



tsdsi NEWSLETTER

October 2018 | Volume 2 | Issue 3

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MESSAGES



From the **CHAIRMAN'S DESK**

Dear Readers,

I am really delighted to note that in the recent past, we have significantly increased our outreach. Several new organizations have joined TSDSI in the last quarter, and many more continue to express their intent to join. We have also forged new partnerships with global SDOs and forums. This is an affirmation to TSDSI's status as India's Telecom SDO, from the Industry and global markets. In addition, the continuous acceptance of TSDSI members' contributions for developing 5G technology standards, at 3GPP and ITU, will ensure that India will be a significant partner in "shaping" future technologies.

It is a proud moment for TSDSI as we publish the CPRI Fronthaul Transport Standard. I congratulate TSDSI members on this milestone achievement. This standard is a representative example of extending global standards to suit specific requirements of India market. As technical activities in the study groups gather momentum due to intense involvement of subject matter experts from member organizations, more standards will be published in the coming days.

Finally, dear members, as the newly elected Governing Council with Prof Bhaskar Ramamurthi as the Chairman and Mr Satish Jamadagni as the Vice Chairman takes charge with effect from the end of this month, I express my heartfelt gratitude to all of you in extending the much needed support in the formative years of TSDSI. I have been associated with TSDSI as its founding member since the beginning. As Vice Chairman for two years and then Chairman for the subsequent two years with dual role as Director General briefly, I have witnessed TSDSI grow from its infancy to a mature organization of global significance. TSDSI has put India on the global telecom standards landscape. This would not have been possible without unconditional and enthusiastic cooperation from all members and the Ministry of Communications. I am also grateful to TSDSI secretariat staff who have provided amazing assistance in discharging my duties.

As I sign off as Chairman, I wish a great success to TSDSI. I am confident that Prof Bhaskar Ramamurthi as Chairman will take it to even greater heights.

Prof. Abhay Karandikar,
Chairman TSDSI

ANNOUNCEMENTS



TSDSI publishes CPRI-Fronthaul Transport Standard

TSDSI transposes 3GPP security specifications to address **Indian Telecom Security Assurance Requirements**

3GPP specifications for **IMT 2000 technologies (ITU-R M.1457)** transposed into TSDSI standards

$\pi/2$ BPSK with spectrum shaping accepted as an optional feature for sub 6 GHz in **TDD bands by 3GPP RAN4**

TSDSI signs MoUs with **ATSC, BIF and CCICI**

MESSAGES



DG SPEAK

Dear Colleagues,

This quarter was witness to a marked upswing in the member engagements as indicated by increased participation in the SG meetings, ease in collection of membership dues and intense involvement in the GC elections process. The key highlights for this quarter are categorised here under the 2018 focus areas and further detailed in the Newsletter:

1. Enhancing Technical Activities:

- **Technical Plenaries (TP):** A very productive and well attended technical plenary was very graciously hosted by Reliance Jio at their luxurious headquarters in Mumbai. The highlight was a visit to the Reliance Experience Centre which transported us into the future. This was preceded by two workshops on Indian Languages support and Information Centric Networks (ICN).
- **SG-Networks:** The focus was on the RIT submission at ITU-R WP5D. Broadband / broadcast convergence and Private Networks were new topics.
- **SG-Solutions and Services:** While the studies on PPDR and Cloud Interoperability were further developed, a new topic on Drones/UAV communications was introduced. With TATA Motors joining the team, Intelligent Transport Systems was identified as another focus area.
- **Transposition:** 1413 3GPP Documents were accepted at ITU-R WP5D as a part of M.1457 submissions. TSDSI thus became a transposing organisation at ITU alongside other SDOs. M.2012 transpositions have to be initiated.
- **Consultations:** Several members of TSDSI took leadership roles in the development of the report from the 5G High Level Forum. They have now been inducted into the Steering Committee, Implementation Committee and Task Forces set up for the next phase of activities.

