R&D facilitation / Funding Design, Develop and PilotPilot - Applications and Usecases

Cumulative 5G Opportunity for India $1 Trillion by 2035

- 5G High Level Forum

Department of Telecommunications

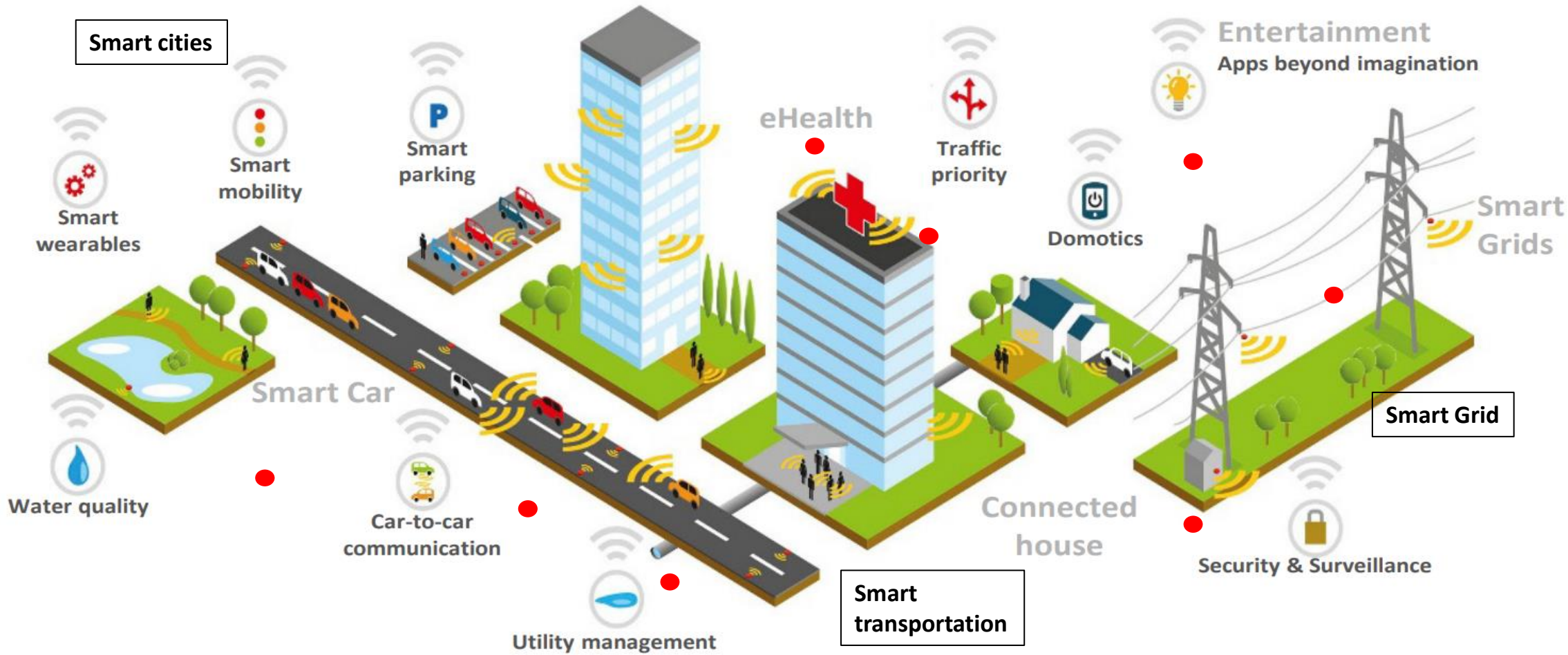
Content

1. Overview of 5G
2. Efforts to promote 5G usecases
3. Vertical Specific Usecases
4. Structure of a Usecase lab
5. 100 5G labs
6. 5G eco-system
7. 5G enabled Intelligent villages
8. Way forward

