of Dec 28, received in January, their installation was done in 2019.

One more Chapter Aerospace and Electronics Systems was applied for in December 2019 and approved in February 2020

- Number of active Chapters (Chapters who have reported required number of meetings during the year)

All the above chapters are active.

- Summary of Chapter activities (Chapter wise with attachment table/information)

No	Date	Speaker	Topic	Location
1	Jan 23, 2019	B.Satyanarayana	Analog and Digital Signal Processing	Universal College of Engineering, Vasai, Thane
2	Jan 29, 2019	B.Satyanarayana	Analog and Digital Signal Processing	LTCOE, Navimumbai
3	Jan 31, 2019	Sunil Karmchandani	Imag Processing	RGIT, Andheri
4	Jan 31, 2019	Suyog Vyawahare	Software Define Radio Future of wireless communication	RGIT, Andheri
5	Feb 1, 2019	Saurabh Mehta	HAM Radio	PCCE, Goa
6	Feb 1, 2019	Amiya Tripathi	Use of IoT and Remote Sensing in Agriculture	PCCE, Goa
	Feb 1, 2019	B.Satyanarayana	The Vision and Mission of IEEE	DBCOE, Goa
7	Feb 1, 2019	Sangeeta Chaudhry	GIS and Carrier Opportunity	DBCOE, Goa
8	Feb 1, 2019	Sanjay Shitole	Importance of research at undergraduate level	DBCOE, Goa
9	Feb 1, 2019	Sachin Khole	FPGA based Digital Design	UCOE, Vasai
10	Feb 2, 2019	Amiya Tripathi	Use of IoT and Remote Sensing in Agriculture	DBCOE, Goa
11	Feb 2, 2019	Saurabh Mehta	HAM Radio	DBCOE, Goa
12	Feb 2, 2019	B.Satyanarayana	VLSI	BITS Pilani, K K Birla Goa Campus
13	Feb 2, 2019	Sanjy Shitole	ML & DL	BITS Pilani, K K Birla Goa Campus
14	Feb 7, 2019	Izhar Khan	E-Payment System	RGIT, Andheri
15	Feb 7, 2019	Irfan Landge	Alexa in Home Automation	RGIT, Andheri
16	Feb 12, 2019	Y.S.Rao	Embedded System	MHSSCOE, Mumbai
17	Feb 15, 2019	Ashwini Kotrashetti	Mobile Antenna	St. John College of Engineering and Management, Palghar
18	Feb 15, 2019	Saurabh Mehta	How to choose conference/Journal to publish your work	St. John College of Engineering and Management, Palghar

19	Feb 20, 2019	Anjali Deshpande	How to write good technical papers	LTCOE, Navimumbai
20	Feb 23, 2019	Anand Gharpure	Industry 4.0	SIBM , Pune
21	Feb 23, 2019	Kiran Talele	Innovation and entrepreneurship development	SIBM , Pune
22	Feb 23, 2019	Vinit Kotak	RFID an overview & applications	SIBM , Pune
23	March 23, 2019	B.Satyanarayana	VLSI: Challenges & Opportunities	PCCOER,Pune
24	June 10, 2019	Saurabh Mehta	Green IoT	St. John College of Engineering and Management, Palghar
25	June 10, 2019	Hannan Satopay	Demo on IoT and ML	St. John College of Engineering and Management, Palghar
26	Jun18,2019	Aarti Karande	Research Paper Writing Skill	Universal College of Engineering, Vasai, Thane
27	Aug 30, 2019	Hannan Satopay	Data Science & Machine Learning: Introduction & Applications	RGIT, Andheri
28	Aug 30, 2019	Sujata Kulkarni	Technical Paper Writing	RGIT, Andheri
29	Aug 30, 2019	Sanjay Shitole	Latex Workshop	PCCOER,Pune
30	Sep 6, 2019	B.Satyanarayana	The interplay between science,technology, engineering, mathematics.	Amrutvahini College of Engineering
31	Sep 6, 2019	Irfan Landge	Developing skills for Amazon Alexa	Amrutvahini College of Engineering
32	Oct 9, 2019	Abhay Phansikar	Solution Engineering	Pillai Campus, Panvel
33	Oct 11, 2019	Abhay Phansikar	AI & ML	DBIT, Kurla

1	Various	AP/ED	17 Events	500
2	Various	MTTS	4 Events	200
3	Various	Computer	2 Events	200
4	Various	Communications	2 Events	120
5	Various	PES	6 Events including one International Workshop	250
6	Various	TEMS	2 Events	60
7	Various	GRSS	4 Events	200
8	Various	CES	1 Event	40
9	Various	PELS/IES	5 Events	300
10	Various	SP	1 Event	200

### **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

#### **Professional and Continuing Education Activities**

The section conducted various technical activities as part of SKEP and Chapter activities and they have been highlighted in other Sections. Some other activities not listed there are provided here.