2. Improving Impact in Global Forums:

- **3GPP:** Prof Bhaskar Ramamurthi stepped in to provide leadership to the team participating in RAN meetings. Contributions for Release 15 and 16 are the focus. Strong support from DoT is critical. TSDSI has nominated Prof Bhaskar Ramamurthi, our new chair, for the PCG Chair role in 2020.
- **ITU-R WP5D:** TSDSI as a part of India delegation made a submission for revision in IMT2020/VVW process document to enable RIT submission. Strong support from DoT and garnering support from other countries (Africa, Vietnam, Iran, Russia etc.) is the key to success here.

- **oneM2M:** Nominations are invited from IMs for representatives in oneM2M support committees.
- The secretariat is stream-lining working procedures for Global SDO participation. Primary focus is on registration process, preparation meetings, communication and feedback processes.

3. Establishing TSDSI as World Class SDO:

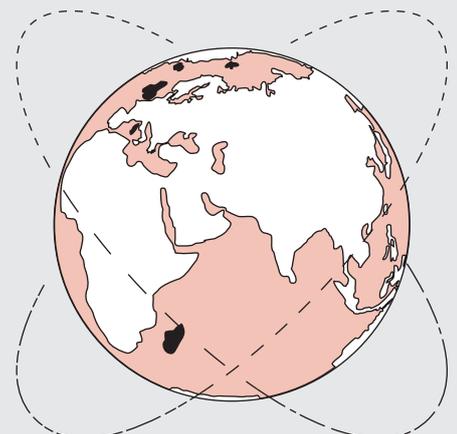
- New Governing Council, led by Prof Bhaskar Ramamurthi & Mr Satish Jamadagni from October 27, 2018
- TEC & TSDSI jointly streamlining standardisation framework, with focus on participation at ITU.
- Anurag Vibhuti joined as Executive Director - Operations, Outreach and Strategy support. He started with a bang, bringing with him the DoT financial support to TSDSI.

The sphere of influence of TSDSI is expanding locally and globally. The addition of 14 new members in this year speaks for itself. We were an extremely busy and sought-after delegation at the ITU-R WP5D and 3GPP PCG/OP meetings in Japan this month. TSDSI is definitely a "HAPPENING PLACE", thanks to the hard work of our members and the secretariat.

Finally, I would like to draw your attention to the upcoming joint workshops with IEEE (October 26, 2018 in Delhi) and ATSC (November 14 & 15, 2018 in Delhi). Come and join the fun.

Regards

Pamela Kumar,
Director General





Standardization Activities

CPRI Fronthaul Transport Standard

TSDSI has released standard TSDSI STD 5000 V1.0.0 (<https://bit.ly/2QDf99f>) on CPRI Fronthaul Transport. This standard addresses the mapping/demapping of CPRI and/or GE from Base Band Unit (BBU) or Radio Equipment Control (REC) to the Remote Radio Head or Radio Equipment that are connected over optical transport network (OTN) for further communication over optical fibre cable (OFC). This is the first standard developed by TSDSI members and is based on the CPRI defined by the CPRI consortium (<http://www.cpri.info/spec.html>) and ITU-T G.709 OTN (Optical Transport Network), ITU-T G. Sup 56 for optical fibre based REC to RE connectivity.

Study Group-Networks

Further to the submission of initial description template, Study Group-Networks has been actively working on enhancement of 5G specifications of 3GPP for contribution to IMT-2020 as per the timelines of ITU-R. Deliberations on the proposed technical report on 60GHz band for access and backhaul have been completed wherein various contributions relating to deployment scenarios, interference and mitigation measures were intensely debated. Report is expected to be finalised soon.

Transposition of 3GPP Specifications for IMT 2000 Technologies (M.1457): TSDSI has transposed a set of 1413 nos. 3GPP specifications for (ITU-R M.1457) IMT 2000 technologies (<https://tsdsi.in/3gpp/>). These have further been submitted to ITU-R by TSDSI as a GCS proponent for IMT2000 technologies.

