SESEI

Seconded European Standardization Expert in India

Quarterly Report No. 7
Standards, Policy and Regulation
('Jan – March' 2021)

SESEI IV– Dinesh Chand Sharma

1.   Executive Summary

The quarterly report no 07 is covering period from January 2021 to March 2021 and is presented for you perusal and information. Starting January 2021, India started one of the biggest vaccination inoculation programs in the world. However, beginning April, India encountered the second wave of Covid – 19 virus attack, which caused a steep increase in the number of cases and forced most of Indian states to impose lockdown.

The current and sharp rise in COVID-19 cases in India is proving to be an immediate threat to India's FY22 growth prospects. In the first week of April 2021, both the RBI (Reserve Bank of India) and the IMF (International Monetary Fund) provided their latest assessments on India's growth prospects for FY22, and RBI has pegged India's real GDP growth at 10.5% whereas the IMF has revised its earlier forecast upwards, pegging India's growth at 12.5%, which is 2% points higher than the RBI's forecast. The RBI may be concerned relatively more with the adverse impact of the second COVID-19 wave, which is sweeping almost the whole of India at present. India's projected growth of 12.5% in FY22 is noticeably higher than other major economies of the world, with China at the second position estimated to show a growth rate of 8.4%. These growth projections may come under severe challenge if the current second wave of COVID-19 is not brought under control quickly. Much would depend on the pace at which India's population at large, gets vaccinated.

Another important development worth mentioning is that after a hiatus of eight years, trade talks between India and the EU+27-member grouping will "resume" for the conclusion of a 'Free Trade Agreement' (FTA) between the two sides. The leaders have agreed to launch negotiations on three agreements - on trade, investment protection and geographical indications. This is a major step as EU is one of India's largest trading partners and one of India's largest foreign investors.

The Ministry of Consumer Affairs, Food and Public Distribution has stated that the strength and character of a nation are often exemplified by the standards it sets for the quality of its products and services and it is time for India to settle for nothing less than the best. The minister also reiterated on the need for BIS to explore international partnerships and associations to achieve synergy in the field.

Bureau of Indian Standards (BIS), National Standard body, has brought out 'BIS Talks' Film's series on standardization in different technology sectors to spread awareness about the benefits of standardization and status of its standardisation activities among various stakeholders such as industry, academia, research & development institutions, Govt. Bodies, laboratories etc.

In the Electrical and Consumer electronics segment, India is striving and taking all necessary action in achieving its climate goals well before the target date as it switches over to energy-efficient mediums and uses waste to generate clean energy. India's goal of doubling renewable power by next year is getting a boost from international investors who see the massive market's potential outweighing the significant risks.

It is also very interesting to note that Narrow Band-Internet of Things (NB-IoT) technology has been introduced by Tata Power Delhi Distribution Ltd. for its smart meters. NB-IoT is a new and cost-effective technology in 4G/5G spectrum with fast deployment quality.

The production linked Scheme (PLI) has been launched across many sectors. The primary motive to encourage indigenous manufacturing and enhance uptake of Indian made products is at the core of this scheme. As per Govt. plans in Electronics and Telecom sector, this is expected to create a massive opportunity for foreign investments.

India Urban Data Exchange (IUDX), SmartCode, Smart Cities 2.0 website, and Geospatial Management Information System (GMIS) were also launched during this period. India Urban Data Exchange (IUDX) Program toward building an Open-Source platform aims to facilitate secure, authenticated, and managed exchange of data amongst various data sources and consumers. We are pleased to inform that the IUDX Program has included ETSI's NGSI-LD Application Programming Interfaces (API) specifications for its resource server.

Telecom Engineering centre also approached ETSI to seek support and cooperation on developing the right ecosystem for oneM2M testing in India. India having adopted OneM2M specifications as national standards for IoT, this is extremely important for the success of oneM2M. SESEI expert is working closely with TEC to discuss about possible opportunities to partner with ETSI/oneM2M for setting up a robust testing and interoperability set up in India.

In the Automotive sector the government is stressing upon shift towards a completely indigenous battery technology in the coming years, which could be metal-air, metal-ion, and other potential technologies hence plans are put in the R&D pipeline.

In this quarterly report, we also provide details of the various notifications issued by the Ministries concerning priority sectors. As always, we have also provided details of the various meeting, queries and events addressed and participated by SESEI expert.

List of draft standards released by Indian Standards organizations during this quarter is also available as Annexure-1 and detailed activity tracker including list of queries, events and meetings as "Annexure -2 to this quarterly report.

I would like to conclude this report with thanking all the project partners for their consistent support and guidance during the trying times of the pandemic to ensure attainment of Project activities in line with the timelines set.

Happy reading!!!

Dinesh Chand Sharma
(Seconded European Standardization Expert in India)

2. Key Meetings, Event Participation and Queries

In this section, we are providing you with a snapshot of various activities performed by the SESEI expert during the period starting 1st January till 31st March 2021. All physical meetings, events and conferences have been altered into virtual / online mode. Complying with the lockdown guidelines as laid down by the National advisory, SESEI and Project team has been working online to meet the Project deliverables. A quick dashboard of the activity summary is provided below:

Sr. No.	Description	Total Until now	In Last quarter
1	External Meetings	213	38
2	Internal Meetings	60	07
3	Events/Seminar/Workshop/Roundtable	215	41
	Total	**488**	**86**
4	No of Queries	74	8

Detail of few key meetings and event/workshop participation are briefly summarized below and for more information on these key meetings, events/workshop participations and list of queries addressed, please refer Activity Tracker report submitted as "Annexure -2_Activity Tracker.

Key Meetings: Following are the list of key meetings, SESEI expert addressed during the last quarter.

Meetings with BIS:

Generic:

- **SESEI meeting with Head of IRD, BIS** to discuss Status of MoU, EN-81 License Agreement, and other activities.
- **SESEI organized a meeting b/w CEN CENELEC and BIS official** to boost CEN & CENELEC cooperation with BIS.
- **BIS organized a meeting with all relevant Industry association members of BIS** to enhance the synergy between the Industry associations and various technical departments of BIS.

ICT:

- **2nd and 3rd Meeting of Active Assisted Living Sub-Committee, LITD 35:** This Sectional committee, LITD 35 AAL has been constituted to mirror the work of IEC SyC Active Assisted Living to address India specific requirements in the standardization activities of IEC SyC Active Assisted Living; also identify the Standardization, need at the national level, and propose the same to the Sectional committee.