#### **WORKSHOPS**

This is a program run by the section and participants are provided with Hands-on training.

They are generally day-long programs, some of the workshops have been extended for two days.

Sr. No	Date	Name	Topic	Host College
1	Jan 19, 2019	Saurabh Mehta and Hannan Satopay	Arudino Programming	Sandeep University, Nasik
2	Feb 16, 2019	Saurabh Mehta and Hannan Satopay	IoT and Arudino	SIES-GST, Nerul
3	Feb 23, 2019	Saurabh Mehta and Hannan Satopay	IoT and Arudino	TCET, Mumabi
4	March 16, 2019	B.Satyanarayan and Mandar Saraf	FPGA	SIES-GST, Nerul
5	March 16, 2019	Santosh Chapneri	Machine Learning	SIES-GST, Nerul
6	Aug 23, 2019	Santosh Chapneri	Machine Learning	DBCCE, Goa
7	Aug 24, 2019	Santosh Chapneri	Machine Learning	DBCCE, Goa
8	Aug 25, 2019	Santosh Chapneri	Machine Learning	DBCCE, Goa
9	Aug 31, 2019	Hannan Satopay	Alexa Workshop	SIES-GST, Nerul
10	Sep 14, 2019	Saurabh Mehta and Hannan Satopay	IoT and Arudino	SFIT, Mumbai
11	Sep 14, 2019	Vivek Nar	Robotics	SIES-GST, Nerul
12	Sep 24, 2019	Hannan Satopay	Alexa Workshop	MIT, Aurangabad

#### Webinars

This is a new initiative run by the section from 2019. Till end of 2020, about 60 webinars are planned for, one every week.

Serial Number	Date	Speaker	Topic
1	27 Jun 2019	Hannan Satopay	Prototype Building
2	20 July 2019	Hannan Satopay	Autodesk Tinkercad
3	29 August 2019	Saurabh Mehta	Open Source Tools
4	26 September 2019	Saurabh Mehta	Network Simulation

#### Value Added Courses

This is a new initiative run by the section from 2019. The Value-Added Courses are planned to be led to certification courses.

Serial Number	Date	Location	Topic
1	20—24 May 2019	VIT, Mumbai	Research Methodology
2	29-31 May 2019	VIT, Mumbai	ICT Education Methodology
3	7-9 September 2019	NIT Raipur	ICT Education Methodology

### Hackathon

IEEE BOMBAY SECTION FIRST NATIONAL HACKATHON 2019 was organised during 30-31 March, 2019 at Vidyalankar Auditorium Reading Room. It was a non-stop 24 hours intense competition where teams from twenty five colleges participated for completing their projects and winning certificates, trophies and cash prizes worth ₹70,000. This hackathon was also open for non-IEEE members as well, and the teams had to go through a rigorous selection process based on the project ideas they submitted. Twenty-one teams out of seventy made it to the final competition to build their projects keeping in mind the challenging twist that was revealed to them on the day of the competition. Dignitaries from IEEE Bombay Section were present throughout the event for guiding the teams and evaluating their progress during the hackathon. The participating teams were from two domains- Software and Hardware.

#### IBSSC – First Bombay Section Signature Conference

The first edition of the IEEE Bombay Section Signature Conference – IBSSC-was successfully organised during July 26-28, 2019 at the VMCC, IIT Bombay. The tracks chosen for this edition were: Internet of Things, Data Science and Analytics, Robotics Process Automation and Artificial Intelligence and Machine Learning.

Day-long pre-conference tutorials were organised on “Machine Learning based predictive analytics” and on “Advances in Deep Learning”. The Conference was inaugurated by Mr. Raghuram Velega, VP – Head of Analytics (Big data and ML), Jio Infocomm Ltd., Mumbai, who also delivered the Keynote address on “Building a successful data driven organization (Jio)”. Seven plenary talks were delivered by the experts from industry, academic and research fields. Mathworks conducted an industry session on “Digital Transformation: Preparing the Engineer of Tomorrow” as well as organised a broadcast session on “Addressing challenges in Deep Learning workflows using MATLAB”.