New Item Proposals on study of NB-IoT Extension, Broadcast offloading and Private networks have been initiated. These topics will be developed further via email discussion, before converting into appropriate technical activities.

Interested members can contact Mr Satish Jamadagni, Chair-SG Networks to participate in these activities.

Study Group –Services and Solutions

Transposition of 3GPP standards for ITSAR: TSDSI has transposed a set of 142 nos. 3GPP specifications related to security aspects (<https://bit.ly/2zUxnxt>) to cater to Indian Telecom Security Requirements (ITSAR).

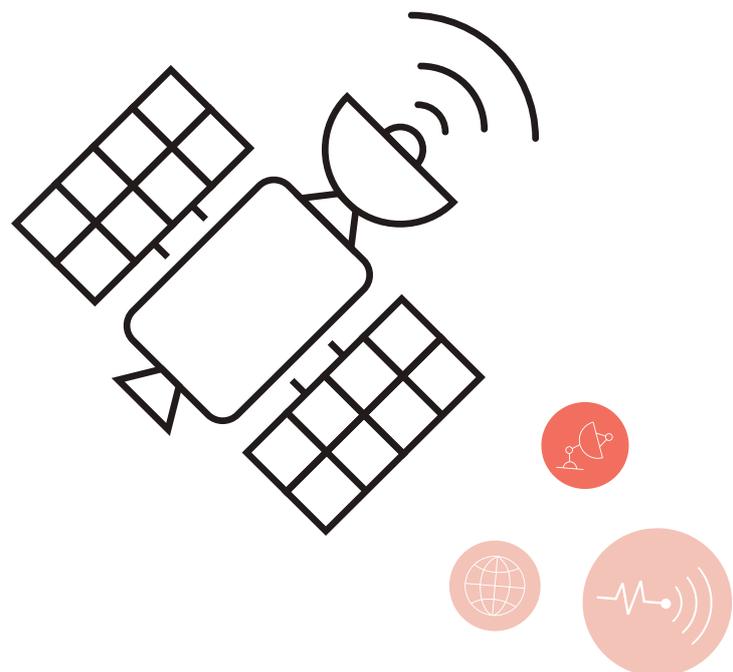
Standard for Cloud Interoperability and Portability: TSDSI has been mandated by DoT and TRAI to develop Standards for Cloud Interoperability and Portability in India. Work on this item was initiated in January 2018. The overall initial scope of the work item for developing the standards is to identify techniques targeting Cloud Computing aspects covering data protection/data security, secure transfer of data between jurisdictions, lawful interception of data, Interoperability/ Interworking of cloud etc.

TSDSI study group members along with organizations like CCICI besides NASCOM, CDAC are working on multi-phased study and work items as per an approach and workflow arrived at, after intense team discussions, meetings, workshops, contributions etc. To develop the desired standards through definition of use cases in the Indian context, review of existing Interoperability/Portability Standards and work being done globally, gap analysis in the Indian context, creation of India-specific standards following the gap analysis, defining test cases & test bed architecture, submission of recommendations to DoT/TRAI.

The work is being done in multiple phases based on learnings, study and analysis of all items of the workflow by the technical teams for creation of reports and standards progressively. The first phase report defining the workflow, approach, studies and the work done so far has been prepared.

PPDR: A survey based on a structured questionnaire to elicit information on PPDR covering usage/deployment scenarios, available and upcoming technologies /evolving architectures, scaling and interworking of platforms, evolving standards and systems etc, approved by Study Group – Services and Solutions, is being administered. Findings from this survey will channelize the formal technical study item on PPDR. An email discussion on TRAI recommendations (SI58 - <https://bit.ly/2ILULjA>) published in: “Next Generation Public Protection and Disaster Relief (PPDR) communication networks” (refer SWIP 576 - <https://bit.ly/2A24tLX>) has been initiated.