Sectors

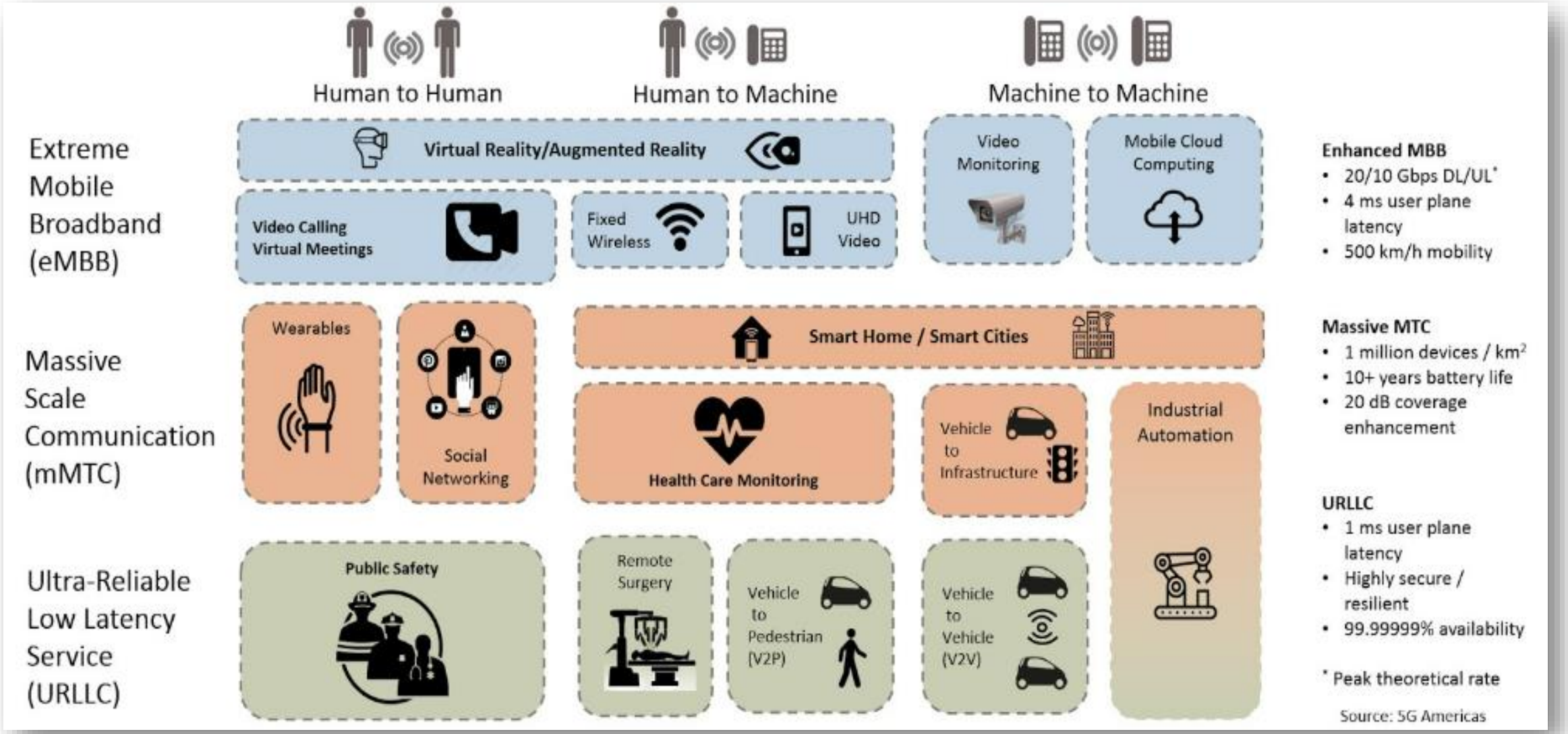
1. Health
2. Education & Skill Development, Training
3. Tourism, Heritage conservation
4. Industry 4.0, Predictive Maintenance
5. Logistics & Warehouses & Industrial Zones
6. Ports, Freight Management
7. Mining Operations and safety
8. Smart cities & Water Management
9. Agriculture