329 papers were received, only 83 best quality papers were selected for oral presentation, out of which 51 papers were presented in eight parallel sessions at the Conference. Two of the best presentations were awarded. The papers presented at the Conference will be submitted soon to IEEEExplore for publication. In all, about 120 delegates attended the Conference.

### IEEE IMaRC 2019

The IMaRC 2019 was a IEEE MMTS Conference organized by MTTs Chapter of Bombay Section in association with Section and Indian Institute of Technology Bombay.

IMaRC 2019 event included, multiple technical sessions, paper presentations and Talks from eminent speakers.

The Lecture on the first day, by the Noble Laureate – Dr. John Mather from NASA, USA on was well attended and appreciated.

The salient features of the event:

**Inauguration:** The inauguration of the Event was done jointly by Prof. Dominique Schreurs (IEEE MTT-S President), Prof M V Pitke (Patron – Ex-TIFR) and Prof. Viswanadham (aIIT Bombay)

**Visitors:** The event was well publicized and that resulted in multiple visitors dropping in during the 3-day event. Additional benefit - the location of the event, IIT Bombay, is also centrally located and one of the best possible venue for such Technical events.

**Delegates.** A large number of Delegates, Nationally & Internationally registered for this event. The number was about 300 and the entire Conference facility was buzzing with sharing of Technical information.

**Paper Presentations.** We had over 150 papers presented by authors from 23 countries – eminent speakers, PhD students and budding Research Persons from various locations. To promote Women Engineers by keeping special sessions – Women in Engineering and Women in Microwave. These sessions were one of the highlights of the conference.

**Student Initiative:** About 70 students were given free registration, Grants & the boarding and lodging expenses were reimbursed – for presenting papers and attending the conference.

**Awards:** Awards were given for best conference papers and best student papers. Also, there were separate awards for students who participated through the student initiatives.

**Poster presentations.** This is an opportunity for the students (who do not get a chance to Present Talks) to display their research information. This helps them in getting a chance to discuss and get inputs from the visiting Senior members of the Fraternity.

**Exhibition:** The sponsors of the event were able to set up their stalls, displaying their Specialties and got opportunity to interact with the Visiting Members – national & international. There were 20 Sponsors and Grantees in Total.

Overall the Event turned out to be a Grand Success and all the aspects of the events were appreciated by all the visiting Dignitaries.

### Celebrating Sir Jagadish Chandra Bose

IEEE celebrated the 160th anniversary of Sir Jagadish Chandra Bose on February 17, 2019 by reflecting on his life and works through eminent speakers compassionately projecting his work to 150 plus aspirant IEEE members and engineers in Bengaluru, INDIA. This workshop, which was inaugurated by Dr. S.N.Singh (Chair, IEEE India Council), showcased the innovations of Sir J C Bose and its relevance and contribution to the modern technology. While Prof. B S Sonde (ASM Technologies), Prof. D P Sengupta (NIAS) and Dr. Surendra Pal (DRDO) reflected on the life of Sir Jagadish Chandra Bose, Mr. C S Rao (Quadgen Wireless Solutions) and Dr. Yashwant Gupta (TIFR) presented the application of Sir J C Bose's work in unlicensed 5G band for communication networks and Radio Astronomy. The highlight of the workshop was the demonstration of the working replica model of JC Bose's millimetre wave experiment by Dr. Dr. K.A.Shaik (MJCET) and Dr. S.I.Mohiuddin (MJCET) as well as demonstration of microwave apparatus by Mr. Sudhir Phakatkar (TIFR).

Other Technical Activities

Number	Date	Event	Description	Attendees
1	23 Feb 2019	IES/PELS Chapter Inaugural	Talk by Dr Sanjib Panda NUS, Interactions with local industry followed by dinner.	60

Number	Date	Event	Description	Attendees
1	08-11-2019	DL Talk Dr Ravinder Dahiya	Large Area Flexible Electronic Skin	51
2	1-11-2019	DL talk Dr Ranbir Singh	Silicon Carbide based MOSFETS	48
3	09-11-2019	DI Talk Dr Jan Kruegener	High Efficiency Solar Cells	50

## **B.4 Students Activities**

- **Total number of Student Branches in the Section**

There are currently 132 branches listed, more than 50% are inactive. The section has undertaken a campaign to revive, we have been successful with many of them, however a thrust can be provided again after the admission this year around July 2019.