A new Study Item (SI62 - <https://bit.ly/2OJQFOU>) on Study of UAV/Drone Communication Services has been approved. A workshop to elaborate the use cases, study regulatory aspects and global standard developments around drone operation, demonstration/PoC for UAV/Drone Communication Services is being planned.



ACTIVITIES



Snapshot of Technical Activities:

Group Name	SG-Networks	SG-Services & Solutions
Total No. of Technical Reports Released	-	65
No. of Technical Reports in Draft	2	1
Total no. of Standards Released	1708	112
No. of Standards in Draft	-	-

List of Technical Meetings held in this period:

Group	SG- Networks (SGN)	SG-Services and Solutions (SGSS)
Meeting	SGN F2F (in person)	SGSS F2F (in person)
Date	September 6-7, 2018	September 6-7, 2018
Venue	RJIO, Mumbai	RJIO, Mumbai
Attendance	15 member organizations (33 representatives) and 2 observers	12 member organizations (32 representatives) and 5 observers

TSDSI welcomes volunteering offers from members and organizations to organise discussion workshops and knowledge sharing webinars on any active study or work items listed on our website. Please contact secretariat@tsdsi.in for the same.

Pre-standardization Activities

Standardization Roadmap

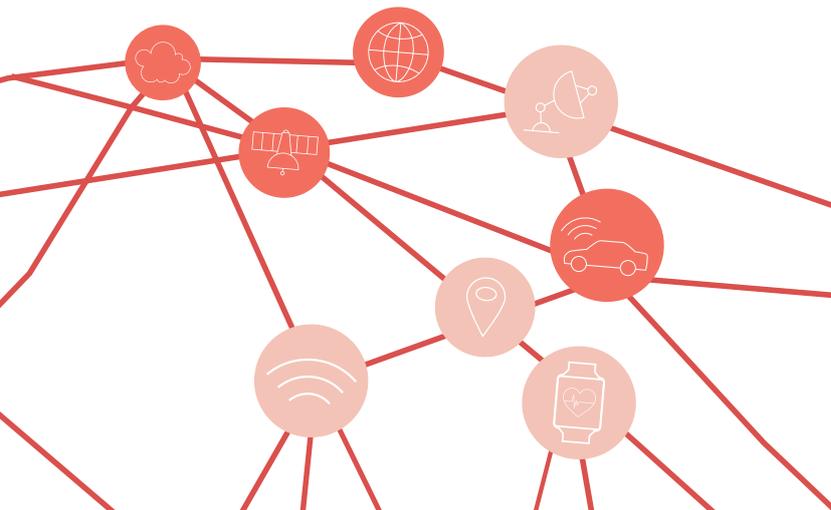
TSDSI's Standardization Roadmap was approved by the Governing Council in its 21st meeting on July 16, 2018. Technical activities on Roadmap topics are being taken up through specific workshops and study/work items.

Technical Workshops

IoT Security Workshop: A workshop on Security in IoT was conducted on July 16, 2018 at Bharti School of Telecom Management, IIT Delhi. In the session on Global Security Standardization landscape, updates from 3GPP SA3, oneM2M, ITU-T SG17, ETSI were highly appreciated by the participants. Roadmap Item on Unified Authentication Framework, Case studies and update on Security Assurance activities were other topics of discussion. The workshop was well attended by 26 Industry experts and 13 student researchers. The specific topics of mobile device security, Unified Authentication Framework and Application Security are planned to be taken up for further deliberations through email discussions and workshops in the Study Group- Services and Solutions.



A workshop on Indian Languages support in Devices and User Equipment and on Information Centric Networking was conducted on September 5, 2018 at Reliance JIO, Mumbai. The session on Indian Language support covered Indic Languages Initiatives, Industry Perspective, Case studies and typical Use Cases from Public Warning Systems applications. Representatives from 8 member organisation and 2 invited experts participated in the workshop. It has been decided to conduct further studies on Indic Languages (IL) support in FM-Radio Data Systems (FM-RDS) for Public Warning Systems, and investigate use cases from Banking, Finance, Railways sectors.