5G has potential to impact every economic vertical



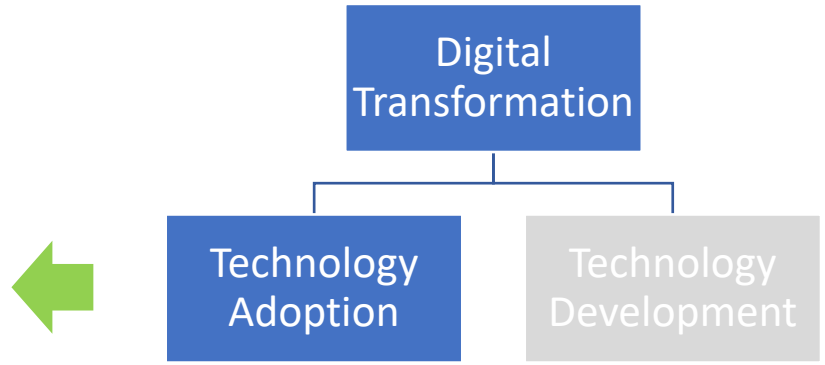
Source: European Commission.

5G USES CASES SUMMARY



India - 5G Use-cases in the techade

- 343 - 1 lakh + towns/cities
- 230K Factories
- 3000 Mining Licenses
- 130+ Airports
- 13 major & 200+ minor/inter. ports
- 151K Kms National Highways
- 159.7 million hectares Arable Land
- 7500 Km Coast line
- $227 B Software Industry
- 10000+ Tech Startups



Initiatives from DoT

100 5g labs /ecosystem

R&D **Spectrum**

- Cost $ 65 p.a.
- License for Indoors throu' Self Declaration
- Licenses issued for R&D – 929; Demo – 38; Manf - 59

Indigenous 5G **Testbed**, Private 5G Testbeds

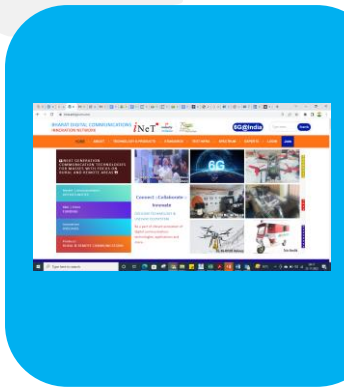
- IITM, IITH
- MCTE (MHOW)
- L&T, HCL, GE, CapGemini, Airtel, Jio, TechM, Infosys, TCS

Inter-ministerial Committee **5G Team**

- 21 GoI Departments, State Governments
- White Paper on usecases
- Regional and State-wise seminars