No	Student Branch	No	Student Branch
1	Acropolis Institute of Technology and Research SB	67	Padmabhusan Vasantdada Patil Coll Of Eng
2	All India Shri Shivaj Mem Soc Inst of Info Tech	68	Padmashree Dr D Y Patil Inst Of Eng & Tech
3	Amrutvahini College of Engineering SB	69	Padmashri Dr Vithalrao Vikhe Patil Coll
4	Atharva College of Engineering SB	70	Padre Conceicao College Of Engrg
5	Bansal Inst Research & Tech SB	71	Parshvanath College Of Engrg
6	Bharat College of Engineering SB	72	Patel Group of Institutions - Indore, SB
7	Bharati Vidyapeeths Col of Eng For Women SB	73	Peoples Education Society Coll of Engineering SB
8	Bhilai Inst Of Tech Durg SB	74	Pillais Inst Of Info Tech Eng ,Media Studies & Research
9	Birla Institute of Tech and Science Pilani-Goa SB	75	Pimpri Chinchwad College Of Engineering
10	Central India Institute of Tech - Indore SB	76	Priyadarshini Coll Of Eng & Architec
11	Cummins College of Engineering For Women SB	77	Priyadarshini Institute of Eng & Tech, Nagpur SB
12	D Y Patil College of Engineering SB	78	R.C. Patel Institute of Technology, Shipur SB
13	D.K.T.E.'s Textile & Engin Inst Ichalakaranji SB	79	Rajarambapu Inst Of Tech SB
14	Datta Meghe College of Engineering SB	80	Rajiv Gandhi Col of Eng, Res & Tech, Chandrapur SB
15	Dilkap Research Inst of Eng & Man Studies, SB	81	Ramrao Adik Inst Of Tech
16	Don Bosco Inst of Tech SB	82	Rizvi College Of Engineering
17	Dwarkadas J Sanghvi College Of Engineering SB	83	Rungta College Of Engineering & Tech SB
18	Fr Conceicao Rodrigues College of Engineering SB	84	Rungta Group of Colleges SB
19	Fr Conceicao Rodrigues Inst of Tech SB	85	S. B. Jain Institute of Tech Nagpur SB
20	G H Raisoni College of Engineering SB	86	SND Coll of Eng and Res Center Babhulgaon SB
21	Goa College of Engineering SB	87	SOET, ITM University Gwalior, SB
22	Godavari College of Engineering - Jalgaon SB	88	SSBT College of Engrg & Tech SB Jalgaon
23	Government College of Engineering Amravati SB	89	Sagar Institute of Research & Tech SB
24	Gyan Ganga College of Technology SB	90	Sagar Institute of Science & Technology SB
25	Gyan Ganga Inst of Tech & Management - Bhopal SB	91	Sanghvi Institute of Management & Science SB
26	Gyan Ganga Inst of Tech and Management Jabalpur SB	92	Sanjay Education Society'S College Of
27	IES College of Technology - Bhopal SB	93	Sanjiwani Rural Educ Soc College Of Eng
28	IPS Academy - Inst of Eng & Sciences SB	94	Sant Gadge Baba Amravati University SB
29	Indian Inst of Technology- Bombay SB	95	Saraswati College of Engineering SB
30	Inst of Engineering & Tech SB	96	Sardar Patel College Of Engineering
31	Jabalpur Engineering College	97	Shah & Anchor Kutchhi Engrg College
32	Jawahar Education Society'S Ac Patil Col of Engrg	98	Sharadchandra Pawar College of Eng SB
33	Jawaharlal Nehru Engineering College	99	Shri G S Inst Of Tech & Science
34	Jhulelal Institute of Technology, Nagpur SB	100	Shri Ramdeobaba Kamla Nehru Eng College
35	Jspm'S Rajarshi Sharu College of Eng SB	101	Shri Sant Gajanan Maharaj College Of Eng
36	K K Wagh Inst of Engg- Edu & Research SB	102	Shri Shankarachary Inst of Prof Mgmt and Tech SB
37	K.C. College of Engineering SB	103	Shri Vaishnav Inst Of Tech & Sci
38	Kavikulguru Inst of Tech & Sci SB	104	Shrimati Indira Gandhi College Of Eng
39	Kit's College of Engineering SB	105	Sies Graduate School Of Tech Sb
40	Kj Somaiya College of Engineering SB	106	Sinhgad College Of Engineering
41	Kj Somaiya Inst of Engrg & Information Tech SB	107	Sinhgad Institute of Technology-Lonavala SB
42	Konkan Gyanpeeth College of Engr-Karjat SB	108	Sipna's College of Eng & Tech - Amravati SB
43	Lakshmi Narain College Of Tech SB	109	Sri Aurobindo Institute of Technology SB
44	Late G. N. Sapkal College of Engineering, SB	110	St Francis Inst Of Tech - Mt Painsur
45	Lokmanya Tilak College of Engineering SB	111	St John College Of Eng & Tech SB
46	M H Saboo Siddik College Of Engineering SB	112	Sushila Devi Bansal College of Technology SB
47	MBES College of Engineering - Ambajogai SB	113	Swami Vivekanand College of Engineering SB
48	MGM College Of Eng & Tech SB	114	TIT College Bhopal SB
49	Mahakal Institute of Technology SB	115	Technocrats Instute of Tech, Bhopal SB
50	Maharashtra Academy of Engineering SB	116	Terna Engineering College
51	Maharashtra Inst of Tech SB	117	Thadomal Shahani Eng College SB
52	Manoharbai Patel Inst of Eng & Tech, Gondia	118	Thakur College Of Eng & Tech
53	Mansarovar Inst of Science and Tech SB	119	Truba College of Engineering and Technology SB
54	Maulana Azad National Inst of Tech SB	120	Universal College of Engineering, SB
55	Mbm Engineering College/Jodhpur Univ	121	Usha Mittal Inst Of Tech
56	Mct Rajeev Gandhi Inst of Tech SB	122	VES Institute of Technology
57	Medi-Caps Inst of Tech & Mgmt SB	123	Veer mata Jijabai Technical Inst
58	Met's Bhujbal Knowledge City SB	124	Vidarbha Youth Welfare Soc Coll Of Eng Sb
59	Modern Educ Soc College of Engineering SB	125	Vidya Pratishthan's College of Eng - Baramati SB
60	Narsee Monjee Inst of Mgnt/High Studies- Shirpur SB	126	Vidyalankar Inst Of Tech
61	Nashik Dist Maratha Vidya Prasarak Samaj'S C.O.E.	127	Vidyavardhini'S College Of Engrg & Tech Sb
62	National Institute of Technology - Raipur SB	128	Vishwakarma Inst Of Tech
63	National Institute of Technology Goa SB	129	Visvesvaraya Nat'L Institute Of Tech
64	O.P. Jindal Institute Technology SB	130	Watumull Inst Of Elect Eng & Comp Tech
65	Oriental University, Indore SB	131	Xavier Inst Of Engineering
66	P E S Modern College Of Engineering	132	Yeshwantrao Chavan College Of Engineering