ACTIVITIES



The session on Information Centric Networking (ICN), TSDSI roadmap Item, covered discussions on ICN use cases in the Indian context. A white paper on the topic was initiated at the workshop. Member experts interested in contributing to this may reach out to Mr Akhilesh Shrivastava, Chair – SG Services and Solutions.



Suggestions and volunteering offer for workshops on technical topics can be sent to secretariat@tsdsi.in.

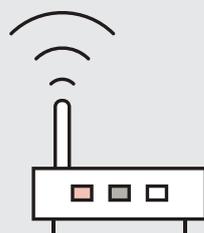
A presentation on IoT/M2M based Smart Campus initiatives of Punjab University, Chandigarh was made by Prof. Harish, UIET Chandigarh, invited guest at the DG Plenary session held at Reliance JIO, Mumbai on September 6, 2018. ICT initiatives of TATA MOTORS was presented by Mr Ranjit Ballal, invited guest at this session.

TSDSI Members contributed in various areas of the report of the 5G High Level Forum (a multi-ministry initiative of the Govt. of India), on policy recommendations for enabling deployment, promoting creation of Indigenous IP and manufacturing capabilities.

India-EU Partnership Project (PP) on Cooperation for ICT Standardization

The India EU Partnership Project Steering Committee has approved a proposal to incubate Centres of Excellence (CoE) in the areas of 5G, M2M, NFV/SDN and Security. The CoEs are intended to propagate further, resources generated through the project so far, like, MOOC, hackathon materials, technical content etc. They will act as hubs to promote awareness of standards and act as a resource centre for research related activities, education tools in the areas of M2M, 5G and Security.

The project conducted a webinar on "Testing framework for IoT Privacy" on September 20, 2018. Recording of the webinar can be viewed at <https://bit.ly/2Bl3Z16>.



PARTNER ACTIVITIES



ITU

TSDSI has already submitted an initial description of candidate RIT/SRIT for IMT2020 to ITU-R. Further development of specifications is being championed by the Study Group – Networks.

3GPP

Participation level of representatives from TSDSI member organizations in 3GPP meetings in this period is as follows:

Group	No. of Meetings	No. of Participants
RAN	10	82
SA	10	30
CT	6	27

TSDSI delegation comprising Mr A K Balani, MeitY, Prof. Kiran Kuchi, IIT Hyderabad, Mr Suresh Chitturi, Samsung R&D Institute India, and Mr A K Mittal, Advisor–Networks TSDSI, participated in the 3GPP RAN/CT/SA Plenary meeting #81 in Gold Coast, Australia, from September 10-14, 2018.

A contribution on pi/2 BPSK with spectrum shaping, championed by TSDSI member, IIT Hyderabad, has been accepted as an optional feature for sub 6 GHz in TDD bands in 3GPP RAN4 WG. This has been referred to RAN2 for taking further action.

Next PCG/OP meetings (PCG#41/OP#40) is scheduled in Tokyo on October 18-19, 2018.

A workshop on 3GPP submission towards IMT2020 is being organised by 3GPP in Brussels on October 24-25, 2018.

Meetings of 3GPP being hosted in India, by COAI and IF3 are listed in the Events section.

oneM2M

Ms Bindoo Srivastava, General Manager- MARCOM and International Relations, TSDSI Secretariat, participated in the oneM2M TP#37 meetings and Industry Day in Seoul from September 14-21, 2018. She made a presentation on the "India Smart City Journey" at the Korea Strategic Smart City kick off project, hosted by KETI. Exploring collaboration opportunities between this project and India smart cities stakeholders have been initiated. New technical activities in oneM2M on Use cases for Railways, ITS, Smart Cities, Public Warning Systems have been identified for involving TSDSI members.

The next oneM2M TP meeting is scheduled in Kanazawa, Japan on December 3-7, 2018. This will include an Industry Day on December 5, 2018.