Electrical Equipment including Consumer Electronics:

- **1st meeting of LITD 36/P1 Panel responsible for Consumer Electronics items** to review the old Indian Standards with respect to the applicability of the Standard to the present day and submit the final recommendation to LITD 36 as to whether the Standards to be re-affirmed, to be revised or to be withdrawn.

- **10th meeting of Interconnection and Information exchange among IT equipment and systems Sectional Committee, LITD 13 of BIS** in joint session with 11th meeting of panel for mobile phone LITD 13/ P1.
- **17th meeting of LITD 10 'Power System Control and Associated Communications'**

Services:

- **Meeting of Sectional Committee SSD-II 10-IT & IT enabled Services**: BIS organized a panel meeting of SSD 10/P-2 of IT and ITes to discuss the progress of work assigned to panels (SSD 10/P-1 & SSD 10/P-2) and areas and subjects for standardization recommended by the Panel1 of the committee.

Meetings with TEC/ DoT and other Govt. Bodies

ICT:

- **Virtual Meeting of the Consultative Committee, formed for adoption of oneM2M Rel2 specifications as National Standards:** In India, oneM2M Rel2 specifications (transposed by TSDSI) have been adopted as National standards by TEC. As a part of post adoption activities, the next step in this direction is to start working on the recommendations, as listed in the report of Consultative Committee (CC), finalized in Dec 2019. In this regard, a virtual meeting of CC was organized by TEC to discuss the future course of action on Recommendations.
- **Periodic meetings for finalizing report on "IoT / ICT standards for Smart cities":** TEC is in the process of preparing report for finalizing ICT standards for Smart Cities. SESEI has provided inputs on "Policy initiatives and standardization work around smart cities in Europe", which is included in the report.
- **Periodic meetings of WG on "Security by design principle and National Trust Center on IoT"** in **TEC** to discuss, contribute and finalize the document. SESEI has provided inputs on ETSI EN 303 645
- **Periodic meetings of TEC WG on Future Communication Technologies in IoT domain:** WG members are currently in the process of drafting version 2 of the document on the Future technology. SESEI has promoted ETSI work around e-Health, Medical Devices, Smart Body Area Networks and Smart Appliances.
- **Presentation on oneM2M Release 3 specifications by TSDSI:** a presentation on oneM2M Rel 3 specifications was scheduled by TSDSI for the members of Consultative Committee (CC) and Telecom Standards Advisory Committee (TSAC).
- **Meeting between officers from TEC and oneM2M & ETSI representatives on "Conformance testing for oneM2M specifications":** TEC approached ETSI to collaboration on developing the right ecosystem for oneM2M testing. India having adopted OneM2M specifications as national standards for IoT, this is extremely important for the success of oneM2M.
- **ETSI and OneM2M expressed their full support to engage with TEC in this venture, the ETSI Centre for Testing and Interoperability.**
- **Virtual meeting of NWG-20 for finalizing contributions for ITU-T SG-20 meeting:** TEC is participating and submitting contributions in ITU-T SG-20 from around last four-five years. In this period, two documents- Y Suppl.53 (having five IoT use cases from India and one from Egypt) and Y Suppl.56 (having smart city use cases from Japan, Korea, UK and India), having significant contributions from India, have been agreed / approved as ITU Recommendations.

- **TEC meeting with ETSI officials/SESEI expert** to discuss about possible opportunities to partner with ETSI for setting up a robust testing and interoperability set up in India.

Meetings with EU delegates, EU project officers & officials from EU delegation in India:

Generic:

- **Meeting with Dr. Sara Zennaro Atre, First Secretary - Trade Section, & Mr. Sunil Kumar from Delegation of the European Union to India** to have a discussion and seek inputs to explore possibilities to enhance cooperation with BIS and get an update on SESEI activities.

ICT:

- Meeting to discuss renewed EU-INDIA ICT Project deliverables
- Con. call meeting with Ms. Laure Pourcin to discuss update on the interviews, speakers / content for preparation of the video on 5G technologies and the opportunity it creates for the India in various sectors.
- **SESEI meeting with Indico Project**: Indico Project organized a meeting to discuss actions to support oneM2M implementations in India.

Meetings with Industry & Associations:

ICT:

- **IET - Future Tech Panel meeting to discuss Whitepaper by Cybersecurity working group on Future Proofing Standards**: SESEI is the Chairman of the Standards Legal and Regulatory Working Group of IET- Future Tech Panel. A meeting was requested with him to discuss the document prepared by the Cyber Security Working Group.
- **Meeting to discuss cooperation between IET and EU Project Indico for carrying our Webinar in collaboration:** During the call, discussion carried out on a series of topics under 5G, and beyond which includes vertical applications like 5G in Automotive, ITS, Traffic management & e-governance, Using DoT use cases identified from the 5G hackathon/s.
- **Broadband India Forum** organised meeting to discuss preparation / organisation of the Global Accessibility Awareness Day, GAAD 2021: SESEI, Co-Chair of BIF's PwD Committee, will take a lead to organise GAAD 2021.
- **EBG Telecom sector committee meeting**: EBG Telecom sector committee organized a meeting committee for an open discussion and suggestion for the future and engagement with European Business Group. SESEI expert has been nominated to Chair the WG on Standards, Technology and Spectrum committee of EBG.
- **First Virtual Meeting of the FICCI National Committee on ICT and Mobile Manufacturing:** The meeting focused on discussions regarding the Mobile Manufacturing sector, followed by discussions on the ICT sector.
- **Meeting with Mr. Subhankar Mitra, Singapore to discuss M2M/IoT activities in India:** Mr. Mitra organized meeting to discuss the status of M2M/IOT rollout in India post pandemic.
- Virtual presentation of the EBG Position Paper 2020 in Brussels organized by EBG.
- Conference call Meeting with Mr. A Rao of Trusted Objects for a discussion on ETSI 303 645 & Secure by Design

- **Meeting b/w SESEI expert and Mr. Anand Prasad, Founder & CEO, wenovator LLC** was about approaching DoT, TEC and COAI. Company of Mr Anand is assigned to carry out a detailed study on Security Standards & Certification scheme in EU and INDIA through Project Indico and SESEI is extending all possible support on this important subject of security to help EU industry in India. SESEI expert also shared the essential requirements for several types of equipment published by TEC.

