राष्ट्रीय ब्रॉडबैंड अभियान
National Broadband Mission

सत्यमेव जयते
Department of Telecommunications
Ministry of Communications
Government of India

Online Workshop on

Policy interventions in Power sector

for facilitating smooth rollout of 5G

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Agenda

1	National Broadband Mission & 5G
2	Street Furniture's and small cell deployment
3	TEC recommendations for 5G rollout
4	GatiShakti Sanchar Portal Overview/PM GatiShakti National Master Plan for inventory
5	Discussion Points with Discom/Regulators

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National Broadband Mission

National Broadband Mission was launched on 17th December, 2019

National Broadband Mission target & outcome

KPI	1-year (FY 2020-21)	2-year (FY 2021-22)	3-year (FY 2022-23)	Status as on 30.06.2022	4-year (FY 2023-24)	5-year (FY 2024-25)
Broadband Connectivity to Villages (%)	50%	60%	100%	93.21%	-	-
Availability of broadband Speeds (Mbps)	4	10	25	*Mobile BB-13.67 Mbps *Fixed BB-48.15 Mbps	30	50
Fiberization (Lakh KMs) Cumulative	24	27	30	33.71 Lakh	40	50
Towers (in lakhs) Cumulative	7	8	10	7.23 Lakh	12	15
Fiberization of Telecom Towers (%) Cumulative	35	45	55	35.11%	65	70
Mapping of Fiber Cumulative	10%	40%	60%	69% (Govt. PSUs)	80%	100%

What is 5G Technology ?

- Meets growing demand of large Bandwidth, throughput and ultra low latency
  - Support large number of devices

- Involves densification of network, small cells need to be deployed at short (200-300m) distance
  - Street furniture such as Pole, streetlight, traffic light etc. is the answer

- Win-Win situation for both TSPs & authority that owns street furniture

- Huge capital expenditure (CAPEX) Saving for the Nation as a whole

Towns-Areas targeted for 5G rollout in Phase-1

Types of Street Furniture

Street furniture such as poles, street lights, electricity, traffic lights, advertisement hoardings, bus shelter and towers identified by DOT as suitable national asset for deploying small cells

Street Road Gantry

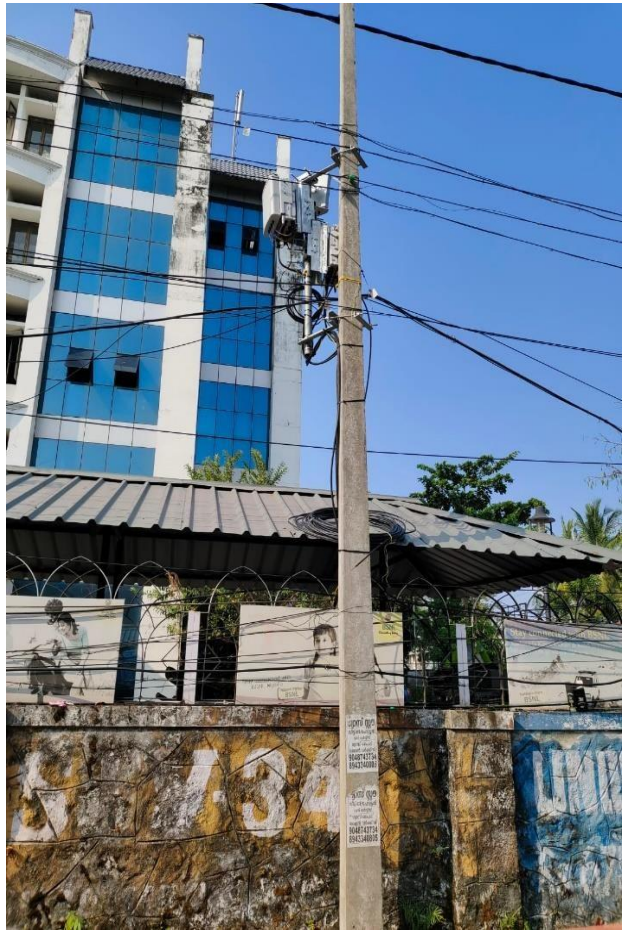
Bus Shelter

Electric Pole

Street Lights

Street Road Signal

Case Study-5G Small cell deployment at Ernakulam- Kerala by KSEB



5G cell deployment - KSEBL

POC- Installation of 5 G cell at Ernakulam – Kerala

PoC for WiFi Access Point on Electric Poles

Small Cell Power tapping on Electric Poles by KSEB

Initiative like one taken by the KSEB w.r.t. deployment of the small cells and the aerial fiber on their electricity poles need to be explored across the country with other DISCOMs as well.