PARTNER ACTIVITIES

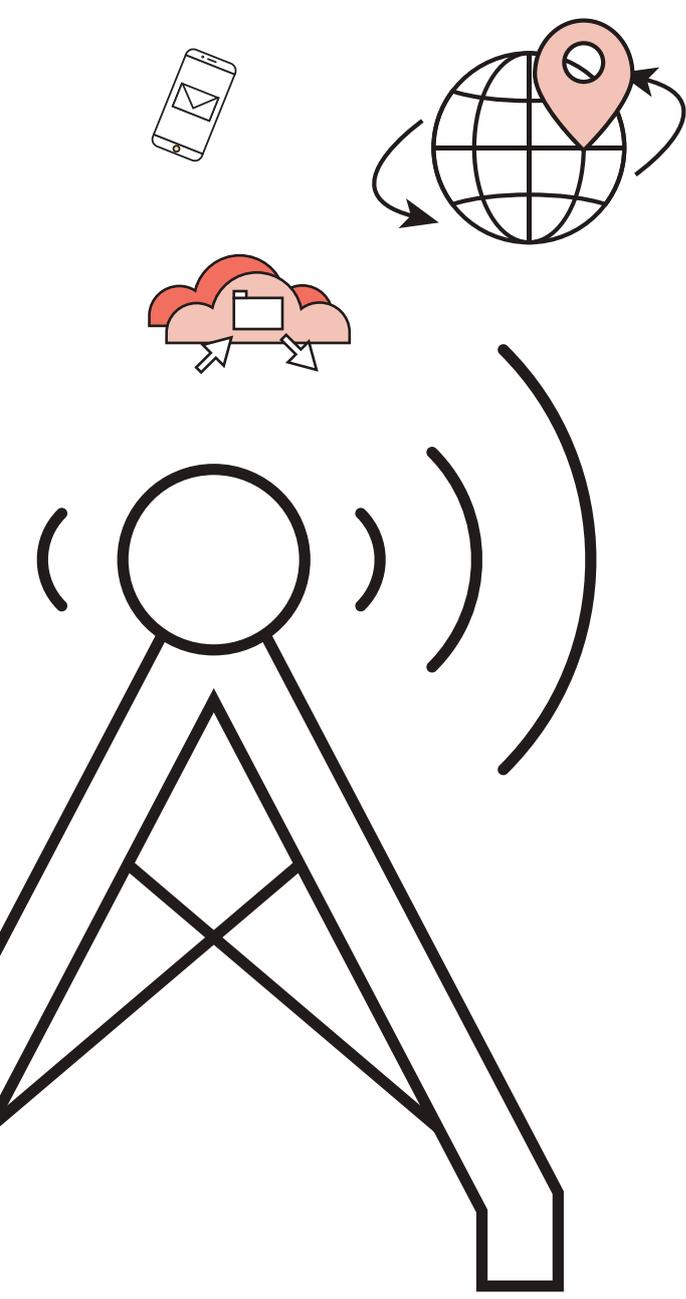


Other Affiliations

TSDSI has inked MoUs with Advanced Television Systems Committee (ATSC www.atsc.org), Broadband India Forum (BIF www.broadbandindiaforum.com) and Cloud Computing Innovation Council of India (CCICI <https://ccici.in/>)

Liaison Statements:

Various Liaisons (LS) of TSDSI can be viewed at <https://bit.ly/2pKTm44>.



UPDATES



**TSDSI
GENERAL UPDATES**

Finances

Mr S K Gupta, as the Chair of the Finance Sub-committee is guiding the development of a framework to achieve self-reliance in the next 4 to 6 years and also improving the budget forecasting methodology.

In response to the guidance from DoT Secretary, a framework for providing funding support to SME's and technical experts to enable more effective and consistent participation in Global SDOs has been proposed.