Meetings with Project Partners:

Generic:

- India: Action Plan - market access meeting organized by CEN-CENELEC.
- SESEI expert organized a meeting with Mr. Xavier Piednoir, Head of External Relations, ETSI to discuss the Interim Report ToC
- **Steering Committee Meeting No. SC#4 of the Project SESEI was held virtually on 12th March 2021:** The important points discussed in the steering Committee meeting were: Status of the action items pending from the previous SC Meetings, Project status, SESEI Expert input, Updates from Partners on other relevant India-related initiatives/activities, Exchange between the Partners and SESEI
- **Steering Committee Meeting: Phase 2 Planning: EU-INDIA ICT Project**: A meeting was requested by Mr. Sachin Gaur of EU-INDIA ICT Project to discuss the key areas of focus for the Project, new deliverables / action items. Discussion on the synergies with Project SESEI and support for the EU-India ICT Project. SESEI provided inputs to the new scope and ToR topics and scope as part of next phase.
- Project India meeting to finalize the draft agenda, draft action plan and the follow up actions.

Electrical Equipment including Consumer Electronics:

- **Meetings to discuss the participation of CEN/CENELEC at India Smart Utility Week (ISUW 2021):** India Smart Grid Forum (ISGF) sough a meeting with SESEI to discuss the participation of CEN/CENELEC at ISUW 2021 and the agenda of the workshop.
- **Meeting with Mr. Mayank Sharma, Standardization Manager for the X-to-Grid innovation domain at Schneider Electric, Grenoble, France:** SESEI expert e-connected with Mr. Sharma to introduce SESEI project and its role in the field of Standardization and related policies in India. Mr. Mayank spoke on behalf of CEN-CENELEC as Smart Grid Expert in EU-INDIA Workshop during ISGU 2021.

Key Event Participations:

Generic:

- **CEN CENELEC organized training on 'European Standards supporting the EU-India Strategic Partnership':** A comprehensive introduction to the CEN and CENELEC Strategy 2030, covering strategic context and drafting and consolidation process, vision and mission, goals, and priorities. In addition, an overview of next steps was presented regarding the new Strategy's implementation and the monitoring and evaluation of progress.

- **10-10 webinar "The CEN and CENELEC Strategy 2030: highlights and implementation"**: CEN CENELEC organized training on 'European Standards supporting the EU-India Strategic Partnership' with the aim to inform attendees on the key priority topics such as Circular economy, Railways, Smart cities, Cybersecurity, Artificial Intelligence, IPR & copyright, communicated in the EU-India.

<u>**ICT:**</u>

- **Webinar and Launch of White Paper on Inclusion of Persons with Disabilities through Information and Communication Technology (ICT):** SESEI is actively promoting adoption of EN 301549 for ICT accessibility for persons with disabilities (PwDs). SESEI expert participates in various forums for engaging.
- <u>**Panel Discussion on "Economics and Markets for Non-Personal Data**</u>": CUTS E-GROUP FORUMS organized a Panel discussion on "Economics and Markets for Non-Personal Data- Issues of Technology, Economy & Policy."
- **"ITU-ETSI-IEEE Joint SDOs Brainstorming Workshop on Testbeds Federations for 5G & Beyond**: Interoperability, Standardization, Reference Model & APIs".
- India-EU ICT Standardization Collaboration Project organized a workshop on India EU ICT Standards Collaboration
- TSDSI organized "5G and Beyond Leadership Summit."
- **Technical workshop on "6G (Beyond 5G)":** TSDSI organized a technical workshop on "6G (Beyond 5G)" to gather more inputs on Study Item on "Use cases, requirements and Technologies towards 6G."
- **BIF organized an Interactive Workshop in association with MoHUA on "Connect India: In-building Solutions":** The objective of the workshop was to try and determine the requisite and prudent actions required to develop a robust digital infrastructure, to facilitate digital inclusion for the people, via efficient connectivity services and 'Broadband for All'.
- **Online Workshop on Visible Light for Broadband Communications by IIIT Delhi:** SESEI participated in the opening / plenary session and give a brief talk about ETSI and 3GPP, ETSI'S Research Strategy, Importance of Standards for R&D Projects activities and Horizon 2020 project on VLC.
- **CUTs international organized a webinar on "privacy in mobile applications "**
- India-EU Partnership Project on Collaboration for ICT Standardisation organized 28th webinar "Internet of Radio Light VLC/mmWave Multicomponent Carrier 5G System Architecture and Results of Measurement Campaign in Building Research Establishment" in the knowledge sharing series.
- **Virtual Presentation of the EBG position Paper 2020 in Brussels**: Position paper consolidated key concerns and market access issues faced by EBG members i.e., European corporates based and active in India.
- **FICCI Masterclass on Blockchain as a Technology and its Impact on Industry**: FICCI in association with Industry partner - Emurgo India, organized a power-packed workshop intended to update on the significance of Blockchain as an extremely disruptive technology and how its adoption in various domains is going to impact businesses and revolutionize it.
- **5G Hackathon - Announcement of Top 100 Use Cases:** During the Virtual India Mobile Congress 5G Hackathon was held to announce the Top 100 use cases.
- **Webinar on 'Artificial Intelligence: Empowering India for the future':** Telecom Committee of PHDCCI organized a webinar on 'Artificial Intelligence: Empowering India for the future

- National Telecommunications Institute for Policy Research, Innovation and Training (NTIPRIT) organized a webinar on "Quality of Service in 5G Network."
- **COAI-GSA-Qualcomm webinar on Device Ecosystem for 5G Spectrum Bands:** The webinar discussed the various aspects of Device Ecosystem for 5G Spectrum Bands in terms of deployment, advancement, readiness, and challenges faced globally as well as in India.
- **2nd Annual FTTH India Congress 2021**: The conference covered all important topics related to Fiber to the Home (FTTH) & Industry senior fraternity from FTTH ecosystem including Government, Operators, and Vendors delivered thoughtful insights during the conference.
- **Virtual Panel Discussion - Personal Data Protection Bill and its Implications:** ICRIER, in collaboration with SKOCH organized a virtual panel discussion titled 'Personal Data Protection Bill and its Implications'. This discussion was a part of the Public Policy Forum at the 70th SKOCH Summit.
- **Online Discussion on the Report by the Committee of Experts on Non-Personal Data Governance Framework:** An interactive stakeholder deliberation was organized by CCAOI, a civil society organization working on digital policy issues, to deliberate on the revised report by the Committee of Experts on Non- Personal Data Governance Framework.

Smart city:

- **Launch of digital initiatives of MoHUA:** Ministry of Housing & Urban Affairs (MoHUA) organized a virtual event to launch of digital initiatives: National Urban Digital Mission (NUDM), India Urban Data eXchange (IUDX), Smart Cities 2.0 Website, Geospatial Management information System (GMIS), and SmartCode.
- **Ideation workshop for Vision 2035 Smart Cities**: Smart Cities Working Group of the IET Future Tech Panel organized an ideation workshop for Vision 2035 Smart Cities
- The Future of Urban Transformation "4th Smart Cities Summit" Virtual Conference, Exhibition & Awards organized by FICCI.

