



Twenty Eighth National  
Conference on Communications



# Workshop on “Standards Driven Research” at NCC 2022

24 May 2022, 1000-1700 IST



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## MeitY Perspective

### How is MeitY facilitating Standards Driven Research?

#### Journey of Standards Driven R&D Initiatives

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# Need of Standards Driven R&D

## Importance of Encouraging Standards Driven R&D Work:

- Citizens can take full advantage of increasingly pervasive digital services across the plethora of existing and emerging use cases and verticals
- Negligible number of IPRs held by India in Telecom Products
- MNCs asserting their patent portfolio against Indian handset manufacturers.

## Prime Focus of MeitY and the Initiatives taken:

- To encourage development of IPRs
- Initiation of IPR Program based on the ideology that *“Strong Intellectual Property Rights are the Future of Innovations in India”*
- Push our requirements globally a.k.a. develop our own standards. The only way to do so is to participate in standards meetings and push our requirements to International Standards
- To encourage researchers, academic institutes, and R&D Labs to participate in standards body meetings such as 3GPP, to take their R&D outcomes and push them to become an indigenous IP that can be converted into standards.

# MeitY Support to 4G and 5G Standardisation Since 2004

Serial No	Title of the Project	Duration
1	Development of Next (4G) wireless technology Phase 1	2004 - 2008
2	Development of Next (4G) wireless technology Phase 2 (Year 1)	2008 – 2009
3	Development of Next (4G) wireless technology Phase 2 (Year 2 & 3)	2009 – 2012
4	Next Generation (4G Advance) Wireless Technology Research	2012 – 2015
5	5G Research & Building next generation solutions for Indian Market	2015 - 2019
6	Next Generation Wireless Research and Standardization on 5G and Beyond	2021 - 2024



# Contribution in Standards Body

**First step taken a decade ago to build an Indigenous 4G, then 4G advanced and now 5G capabilities and its outcomes :**

- Our impact on Global 4G and 5G Standardization arena
- Continuous participation in Global 3GPP meetings
- Submission of an independent set of radio interface technologies (SRIT) as a global core specification (GCS) enhancing the 3GPP Release 15/16
- Development of an advanced 4G Broadband Wireless Simulator, which was further enhanced to develop and evaluate 5G technology

**The R&D effort in the 5G wireless technology leading to many firsts in India in the field of communications:**

- LMLC – Low Mobility Large Cell
- A radio interface technology named as “ 5Gi ”
- Standard Essential Patents (SEPs)
- Development of a comprehensive end to end 5G testbed

# Patents Including Standard Essential Patents (SEP)

1. Standard Essential Patents in 4G (IEEE 802.16m) and 5G including 5Gi
2. Including below SEPs there are a 111 patents filed in India and US
3. CEWiT and IITM have declared 12 SEPs to TSDSI
  - i. Mostly for Release 16 onwards
  - ii. 3 for Release 17
  - iii. 2 applicable even from Release 13 LTE

Indian Total Filed - 73		US Total Filed – 38	
Granted	Under review	Granted	Under review
26	47	26	12



# Future Initiatives

## Projects in Pipeline to give us a hold on 5G & Beyond Research:

- Next Generation Wireless Research and Standardization on 5G and Beyond,
- 6G: Sub-THz Wireless communication with Intelligent Reflecting Surfaces (IRS),
- Indigenous 6G Chip Design & Deployment,
- 6G End-to-End Communication System and
- A Unified IoT Architecture and Development Framework for 5G/6G MMTC Applications

## Activities initiated in the R&D projects funded by MeitY:

- Create IPs which lead to patents, designing innovative algorithms that will make up the product design and developing prototypes that can give a head start in developing Technological solutions / products
- Encourage researchers to disclose their patents to TSDSI so that they can be taken up to international standards bodies like 3GPP as Indian contributions
- Outcomes of the research projects contribute to the standards



# Thank You

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