IT and Website

New Members' portal has been launched. Transition to "tsdsi.in" domain is being completed. Suggestions on the website and/or portal can be sent to secretariat@tsdsi.in.

Outreach and Engagements

Ms Pamela Kumar, Director General, made a presentation at the IEEE 5G World in Santa Clara, USA on July 9, 2018 on "Unique opportunities and challenges of 5G deployment in India: the role of Standardisation".



TSDSI partnered with NOKIA, TSDSI member, to conduct a seminar on "PATH TO 5G - ESSENTIAL BUILDING BLOCKS FOR 5G INDIA 2020" at the Nokia Bangalore Technology centre on July 23, 2018. This seminar is part of TSDSI Technology Dialog series, an initiative to promote dialog between stakeholders from the industry, academia, R&D, Govt. and start-ups on select topics of significance to the Indian telecom ecosystem.

UPDATES



Prof. Devendra Jalihal, IIT Madras, participated in a panel discussion on Indian Language support on mobile handsets at the FICCI-ILIA BHASHANTARA Symposium for Indian Languages on July 30, 2018.



Mr A K Mittal, Advisor-Networks, TSDSI, spoke at the meeting of the India-Japan ICT Joint Working Group on August 7, 2018 on "Cooperation opportunities for India and Japan in ICT standards development activities". Mr Vijay Madan, Advisor and Mentor, Services and Solutions, TSDSI spoke on behalf of TSDSI on August 8, 2018 at the workshop on Disaster Management held as part of the same JWG meeting.

Ms Pamela Kumar, Director General TSDSI, made a keynote speech at the "IEEE Women in Leadership" Conference in Kochi on September 8, 2018, where she emphasised on the opportunity for India in development of standards for 5G and beyond technologies.

Prof. Abhay Karandikar Chairman, TSDSI & Director, IIT Kanpur participated in the Panel discussion on India's 5G Roadmap at the Economic Times 5G Congress 2018 conference in New Delhi on September 19, 2018.



A leadership meeting was held between TSDSI and Huawei on September 19, 2018, to discuss modalities for deeper engagement of Huawei experts in TSDSI activities. It was decided that Huawei and TSDSI will work closely on vertical industry engagement for development of a strong 5G ecosystem in India, including use cases and testbeds etc.



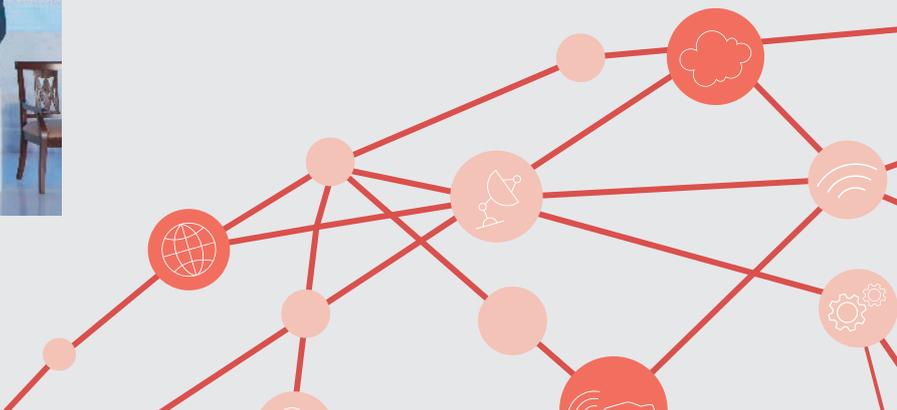
In this period, as a part of the Member Engagement Initiative, Ms Pamela Kumar, Director General, TSDSI visited Saankhya Labs and Microsoft. If you are interested in getting an outreach workshop conducted for your organization or your industry segment, please contact secretariat@tsdsi.in.

Operational Matters

The term of the current Governing Council expires in October 2018. Elections to the 3rd Governing Council have been scheduled on October 4-5, 2018.