Electrical Equipment including Consumer Electronics:

- **2nd Webinar on "Making India an Electronics Hardware Design Ecosystem" organised by MAIT.**
- **India Smart Utility Week 2021:** CENCENELEC with the support of Project SESEI endorsed the ISUW 2021 and participated in the event. Mr. Mayank Sharma, CEN/ CENELEC was one of the main speakers during the "10th EU - INDIA Smart Grid Workshop" and shared presentation on Smart Grids.
- **ISGF & AWS Webinar on Adoption of Frontier Technologies by DISCOMs: Myths, Challenges & Way Forward:** India Smart Grid Forum in association with Amazon Web Services organised a webinar on the adoption Frontier technologies for the transmission / grid utilities.
- **MAIT Webinar on "Designing electronics for the world in India:** The webinar was conducted to understand the vision of the Government / Ministry of Electronics & IT for promoting the Electronics System Design and Manufacturing (ESDM) sector

Mobility:

- ASSOCHAM INDIA organised a webinar on "Future of Automobiles- Post Pandemic - A roadmap to develop EV Market to boost the economy "

- **FICCI organised the RAIL INDIA FORUM & EXPO 2021: Future of Rail Transport" 3rd edition of Smart Railways Conclave (Virtual):** RAIL INDIA FORUM & EXPO 2021 brought together government & private sector across the railway value chain to explore, learn from global best practices, interact with potential business partners and enter into a constructive dialogue regarding various concerns and opportunities associated with Indian Railways.
- **Smart move challenge's workshop on Building data-powered solutions to achieve sustainable transport: Multi Modal Integration**: The session focused on how innovation and tech-driven solutions can help improve public transport's ridership.

Circular Economy:

- **Aatmnirbhar Bharat - Circular Economy & Energy Efficient Technologies by ASSOCHAM**: ASSOCHAM GEM Green Building Council in association with ISLE India's Premier Lighting Association for professionals presented a webinar on the topic "Aatmnirbhar Bharat - Circular Economy & Energy Efficient Technologies" to discuss various technologies and solution with a greater focus towards the building/construction.

Key Queries addressed:

Generic:

- Provided updates on Market Surveillance: Bureau of Indian Standards (BIS)
- Query on EU Standards on Sports Good: Bureau of Indian Standards (BIS)

ICT:

- Inputs to draft technical report on "Security by design Principles in M2M device manufacturing and National Trust Centre: Telecom Engineering Centre (TEC)
- Inputs to draft "National Blockchain Strategy" prepared by MEITY: IET.
- Provided information around IoT/M2M in Europe which include AIOTI, LSP under Horizon 2020 etc.: SangEnnovate
- Inputs on draft guidelines for Consumer IoT Security: Telecom Engineering Centre (TEC)

Mobility:

- Provided update on the status of railway standardization in India: European Commission

3.   Generic Update

3.1   Food and Consumer Affairs Minister calls for 'One Nation One Standard' for lab testing.

Consumer Affairs, Food and Public Distribution Minister called for embarking on Mission 'one nation one standard' and make India the leader in setting global benchmarks in setting standards. Reviewing the work of the Bureau of Indian Standards (BIS), Minister said the strength and character of a nation are often exemplified by the standards it sets for the quality of its products and services and it

is time for India to settle for nothing less than the best. According to an official release, he said lab testing in India should be of world standards and modern equipment and latest technologies should be used. The minister said that BIS should explore international partnerships and associations to achieve synergy in the field.

He said that "gap analysis" of BIS and government labs be taken up on a priority basis as well. In management parlance, gap analysis refers to the comparison of actual performance with potential or desired performance. Referring to the issue of different institutions and PSUs having a variety of non-uniform standards, he said that effort should be made to merge different standards under one standard as much as possible. The minister said that industry should be invited for more dialogue, participation, and collaboration in the mission of 'one nation one standard'. He said the process of granting certification should be kept as simple as possible and duplication of work should be avoided.

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3.2 BIS reaches out to developing nations for adoption of Indian Standards.

Bureau of Indian Standard (BIS) has offered to provide standards and quality related solutions to developing and least developed countries, which are at the same level of technological advancement and have similar climatic and socio-economic conditions.

Seeking to expand acceptability of Indian Standards in other countries, the Bureau of India Standards (BIS) has started providing complimentary copies of the Indian Standards for reference and adoption purposes to some of the developing and least developed countries such as Suriname, Indonesia, and Uzbekistan. The BIS is also in talks with Afghanistan, Bangladesh, Saudi Arabia, Sudan, and Slovenia for virtual meetings on this issue, a government official said. "The BIS has shared the Indian Standards catalogue and guidelines for adoption of Indian Standards with National Standards Bodies (NSBs) of 21 countries with whom India has cooperation arrangements," a senior government official said. The BIS has published over 20,000 Indian Standards encompassing various sectors and around 15,000 of these are indigenous standards.

The official said to create awareness on indigenous Indian Standards among developing and least developed countries and to encourage them to use these wherever suitable, the consumer affairs ministry has urged the external affairs ministry to disseminate information on free availability of indigenous Indian Standards in countries through Indian missions.

Read more>>

3.3 'BIS Talks' Films series on standardization in different technology sectors

Bureau of Indian Standards (BIS) has brought out 'BIS Talks' Film's series on standardization in different technology sectors. The films are primarily educational in nature and present an overview of the standardization activities carried out through Technical Committees of BIS. It is envisaged that this knowledge would enable various stakeholders such as industry, academia, research & development institutions, Govt. Bodies, laboratories etc. to reap the benefits of standardization and to contribute towards strengthening it through their valuable inputs. The 'BIS Talks' Films can be accessed through our website or directly through the link available here

3.4 DoT directs all state procurements to be of local cyber security Products.

The Department of Telecommunications (DoT) has directed all state-owned companies, central ministries, and government departments to give preference to locally produced cybersecurity products in public procurement. Preference has to be given to 'Make in India' cyber security products in public procurement by central ministries/departments, public sector undertakings (PSUs) and government organisations," the DoT said in a circular issued. The development came after the Ministry of Electronics & Information Technology (MeitY) said earlier that it was awash with complaints from droves of indigenous cyber product companies about the challenges they were facing in participating in public procurement of such products.

In a circular dated March 4, MeitY had said it had received several complaints that the procuring agencies were citing "restrictive and discriminatory conditions such as turnover, Gartner quadrant, and other certifications in their tenders" which were making it tough for local cybersecurity product makers to participate in the relevant bidding process.