- Number of Student Branches formed in the current year

14 New student Branches were formed this year. Many of them got approvals in December, hence their activities will start in 2019.

#### New Student Branch Formation

Some of them got approval later in the year 2018 and they started activity in 2019.

Date	Institute	Location
23 Oct 2019	Indian Institute of Technology	Bhilai
04 Oct 2019	Bhilai Institute of Technology	Durg
02 Oct 2019	Govt College of Engineering	Raipur
30 Sep 2019	Indian Institute of Technology	Indore
21 May 2019	VIT University	Bhopal
12 Apr 2019	IIITM	Gwalior
11 Mar 2019	A P Shah Institute of Tech	Thane
12 Dec 2018	Don Bosco IT	Fatorda
14 Dec 2018	Rajiv Gandhi University	Bhopal
12 Oct 2018	Pimpri Chinchwad COE	Ravet
13 Nov 2018	ISBM	Sus
6 Nov 2018	Sandip University	Nashik

- Section level student activities (student congress, paper and other contests, awards etc)

Number	Date	Event	Description	Attendees
1	Various	ORIENTATION Cum Training SAC Volunteer Training Local Branch Counselor Meets Admin Committee Meets	IEEE ORIENTATION Cum VOLUNTEER TRAINING, Student Branch Operations etc were undertaken jointly with new student branch openings and at some existing branches many times during the year  These were also done in coordination with YP & WIE.	400+
2	18-20 Jan 2019	Bombay Section Students Congress	Bombay Section Congress to promote Leadership, and team bonding, having technical/professional/academic tracks for both students and teachers	375
3	13-09-2019	InOrbit 1.0	Organized at Somaiya Sion by 7 Student branch volunteers across section for Branch Revival/Global Outreach/Mentorship.	125
4	15-09-2019	Phoenix 1.0	Organized at ISBM Sus by 4 Student branch volunteers across section for Branch Revival/Global Outreach/Mentorship.	130
5	07 Oct 2019	Workshop Dr Rita Pujari of NASA NV Space Grant	Opportunities for innovation, Grant Funding, having a longer-term vision and facilitation to reach goals	250+
6	21/9/2019	GABFEST	Joint SB Initiative of R10 SAC Funded for revival and orientation of student branches. Venue- Priyadarshini Institute of Engineering and Technology, Nagpur	250+
7	5/10/2019	Leadership Conclave	Nagpur- IEEE Region 10 funded initiative under Leadership and Member Orientation. Venue- Ramdeobaba College of Engineering, Technology and Management, Nagpur	100