Vertical Engagement & **Partnership** Program

Tapping USERS directly
30+ entities

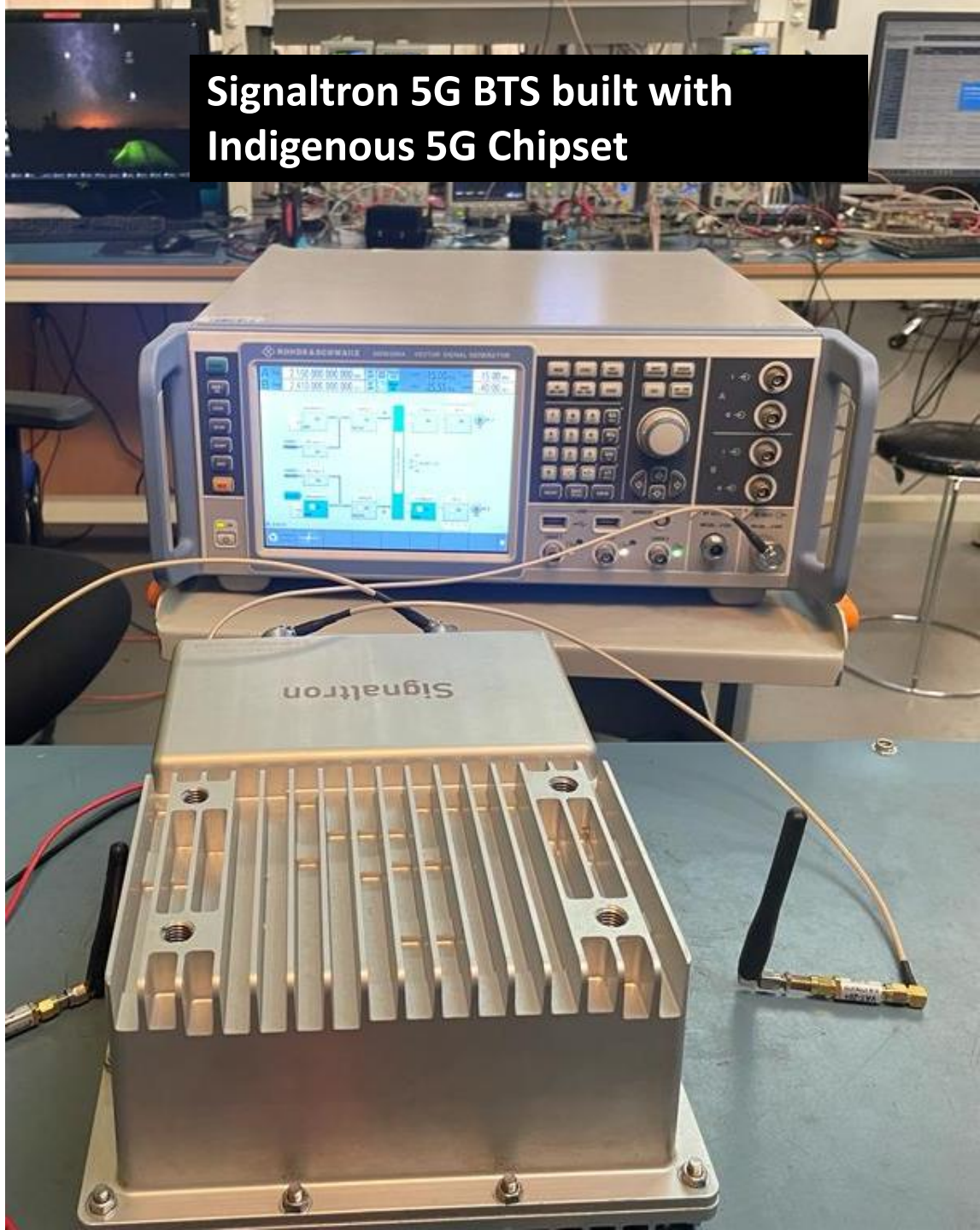


Collaboration Platform :: Bharat5glabs.gov.in

Go to place for Technology Collaboration

Self Reliance in Telecom

1. **TRUST LOCAL COMPANIES**
2. Export of Indian Telecom Stack
3. Support for Startups – Telecom Startup Mission
4. Live-network Sandbox by BSNL
5. **4G Project - One Indian in Global top 5 Telecom Mfg Giants by 2030**



100 – 5G Labs

Objectives:

- To build competencies of 5G technologies in students and academic fraternity.
- Enabling projects at under-graduation and post graduation level for students using 5G environment.
- Encouraging academia-industry engagement to ideate and develop 5G use cases.
- Providing local access to 5G test setup for Startups and MSMEs around the institution.
- Making Indian academia & start-up ecosystem 6G ready.