The telecom ministry and MeitY's joint call to all government undertakings to buy locally manufactured cybersecurity products comes at a time when cybersecurity attacks and breaches in the country are reckoned to have jumped more than 500% since the government imposed a nationwide lockdown in March 2020 to contain the spread of Covid-19.

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4 Smart Cities

4.1 Ministry of Housing and Urban Affairs (MoHUA) launched the National Urban Digital Mission (NUDM) along with other digital initiatives for Urban Governance.

The National Urban Digital Mission (NUDM) has been launched by the Ministry of Housing and Urban Affairs along with the Ministry of Electronics and Information Technology. Several other digital initiatives of MoHUA *vis.* India Urban Data Exchange (IUDX), SmartCode, Smart Cities 2.0 website, and Geospatial Management Information System (GMIS) were also launched. These initiatives are among the ongoing efforts of both Ministries to realise the Prime Minister's vision of Digital India and AtmaNirbhar Bharat, by making cities more self-reliant and enabled to meet the needs of and provide services to their citizens.

National Urban Digital Mission (NUDM):

The National Urban Digital Mission (NUDM) will create a shared digital infrastructure for urban India, working across the three pillars of people, process, and platform to provide holistic support to cities and towns. It will institutionalise a citizen-centric and ecosystem-driven approach to urban governance and service delivery in 2022 cities by 2022, and across all cities and towns in India by 2024.

- NUDM will create a shared digital infrastructure that can consolidate and cross-leverage the various digital initiatives of the Ministry of Housing and Urban Affairs, enabling cities and towns across India

to benefit from holistic and diverse forms of support, in keeping with their needs and local challenges.

- NUDM is citizen-centric, ecosystem-driven, and principles-based in both design and implementation. NUDM has articulated a set of governing principles, and inherits the technology design principles of the National Urban Innovation Stack (NUIS), whose strategy and approach was released by MoHUA in February, 2019. The principles in turn give rise to standards, specifications, and certifications, across the three pillars of people, process, and platforms.

India Urban Data Exchange (IUDX):

The India Urban Data Exchange has been developed in partnership between the Smart Cities Mission and the Indian Institute of Science (IISc), Bengaluru. IUDX serves as a seamless interface for data providers and data users, including ULBs, to share, request, and access datasets related to cities, urban governance, and urban service delivery. IUDX is an open-source software platform which facilitates the secure, authenticated, and managed exchange of data amongst various data platforms, 3rd party authenticated and authorised applications, and other sources. As the number of cities on IUDX expands, this will scale up to uniform and seamless sharing between data producers and data consumers across urban India. IUDX is designed to address the problem of data silos, both within and across cities. Cities generate large volumes of data, which are recorded by a wide range of entities, both within government and across industry, academia, and civil society. The combination of these datasets can enable rapid innovation, as well as a better understanding of and planning for urban needs and challenges. IUDX creates a secure and reliable channel for data producers or owners to share their data, with complete control over what is shared and with whom, in order to enable sharing while addressing security and privacy protections by design.

SmartCode Platform:

SmartCode is a platform that enables all ecosystem stakeholders to contribute to a repository of open-source code for various solutions and applications for urban governance. It is designed to address the challenges that ULBs face in the development and deployment of digital applications to address urban challenges, by enabling cities to take advantage of existing codes and customising them to suit local needs, rather than having to develop new solutions from scratch. As a repository of open-source software, the source code available on the platform will be free to use without any licensing or subscription fees, thus limiting costs to those involved with customising the code and developing a locally relevant solution.

New Smart Cities Website ver. 2.0 and GMIS:

To better connect with people on the Smart Cities Missions efforts and achievements, and to make it easier for ULBs and citizens to access resources related to their work, the Smart Cities Mission website has been redesigned to serve as a single stop for all Smart Cities initiatives. The Geospatial Management Information System (GMIS) is integrated with this website. The website creates a single window hub for Smart Cities Mission. A portal that works as a gateway to all the platforms and initiatives launched under the Mission. The website, through a seamless and a unified interface, aggregates all mission related information/initiatives from the various platforms and show automated mission updates

catering to the needs of a public user. The website has been developed to be used as a highly effective communication and outreach tool.

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4.2   Smart City Standards published by Bureau of Indian Standards (BIS)

- IS 18000: 2020 Unified Digital Infrastructure - ICT Reference Architecture (UDI-ICTRA)
- IS 18010 (Part 1): 2020 Unified Digital Infrastructure - Unified Last Mile Communication Protocols Stack Part 1 Reference Architecture (UDI – ULMCPS – RA)
- IS 18003 (Part 1): 2020   Unified Data Exchange Part 1 Architecture

5   Electrical Equipment including Consumer Electronics.

5.1   Tata Power DDL introduces Narrow-Band IoT technology in smart meters.

Tata Power Delhi Distribution Ltd (TPDDL) announced it has introduced Narrow Band-Internet of Things (NB-IoT) technology in its smart meters. The private power distributor has so far installed 230,000 smart meters on the Radio Frequency (RF) technology. The company said the "first-of-its-kind" technology integration has been done involving meter manufacturers and NB-IoT service of Reliance-Jio Network.

"NB-IoT is a new and cost-effective technology in 4G and 5G spectrum with fast deployment quality. With this technology, the interference and obstruction arising due to public network congestion will not hamper the performance of smart meter anymore as data will smoothly flow through a dedicated channel," the company said in a statement.

The new technology is also expected to enable a greater number of remote meter readings, thereby ensuring the safety of consumers during pandemic times. "This unique technology integration will not only strengthen our credentials as a Utility of the Future but also take the Indian Smart Metering Mission to the next level," said Ganesh Srinivasan, Chief Executive Officer, TPDDL.

The firm said it has achieved interoperability at Meter Data Management level whereby meters from multiple makes and different technologies are collected, worked upon, and analysed at the same platform.

Read More>>

5.2   MEITY invites applications for second round of large-scale electronics manufacturing under PLI Scheme.

The government has started inviting applications for the second round of large-scale electronics manufacturing under the production-linked incentive (PLI) scheme with focus on some electronic components like motherboards, semiconductor devices, among others. The application window for the scheme has been opened till March 31 which may be further extended, as per guidelines issued by the Ministry of Electronics and IT (Meity).

"The second round of the PLI scheme is open for accepting applications. The tenure of the second round of PLI scheme is for four years and the incentive shall be applicable from April 1, 2021," an official memorandum dated March 11, 2021 said.