- Number of active Student Branches (Student Branches who have reported required number of meetings during the year)

Over 30-40 branches are very active, another 20 branches have shown revival in activities, we expect a good increase in this number in 2019. However, getting them to report in Vtools is still a challenge, and we now are running campaigns to educate and make them aware of the advantages of Vtools.

- Summary of Student Branch activities (Student Branch wise with attachment table/information)

## B.5 Affinity Group Activities

### WIE

Number	Date	Event	Description	Attendees
1	25-09-2019	STEM Workshop	Nutan Vidyamandir Chembur, to initiate students to STEM and to promote IEEE	60
2	05-10-2019	WIE Meet /Admin Committee meet	To introduce the WIE to branches to motivate to start WIE, and to motivate more events by WIE chapters of various colleges	17
3	23-09-2019	Workshop	Reimagining Teaching and Learning for future, for faculty	20
4	23-09-2019	Workshop	Being Professional – for students	80+

### LMAG

Number	Date	Event	Description	Attendees
1	01 Oct 2019	LMAG Lunch	Invited LM, Fellows and Senior members for lunch and interaction with Dr Rohde, DL and President of Rohde Schwarz, followed by lecture on “5G’	12 + 65
2	16 Oct 2018		Talk by Dr Kazmerski on History of Photovoltaics	60
3	16 Oct 2019		LMAG Dinner	12

### YP

Number	Date	Event	Description	Attendees
1	24-09-2019	Interaction with Startup’s	Jointly done with SP TBI to guide the young Entrepreneurs	45
2	31 Mar 2019	Final Year Student Interaction	Vtools Presentation and continuing membership as YP benefits	78
3	10-11 Jan 2019	TISP	Teacher in Service Program undertaken with Maths Lab Conceptat 2 different locations in Goa State	44

### EAB

Number	Date	Event	Description	Attendees
1	26 to 31 - 05-2019	EAB FDP	Faculty Development Program at NIT Raipur on Innovative Teaching Learning Methodology	35
2	26 to 31 - 05-2019	EAB FDP	Faculty Development Program at VNIT Nagpur on Innovative Teaching Learning Methodology	23

## B.6 Awards & Recognition Activities

- Award constituted by the Section

Outstanding Volunteer Awards

Sponsorship of members and student members to attend various leadership conferences

Scholarships

Members have received various recognitions including travel awards to represent section at R10, PES Conference and Richard E Merwin Scholarship. Members also received certificate of recognition including Gold and Silver for Membership Growth and Retention from 2017 to 2018.

Members have also received grants from IEEE HAC and IEEE New Initiatives for proposals submitted by them.

Number	Date	Event	Description	Attendees
1		Hemant Sonawala Award	Approx USD 1500 Dollars for Needy girl engineering student with active IEEE record.	
2		XTREME AWARD	Over USD 1500 dollars were budgeted for teams that came in first 100 ranking in country	
3		Needy Girls Scholarship	Approx USD 750 Dollars total for Needy girl engineering student with active IEEE record.	
4		WIE Project win award	Awarded to winners of Project competition in international event, approx. USD 150	
5		SWYC Participation	Approx USD 1000 dollars for deserving candidates to participate in SYWC	
6		AISYC Congress Participation Award	Approx USD 500 dollars for deserving candidates to participate in SYWC	

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

- Home Page of the Section (give the URL and how often it is updated)

[www.ieeebombay.org](http://www.ieeebombay.org), updated regularly at least few times in a month.

E-Notices are sent on a fairly regular basis.

- Other means of contacts with Section members including social media
  - Facebook Page
  - Bombay Section Students Network site
  - Section Execom Whatsapp Group
  - Branch Counsellors Whatsapp Group
  - Student Representatives Whatsapp Group.

## B.8 Industry Relations

- Membership growth and retention

This has been covered in Membership Development and Professional Development Section.