Spectrum Regulatory Sandbox / Wireless Test Zones

Steering committee

The Steering Committee created seven Task Forces, each with a Chair

- Spectrum Policy
- Regulatory Policy
- Education and Awareness Promotion Program
- Application and Use Case Labs
- Development of Application Layer Standards
- Major Trials and Technology Demonstration
- Participation in International Standards

Developing an *intelligent* '*connected*' Villages- 5 G utilisation

"Use of Technology to improve the quality of life of the people we serve"

ITU Innovation Center

The Innovation Centre will bring together the main stakeholders of the digital innovation ecosystem (entrepreneurs, finance, support networks, public sector, academia and private sector) and serve as a global centre to reduce technological inequities.

It will also allow for spotlighting of the Indian innovation ecosystem through South-South and Triangular cooperation, while supporting ITU's mission with new capabilities and accelerating digital development.

Areas of Focus:

The Innovation Centre will provide work on the following areas of focus:

- Connectivity
- Digital Applications and Services
- Digital Innovation Ecosystems
- Digital Public Goods
- Other areas to be identified over the course of the IC workplan implementation.

Thank you

Actions taken by Ministries/States/UTs

- CoEs identified by 9 Ministries / Departments
- 4 Usecase Pilots selected by MoHUA
- Vidisha district (Madhya Pradesh) rolled out 4 Usecases on 4G/5G

	Ministry / Deptt	Identified CoE to work on 5G Usecases
1	**MoHUA**: Housing & Urban Affairs	IUDX, IISC - India Urban Data Exchange, IISc, Bengaluru
2	**MoH&FW**: Health and Family Welfare	NIHFW - National Institute of Health family Welfare, Delhi
3	**MoP**: Power	SGKC - Smart Grid Knowledge Centre, Gurugram
4	**MoPSW**: Ports, Shipping & Waterways	NTCPWC, IIT Madras - National Technology Centre for Ports, Waterways & Coasts
5	**MHI**: Heavy Industry	• CMTI - Central Manufacturing Technology Institute, IISc, Bengaluru • AMTDC - Advanced Manufacturing Technology Development Centre, IIT Madras, IIT Madras
6	**MoM**: Mines	IBM – Indian Bureau of Mines, Nagpur
7	**DoWR,RD & GR)**: Water resources, river development & Ganga Rejuvenation, Ministry of Jalshakti	• National institute of Hydrology (NIH), Roorkee • Central Water and Power Research Station (CWPRS), Pune
8	**DARE**: Agriculture Research and Education	IARI- Indian Agriculture Research Institute, Delhi
9	**MoT**: Ministry of Tourism	Indian Institute of Tourism and Travel management, Noida

Relevant Schemes/Programs where 5G and its use case applications can be integrated by Central Ministries / Departments

S.No	Ministry/Department	Relevant Schemes/Programs
1	D/o Agriculture & Farmers Welfare	National e-Governance Plan Agriculture (NeGP-A)
2	D/o Agriculture Research & Education	Network Program of Precision Agriculture (NePPA) of Indian Council of Agriculture Research (ICAR)
3	Min of Health & Family	Ayushman Bharat digital health Mission, e-Sanjeevani - National Teleconsultation Service, e-ICU, Ayushman Bharat Emergency and Trauma Care Mission, Tele- Radiology
4	Dep for Promotion of Industry and Internal trade	National Logistics Policy, Warehousing standards, Freight Smart Cities
5	Min of Housing & Urban Affairs	National Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
6	Min of Home Affairs	Safe City Projects (under Nirbhaya funds Scheme)
7	D/o Higher Education & Training	National Apprenticeship Training Scheme (NATS)
8	D/o School Education and Literacy	Samagra Siksha Scheme, PRAGYATA- Guidelines on digital education
9	D/o Drinking Water & Sanitation	Jal Jeevan Mission
10	D/o Water, River Development, Ganga Rejuvenation	National Mission for Clean Ganga
11	Min of Tourism	Swadesh Dharshan Scheme 2.0, Domestic Promotion and Publicity including Hospitality (DPPH) Scheme
12	Min of ports shipping and waterways	SAGARMALA programme
13	Min of Heavy industries	SAMARTH Scheme (for Industry 4.0), R&D Technology Innovation Platforms