The first round of the scheme was open for receiving applications till July 31 which attracted participation from global majors like Apple's contract manufacturers Foxconn, Wistron and Pegatron; Samsung; local players Lava, Optiemus, Dixon etc. --committing investment of over Rs 11,000 crore (€1.3 billion).

While the first round targeted mobile manufacturing with incentives for 20 companies, the second round has expanded the window for up to 30 eligible companies. The new guidelines have identified components, discrete semiconductor devices including transistors, diodes etc, passive components including resistors, capacitors, printed circuit board, assembly, ATMP (assembly, testing, marketing, and packaging) units etc. as target segment for the second round of PLI.

Read More>>

5.3 NXP India Joins hands with MeitY & FabCI to launch Semiconductor Incubation and Acceleration Program' for technology startups.

NXP India, one of the biggest R&D centres for NXP Semiconductors and a world leader in secure connectivity solutions for embedded applications, in collaboration with Ministry of Electronics and Information Technology (MeitY), Government of India and Fabless Chip Design Incubator (FabCI), IIT Hyderabad has announced the launch of its maiden 'Semiconductor Startup Incubation and Acceleration Program'. The objective of this program is to find, facilitate, and mentor semiconductor and IP design start-ups across India in technological as well as business aspects. The programme will support India's vision of making the country a self-reliant nation as it creates a ready platform to support start-ups who wish to design semiconductor chips in India. The local hardware designing, and manufacturing of products will strengthen the core Technology-driven System pillar vision of Atmanirbhar Bharat and in turn will boost India's economy, generate employment, and enhance India's position globally in the electronics industry by moving up in the value chain.

Read More>>

5.4 Office Memorandums (OMs)/Notifications issued by Ministry of Power (MoP) and Ministry of New and Renewable Energy (MNRE)

- Central Electricity Authority (CEA) notified Draft Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations, 2021 for public comments. Read more/Download
- Central Electricity Authority (CEA), Ministry of Power (MoP) inviting comments on draft standard technical specifications of Transformer for Solar Park Pooling station. Read more
- Notification on the division and demerger of the Central Transmission Utility and Power Grid Corporation of India Limited Transfer Scheme, 2021. Read more/Download
- Amendments to the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Round-The Clock Power from Grid Connected Renewable Energy Power Projects, complemented with Power from any other source or storage. Read more/Download

- Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirement for Compulsory Registration) Order, 2019 - Implementation - Reg. Read more/Download
- Imposition of 25% Basic Customs Duty (BCD) on Solar PV Cells & 40% on Solar Modules/ Panels. Download
- Draft policy framework for developing and promoting decentralised renewable energy livelihood applications. Read more/Download
- Guidelines for International Solar Alliance (ISA) undergraduate Fellowship Program. Read more/Download
- Guidelines for enlistment under "Approved Models and Manufacturer of Solar Photovoltaic Modules Order, 2019" – Amendment. Read more

6   Mobility

6.1   Vehicle manufacturers to build indigenous vehicles for using flexible fuel alternatives.

Union Minister for Road Transport and Highways & MSME has urged car manufacturers give priority to the indigenous production of flex engines, which can be used in vehicles using alternative fuels such as ethanol. Meeting a delegation of carmakers from the Society of India Automobile Manufacturers (SIAM), the Minister said that, with ethanol beginning to be easily available in the country, and more than 70% of gasoline consumption being done by two-wheelers, there is a need to develop indigenous technology for flex fuel vehicles. Discussions were also held regarding the request by SIAM to postpone implementation of BS 6 CAFÉ Phase II regulations to April 1st, 2024, on the grounds that the industry is still recovering from the impact of COVID, and slow consumer demand. While agreeing to examine the request, Minister made it clear to them that Indian automobile industry must have world-class quality, and that if the industry is meeting stringent anti-pollution standards in countries to which they are exporting vehicles, the same standards must be adhered to in India as well.

The Minister has asked the delegation to come back with a detailed study on what steps have been taken by the industry on meeting the BS VI Phase I standards, and the financial implications of going ahead with BS VI CAFE Phase II standards, before a final decision can be taken on the demand to postpone its implementation.

Read More>>

6.2   Call for R&D and shift towards alternate battery technologies for EVs.

With electric vehicles fast becoming the new reality, Union Minister for MSME and Road Transport & Highways has stressed the need to emerge as pioneers in developing leading battery and power-train technologies. Noting that the challenge we presently face is the control on strategic reserves of Lithium, which is used to manufacture Lithium-ion rechargeable batteries used in vehicles, the Minister has called upon the EV sector to shift towards a completely indigenous battery technology in the coming years. This could be metal-air, metal-ion, and other potential technologies in the R&D pipeline.

Pointing out the need to achieve the goal of AATMA NIRBHAR BHARAT in Transport Sector, Transport Minister said it is necessary to dedicate the coming years to rigorous research and development of such

alternative battery technologies with the support of our Institutions of Eminence (IoEs), industry, scientists, engineers, and the government.

Read More>>

6.3 Ropeways and Alternate Mobility Solutions to be under Ministry of Road Transport and Highways from now on

The Ministry of Road Transport and Highways will, from now on, also look after the development of Ropeways and Alternate Mobility Solutions. The move is expected to give a boost to the sector, by setting up a regulatory regime, and facilitating research and new technology to come into this sector. An amendment to the Government of India (Allocation of Business) Rules, 1961 has been notified, to enable this step.

This means that the Ministry will have responsibility for development of ropeway and alternative mobility solutions technology, as well as construction, research, and policy in this area. Formulation of institutional, financial, and regulatory framework for the technology will also fall under the ambit of this move.

Responding to the development, Union Minister for MSME & Road Transport and Highways, Sh. Nitin Gadkari this will go a long way in developing sustainable alternative mobility solutions in transport sector for urban, hilly, and last mile connectivity.

Read More>>

6.4 Report on "Mobilising Finance for EVs in India": A Toolkit of Solutions to Mitigate Risks and Address Market Barriers"

The Government of India (GoI) has made an ambitious commitment to the creation of demand for EVs through the Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME) India Scheme. Additionally, the promotion of domestic manufacturing through the National Mission on Transformative Mobility and Battery Storage has supplemented the scheme. As the economics of electric vehicles (EVs) continue to improve and new business models gain acceptance, India's EV market is poised for significant growth in the coming decade.

Key barriers related to EV adoption—including technology cost, infrastructure availability, and consumer behavior—must be overcome. Incentives that reduce the upfront cost of EVs, such as the FAME II incentive in India or federal tax rebates in the US, are a critical first-order solution to address. Although less commonly discussed, financing—in terms of the cost and quantum of capital—is another hurdle for India's electric mobility transition. End-users currently face a range of challenges.