- Activities for/with industrial members

Number	Date	Event	Description	Attendees
1	14-07-2018	Meeting with regional members at Nasik	This meeting was with industry and academic members with a view to enhance activities in that region. Two Technical lectures, AI- Right time for industry now? And How to measure a distance less than a hair from far were delivered.	35
2	11-10-2018	Meeting with Regional Members at Goa	This meeting was with industry and academic members with a view to enhance activities in that region.	8

Number	Date	Event	Description	Attendees
1	14 July 2018	Nasik Industry Meet	Technical lectures and Interactions with local industry leaders	50
2	10-11 Aug 2018	AI & ML workshop NITIE	Tutorials and workshops on Ai and ML for students and industry	150
3	14-16 Sep 2018	Building of Moonshot	Engineers Day and IEEE Foundation project on 'Furthering Indian Perception on IEEE'	1000
4	29 & 30 June 2018	Workshop on Machine Learning – Concepts and Applications	These were two day long sessions done for industry one at Azilen Technologies and other at Hotel Novotel, with a view to educate participants with hands on exposure to ML	80

## B.9 Humanitarian Technology Activities

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

Under SIGHT Vidushi Program certain life skills training and job opportunities by teaching Solar lamp assembly, maintenance and repairs were undertaken for ladies of villages. Another program was to teach computer to ladies from villages so that they do not have a challenge in communication with their kids who were becoming computer savvy, nor have any mental roadblock in using that device. This program has been continued.

Also, an effort was made for creating water maps of villages and doing rain water harvesting, however these initiatives were curtailed due to lack of funding.

HAC had provided grant for improving hygiene amongst the tribal ladies in the village of Walvanda and this program was executed successfully.

There have been a couple of initiatives under LoRaWAN, which also have got funding from IEEE Societies

## B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”

### IEEE Day

Number	Date	Event	Description	Attendees
1	04-11 Oct 2018	IEEE Day Celebration	Done at the Newest IEEE branches, and a couple of veteran branches. These events were coordinated by the section in association with each branch.	Over 400 attendees total

### IPR Day function

Number	Date	Event	Description	Attendees
1	26-04-2019	Seminar on IPR and IP Innovation Gallery at RGNIIPM, Nagpur	IPR Awareness talk, commercializing of patents and awards to innovations. Keynote by Dr Padole VNIT and Dnyaneshwar Kamble, IEEE	200

### Engineers Day Event

Number	Date	Event	Description	Attendees
1	08-Sep-2019	Engineers Day Joint Event	Jointly done with IETE this is a half day program of technical talks followed by networking. The Keynote speech on “LoRaWAN” was delivered by Mr	150

			Abhay Phansikar, Chair, IEEE Bombay Section	
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## **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

Hemant Sonawala Scholarship of Approx USD 1500 is given by Hinditron for needy girl engineering student. The section has been associated with various events including Solar Lighting Guinness Record, Building of a Moonshot Program for 3 days, TISP program for Mathematics teaching aid to teachers etc. Since many of these programs were done either in collaboration or IEEE initiatives funded, external sponsorship was not asked for.

### **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
- Benefit to IEEE members (for example discounts, access to technical information etc.)
- Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)

There are various associations already in place with IETE, CSI, PMI, Indo-German Chamber of Commerce etc, Bombay Management Association. New relationships were not established this year. IEEE Bombay Section is a Knowledge Partner or Technical Partner and IEEE members routinely get discounts for their events.

### **C3. Collaboration with other IEEE Sections**

- Support extended to neighboring Sections
- Joint activities with any other Section

A few DL Lectures were organized jointly with other sections in India, however no significant joint activities were done. There have been such activities initiated and are being executed in 2019.

### **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

Subsections and Society chapters have been provided good support in terms of doing events in their sub sections, funding of events, scholarships and travel grants to subsection members. The subsections have been quite active and have shown growth in memberships as well as are vibrant.

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

- 1 SKEP (Skills and Knowledge Enhancement Program) series of workshops/talks.
- 2 Formation of a Student Activities Core team spanning across the region. This has created a push amongst students to be active and also participate in more technical as well as leadership events.
- 3 Handing over of administrative affairs to new committee was becoming a challenge due to increased reporting norms at different times and different levels like IEEE R10 & HQ, State and Central Govt. agencies. Creation of Joint Secretary, Joint Treasurer and an Additional Vice-chair helped easy transition as well as timely reporting.