Strategy Initiatives

Now that the Technical Plenary and GC/GB meetings processes have been streamlined, the secretariat is now focusing on the processes associated with Global SDO meetings. The registration process has been defined and a form has been created on the website. Preparatory meetings with delegates and IMs are being regularised. Communication mechanisms, trip report templates and feedback forms have also been piloted.





TSDSI Meetings

One (1) meeting each of the Technical groups was held in the reporting period, detailed elsewhere in this report. The Technical Plenary of both study groups and a technical workshop is planned to be held on December 5-7, 2018 in Bengaluru. Formal notice for these meetings shall be issued in due course of time.

TSDSI and IEEE are partnering with IMC 2018 to conduct a 5G Technology workshop, as a parallel session in the IMC, on October 26, 2018. Visit (<https://bit.ly/2pKtSy>) for details and registration.

TSDSI and ATSC are jointly organising a Convergence in Broadcast and Broadband conference in New Delhi on November 14-15, 2018. Contact convergence-conf@tsdsi.in for participating in this conference.

oneM2M Activities in India

The next oneM2M tutorial and hackathon events are planned in IIIT Hyderabad and IIT Kanpur from October 27-30, 2018. Please visit (<https://bit.ly/2Cxe4N1>) for more details.

3GPP Activities in India

The following 3GPP meetings are being organised in India, under the aegis of COAI and IF3: 3GPP SA5 and RAN5 in Kochi and Jaipur from October 8-12, 2018; 3GPP SA4 in Kochi from October 15-19, 2018.

COAI, IF3 and TSDSI are in talks to bring more such meetings to India, so as to facilitate increased levels of participation from Indian experts.

TSDSI MEMBERSHIP UPDATE

TSDSI welcomes Bharat Electronics Ltd. (BEL), ERNET, Indian Institute of Technology Kharagpur, Syniverse Technologies Services India Pvt Ltd., and WiSig as corporate members and One Media 3.0 LLC as Associate Member.

ERNET (www.eis.ernet.in), a society under MeitY, practically brought the Internet to India and have built up national capabilities in the area of net-working, especially in protocol software engineering.

Bharat Electronics Limited (BEL), (<http://bel-india.in/>), an Indian Public Sector Unit, was established to meet the specialized electronic equipment requirements of the Indian Defence Services including defence communications. While this remains the primary focus of BEL, it also has a significant presence in the civilian telecom and broadcast sectors. In recent times, BEL has developed new products and technologies like software defined radios, next generation bulk-encryptor and high data tactical radios.

IIT Kharagpur (www.iitkgp.ac.in/), the first IIT of India, is a pioneer in R&D in the telecommunications field in India. The faculty and research scholars at IIT Kharagpur are involved in cutting edge research in the areas of signal processing to communication networks.

Syniverse Technologies Services India Pvt Ltd (www.syniverse.com/), intends to contribute to development of standards for 5G technologies and the evolving ecosystem that will support the connected society of the future.

WiSig Networks (www.wisig.com/) is a leading Indian startup engaged in the development of 5G radio products and solutions. WiSig's fast-growing team of 40+ engineers are based out of IIT Hyderabad incubator.

TSDSI member list can be viewed here
https://tsdsi.in/present_members/.

To apply for TSDSI membership, please visit
<https://tsdsi.in/membership/>.



ABOUT TSDSI

Telecommunications Standards Development Society, India (TSDSI), aims at developing and promoting India-specific requirements, standardizing solutions for meeting these requirements and contributing these to international standards, contributing to global standardization in the field of telecommunications, maintaining the technical standards and other deliverables of the organization, safe-guarding the related IPR, helping create manufacturing expertise in the country, providing leadership to the developing countries (such as in South Asia, South East Asia, Africa, Middle East, etc.) in terms of their telecommunications-related standardization needs.

TSDSI is recognised by Department of Telecommunications as India's Telecom Standards Development Organisation (SDO).

TSDSI is registered as a Society under the Societies Registration Act (Act XXI of 1860).