The report identifies solutions to direct capital and financing to aid in India's EV transition.

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6.5 Notifications issued by Ministry of Road, Transport and Highways

- G.S.R. 148(E): Mandating dual airbags for all passenger cars in India. [Read more/Download](#)
- G.S.R. 136(E): regarding Notification for electronic Monitoring and Enforcement of Road Safety. [Read more/Download](#)
- S.O 1433(E) regarding Implementations of sections of MV Act 2019. [Read more](#)
- G.S.R 220(E) regarding Concession in Motor Vehicle Taxes against submission of Certificate of Vehicle Scrapping. [Read more](#)
- G.S.R 190(E) regarding Motor Vehicles (Registration and Functions of Vehicle Scrapping Facility) Rules, 2021. [Read more](#)
- G.S.R 173(E) regarding Construction, Equipment and Maintenance of Motor Vehicles. [Read more](#)
- S.O 1232(E) regarding Vehicle Recall formula. [Read more](#)

6.6   Notifications issued by Railway Ministry

- Implementation of Public Procurement (Preference to Make in India) Order, 2017 - Notification of RE items under para-3(a) of PPP-MII Order. [Read more](#)
- Pre-qualification criteria for Elevator/Lifts. [Read more](#)
- Misclassification of Goods as Works in procurement. [Read more](#)

7.   ICT

7.1   DoT amends ISP licenses on telecom gear use from trusted sources, products lists

The Department of Telecommunications (DoT) has brought in the clauses of 'trusted sources' and 'trusted products' for internet service providers (ISP) as well by amending their license. ISPs have criticized the move, saying many may have to shut shop as procurement costs could rise substantially as they heavily bank upon Chinese manufacturers for their supplies.

According to the new DoT directive, from June 15, those holding ISP licenses, including the likes of state-run GAIL, Power Grid and Oil India, can only install equipment from the trusted products list. ISPs would also need to take permission from the designated authority—National Cybersecurity Coordinator—for upgrading existing network utilizing the telecom equipment which is not designated as a trusted product.

"The government through the designated authority will have the right to impose conditions for procurement of telecommunication equipment on grounds of defence of India, or matters directly or indirectly related thereto, for national security," the DoT said in a notification on Tuesday. "Designated authority for this purpose shall be National Cybersecurity Coordinator. In this regard, the licensee shall provide any information as and when sought by the Designated Authority."

[Read More>>](#)

7.2   Telecom secretary puts on hold 5G trial spectrum allotment to Saankhya Labs, IISc Bengaluru

Telecom secretary has put on hold the recent allocation of 5G trial spectrum to homegrown semiconductor chipset maker Saankhya Labs and IISc Bengaluru. The development has brought to the

fore divergent views of two key wings of the Department of Telecommunications (DoT) on the experimental 5G airwaves allocation process.

Government and industry insiders said the allocations have been held in abeyance as Saankhya and IISc apparently did not follow the mandated process of seeking such experimental 5G spectrum. Instead of directly applying online to the mandated Wireless Planning & Coordination (WPC) wing, they chose to involve DoT's Standards, R&D & Innovation (SRI) division in the applications process, a person with direct knowledge said.

To this, the WPC wing is learnt to have raised objections, prompting the telecom secretary to intervene. Minutes of an internal April 29 meeting of DoT's SRI division show that specific directions were given to WPC's Regional Licensing Office (RLO) in Chennai, "to issue experimental 5G spectrum licences to Saankhya Labs and IISc without any further delay by April 30" itself. The RLO-Chennai was also ordered to grant such trial 5G spectrum to both applicants for six months, extendable upto 1 year. ET has seen a copy of the minutes of the meeting that was attended by senior officials of Saankhya Labs and IISc.

Subsequently, Saankhya was granted in-principle experimental 5G airwaves in the premium 700/600 Mhz bands in Bengaluru to run trials for convergence of broadcast and broadband networks, while IISc was offered trial airwaves (in the 3.5 Ghz/2300-2400 Mhz bands) for testing in its campus lab.

Read More>>

7.3   MEITY to set up Quantum Computing Applications Lab in partnership with AWS.

The Ministry of Electronics and Information Technology (MeitY) will establish a Quantum Computing Applications Lab in the country, in collaboration with Amazon Web Services (AWS), to accelerate quantum computing-led research and development and enable new scientific discoveries, officials said.

The MeitY Quantum Computing Applications Lab will provide quantum computing as a service to government ministries and departments, researchers, scientists, academia, and developers to enable advances in areas such as manufacturing, healthcare, agriculture, and aerospace engineering. AWS will provide hosting with technical and programmatic support for the Lab.

This initiative will provide scientific, academic, and developer communities access to a quantum computing development environment aligned with the government's science and technology priorities. Quantum computing is an emerging field that harnesses the laws of quantum mechanics to build powerful tools to process information. It has the potential to solve computational problems that are beyond the reach of classical computers, and lead to new breakthroughs that can transform chemical engineering, material science, drug discovery, financial portfolio optimisation, machine learning, and much more.

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7.4   Mandatory testing on hold: Telecom vendors say impact on broadband rollout likely.

Telecom gear vendors like Nokia, Huawei and ZTE have said that TEC's move to put mandatory testing and certification for wireline equipment on hold will impact deployments in the country. The

Telecommunication Engineering Center (TEC) had last week informed all vendors through notices that certifications issued have been put on hold till further notice due to "anomaly" found in the process of phase-II of Mandatory Testing and Certification of Telecommunication Equipment (MTCTE) regime.

Under the phase-2, telecom equipment makers were supposed to get certification for transmission terminal equipment, passive optical network family (PON) of broadband equipment and feedback devices. Sources familiar with the matter said these three vendors along with smaller gear vendors like Netlink, White Water and Syrotech had already received the certification from the TEC.

Read more>>

7.5   5G 'Test Bed' is expected to boost telecommunications technology by October, 2021

Aimed at taking lead in 5G deployment, India's ongoing project to set up 'Indigenous 5G Test Bed' is expected to be ready by October this year to enhance national capability in telecom technology, giving a fillip to Indian telecom manufacturers.

Started four years back in 2018 March with total cost of Rs 224.01 crore (€26.35 million), the 'Indigenous 5G Test Bed' will provide an open 5G test bed that can enable Indian academia and industry to validate their products, prototypes and algorithms and demonstrate various services.