- 4 Leadership statements of Vision/Mission at Annual General Meeting
- 5 Value add to members and professionals through topical Conferences
- 6 Robust Senior Member elevation practices
- 7 Reviving dormant student branches and initiating new branches
- 8 Engaging with Students, Student Branches and Counsellors
- 9 Active website, regular mailers on forthcoming events
- 10 Delivering value to members by providing fair opportunities to attend key IEEE events
- 11 Created a section video for use during IEEE functions.
- 12 Improved governance by
  - ✧ Succession planning incorporated in the formation of the Executive Committee
  - ✧ Adopting smooth hand-over processes

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

The focus on electronics engineering at entry level is going down in this region and many colleges are struggling. The admissions to EXTC and Electronics branches have been low and many colleges are facing closure of these departments. IEEE Bombay Section is now promoting Startup, Entrepreneurships etc and making that aware to school level students, which may help membership in the longer run.

The transition from a Graduate Student Member to YP results in a jump of membership fees by 300% (27 USD to 81). We see a significant drop of members at this level. Since this is also the first year of their job, and students are going into a new town/setup, they are reluctant to spend these kinds of fees. A first year reduced YP fee structure may help retention.

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

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

Bombay sections has granted special budget for TISP to enhance Mathematics teaching at school level. 3 such day long workshops have been held, and many more will be undertaken in 2020. This is in continuation of work done in 2018

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

#### **VISION**

- Be the most preferred Technical and Professional Association for individuals in Industry, Academia and Government
- Be the Benchmark among IEEE Sections in India

#### **ACTION PLAN**

- Build on the momentum of the past years
- Firmly establish the new entity (IEEE Mumbai Section Welfare Association) and comply with all statutory obligations
- Operationalize good governance practices and simplify operations
- Enhance value of membership by conducting member development and empowerment programs
- Contribute positively to the communities we operate
- Thought leadership through original contributions in technical and professional areas of impact

#### **4 PILLARS OF ACTION**

##### **Governance & Operations**

- Set up Advisory, Finance and Statutory Compliance Committees
- Establish governance and operations processes
- Leverage website to simplify approvals, interactions
- Member Charter
- Establish registered society Infrastructure

#### Member Development and Empowerment

- To increase number of Volunteers
- Continuous Education and Skill Upgrade
- Technical Engagement, Networking & Exchange Programs
- Replicate programs across the section geography
- Rewards and Recognition
- Develop next-line office bearers, Execom members

#### Relevance to the Community

- Influence Engineering education
- Enhance Industry connect
- Invigorate SIGHT, Affinity Group and all Society Chapter activities
- Student Employability initiatives
- Enhance Faculty Effectiveness
- Drive Industry – Academia collaboration
- Conduct events of Relevance – IBSS 2015, SKEP at more geographies, SKEP targeted at Professional members, IPR workshops

#### Thought Leadership

- Leverage the intellectual capital of the section to Influence policies, standards
- Share Best (Next) practices
- Promote and publicize innovation
- Create an innovation manual
- Enhance Website, Social Media connect

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

The section focused on IPR and Innovation as a theme, along with R2iW (an IEEE New Initiatives funded program) the following activities were undertaken

Smart Campus contest 28 Nov 2018. Prizes were distributed by Germany smart city experts . Event at Hotel Center point.

- Workshop on Intellectual Property Right at RGNIIPM. RGNIIPM is government of India's training institute in IPR. 16<sup>th</sup> Feb 2019
- Inauguration of R2iW Innovation Gallery 8<sup>th</sup> March 2019
- Organized session of Dr.Rita Pujari, Campus Associate Director - NV NASA Space Grant Biology Professor. Event was on 7<sup>th</sup> October 2019
- Participation Nagpur to address 'GHRTBIF Entrepreneurship Summit-2019' on 20<sup>th</sup> September 2019.
- Participation at Engineering Exploration Design Project Exhibition in Rajarambapu Institute of Technology, Islampur- Sangli on 2<sup>nd</sup>, January, 2020

. Lectures at various institutes on IPR

- Panel Discussion and Citizens Participation Recognition Awards 2020, on 5<sup>th</sup> February 2020 in Nagpur. Germany . Award distribution by Hon'able Mayor Nagpur, Shri Sandip Joshi and Lord Mayor of Karlsruhe Dr. Frank Mentrup, in presence of high-level delegation from Karlsruhe(Germany) and other eminent personalities and inventors. <https://timesofindia.indiatimes.com/city/nagpur/experts-share-innovative-ideas-with-citizens-to-make-smart-city/articleshow/73969668.cms>

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

The section is currently vibrant with activities and able to break even at annual level. The section has some savings which can see through for seed funding of events and exigencies. The flagships events or larger conferences done bi-annually do generate revenue for the section. We do not envisage any issues with financial stability or growth challenges due to lack of funds for coming 2-3 years.