Providing test bed with complete access for research teams to work on new concepts or ideas holding potential for standardization in India and on global scale, make a test bed available for Indian operators to understand the working of 5G technologies along with security aspects and plan their future networks is among other major goals of the '5G Test Bed'. Besides, the project is aimed at facilitating 5G networks for experimenting and demonstrating applications or use cases of importance to Indian society, implement and demonstrate IoT (Internet of Things) based systems and services in the country.

"Keeping in view India's specific requirements and to take lead in 5G deployment, Department of Telecommunications (DoT) approved financial grant for the multi-institute collaborative project to set up 'Indigenous 5G Test bed' (Building an end-to-end 5G Test Bed) in India in March 2018…The test bed is expected to be ready by October 2021,". "The test bed is likely to enhance national capability in telecom technology, develop indigenous Intellectual Property (IP) and give fillip to Indian telecom manufacturers."

Read more>>

7.6   Telecom manufacturing to reach global scale in India - India launches PLI scheme to become hub of global telecom manufacturing.

The Union Cabinet, chaired by the Prime Minister, Shri Narendra Modi, has approved Production Linked Incentive (PLI) Scheme for Telecom and Networking Products with a budgetary outlay of Rs. 12,195 crores (€1.4 billion). The Production Linked Incentive (PLI) Scheme intends to promote manufacture of Telecom and Networking Products in India and proposes a financial incentive to boost domestic manufacturing and attract investments in the target segments of telecom and networking products to encourage Make in India. The scheme will also encourage exports of telecom and networking products 'Made in India'.

Support under the Scheme will be provided to companies/entities engaged in manufacturing of specified telecom and networking products in India. Eligibility will be further subject to achievement of a minimum threshold of cumulative incremental investment over a period of four years and incremental sales of manufactured goods net of taxes (as distinct from traded goods) over the Base Year 2019-2020. The cumulative investment can be made at one go, subject to annual cumulative threshold as prescribed for four years being met.

Globally Telecom and Networking Products exports represent a US$100 billion market opportunity, which can be exploited by India. With support under the scheme, India will augment capacities by attracting large investments from global players and at the same time encourage promising domestic champion companies to seize the emerging opportunities and become big players in the export market. In continuation of "Atmanirbhar Bharat-Strategies for enhancing India's Manufacturing capabilities and enhancing exports", this scheme is part of the umbrella scheme approved by the cabinet in November 2020 for implementation of PLI under various Ministries/ Departments including Department of Telecommunications (DoT).

Read More>>

7.7 ICT related notifications/consultation Papers/recommendations/policies and directives and white papers

- Ministry of Electronics and Information Technology (MeitY) has released a Draft "National Blockchain Strategy" for public comments/inputs by 15 February 2021. Read more/Download

Telecom Engineering Centre (TEC) issued following notifications:

- Notice for seeking stakeholders' inputs on the Draft Indian Telecom Security Assurance requirements (ITSAR) for PCRF (4G Core network element). Read more
- Extension of last date for submitting comments on Draft guidelines for Consumer IoT Security. Read more

Telecom Regulatory Authority of India issued following consultation Papers / Publications

- Telecom Regulatory (TRAI) has released Annual Report for the year 2019-20. Read more
- Consultation Paper on Licensing Framework for Satellite-based connectivity for low bit rate applications Read and Download

8. Planned Activities for Next Quarters

- End of Year financial closure & Regulatory Compliances for both EU and India
- BIS Catalogue
- Support Virtual Workshop on IoT/M2M with TEC/CDOT through ETSI/Indico
- Support Security Webinars in India through ETSI/Indico
- Follow-up & work on the India Taskforce/Priority India activities, action points including possible workshop.

- Continue participation in the important conferences and events to promote EU Standards & related policies.
- Release timely Policy & NEWS Updates

9.   Glossary

Sr. No.	Acronym	Expansion
1	3GPP	3rd Generation Partnership Project
2	5G	Fifth Generation
3	AAL	Active Assisted Living
4	AI	Artificial Intelligence
5	BIF	Broadband India Forum
6	BIS	Bureau of Indian Standards
7	CDoT	Centre for Development of Telematics
8	CEA	Central Electricity Authority
9	CEN	European Committee for Standardization
10	CENELEC	European Committee for Electro-technical Standardization
11	COAI	Cellular Operators Association of India
12	DGFT	Directorate General of Foreign Trade
13	DoT	Department of Telecommunications
14	EEG	European Economic Group
15	EESL	Energy Efficiency Services Limited
16	ETA	Equipment Type Approval
17	ETD	Electro-Technical Department
18	ETSI	European Telecommunications Standards Institute
19	EU	European Union
20	EV	Electric Vehicle
21	FAME	Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles
22	FTAs	Free Trade Agreements
23	FTTH	Fiber to the Home
24	FTP	Foreign Trade Policy
25	GMIS	Geospatial Management information System
26	GST	Goods and Services Tax
27	ICT	Information and Communication Technology
28	IEA	International Energy Agency
29	IEC	International Electrotechnical Commission

30	IISc	Indian Institute of Science
31	IoT	Internet of Things
32	IPR	Intellectual Property Rights
33	IRD	International Relations Department
34	ISUW	India Smart Utility Week
35	ISP	internet service providers
36	ITU	International Telecommunication Union
37	IUDX	India Urban Data eXchange
38	LITDC	Electronics and Information Technology Division Council
39	LPWAN	Low-Power Wide-Area Networks
40	M2M	Machine to Machine Communication
41	MAIT	Manufacturers' Association for Information Technology
42	MEITY	Ministry of Electronics and Information Technology
43	MNRE	Ministry of new and renewable energy
44	MoHUA	Ministry of Housing and Urban Affairs
45	MoP	Ministry of Power
46	MoP	Ministry of Power
47	MTCTE	Mandatory Testing and Certification of Telecommunication Equipment
48	MoU	Memorandum of Understanding
49	MSME	Micro, Small and Medium Enterprises
50	NDAP	National Data and Analytics Platform
51	NMC	National Mirror Committee
52	NUDM	National Urban Digital Mission
53	PLI	Production-Linked Incentive
54	PV	Photovoltaics
55	PWDs	Persons With Disabilities
56	R&D	Research and Development
57	SESEI	Seconded European Standardization Expert for India
58	SMNP	Smart Meter National Programme
59	SyC	Systems Committee
60	TAG	Technical Advisory Group
61	TBT	Technical Barriers to Trade
62	TEC	Telecom Engineering Centre
63	TRAI	Telecom Regulatory Authority of India
64	TSDSI	Telecommunications Standards Development Society India
65	TSAC	Telecom Standards Advisory Committee

66	UDI	Unified Digital Infrastructure
67	WG	Working Group