Telecom Engineering Center (TEC) recommendations for speedy 5G rollout

- Permission to TSPs for use of existing/upcoming EB poles/electric poles or install their own poles to carry out Aerial Fiber cabling
  - Process-one time bundled permission for small cell deployment, power connection and aerial cable laying.
  - No further permission should be needed from municipal corporation and other authority.
- Uniform implementation of RoW rules across states, union territories and municipal bodies.
  - Fees must be publicly disclosed, competitively neutral, technology neutral, non discriminatory and based on actual direct cost
- Permissions by following publicly available criteria that are reasonable, objective and non discriminatory
  - Disposal of application in less than 60 days
- Common power consumption bill for large no of small cells.
- All states EBs on common platform for uniformity in process

Small Cells-Weight, Power Consumption and Dimensions

TYPE OF SMALL CELL	COVERAGE RADIUS	POWER CONSUM-PTION	TRANSMIT POWER PER CARRIER PER TRANSMIT PA	NUMBER OF USERS (APPROX.)	BACKHAUL TYPE	WEIGHT APPROX.	TEMP.
Indoor cells	10 – 50 m	50 – 100 W	100 – 250 mW	8 – 16	Wired, fiber	< 2 kg	+5 C to +40 C (indoor)
Pico cells	100 - 200 m	60 – 150 W	250 mW – 5 W	32 – 100	Wired, Fiber, Microwave	5 – 12 Kg	-40 C to +55 C (outdoor) +5 C to +40 C (indoor)
Micro cells	200 m – 1000 m	100 – 500 W	5W – 20W	200	Wired, fiber, Microwave	5 – 20 Kg	-40 to +55 C
Street micro	250 m – 2500 m	200 - 500 W	20W	200 – 400	Wired, fiber, Microwave	6 – 20 Kg	-40 to +55 C
High band mm wave	100 – 1000 m	200 – 500 W	Total EIRP: 53 – 62 dBm	32 – 200	Wired, fiber	6 – 15 Kg	-40 to +55 C
Base band unit	NA	50 – 400 W	Processing unit	Configurable	Wired, fiber, Microwave	5 – 20 Kg	0 – 55 degree

Power Requirement for Small Cell Deployment

- Power supply must be made available continuously for the small cells. Arrangements for backup supply provision at the street furniture sites.
- Typical 4-6 hrs. of power back-up has to be considered depending upon the EB availability & TSP requirements.
- Typical weights in dimensions of different parts of power supply are as below:

	Weight	Dimension WxDxH in mm
Power Plant w/o rectifier	13Kg	447x395x128.7
Rectifier	3.9Kg	placed insde PP
Battery Bank	29.5Kg	447x395x128.7
DCDB	5.9Kg	447x395x128.7

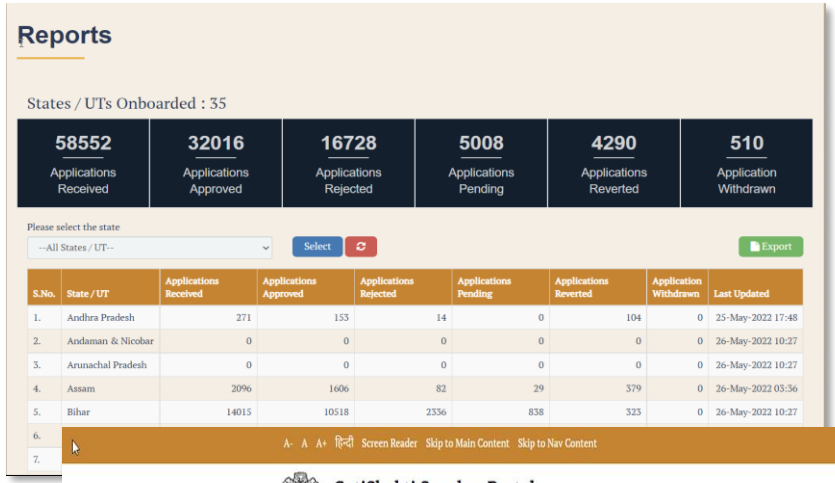
Charges of Pole in different States

Charges recommended in draft RoW Policy: Max Rs100 per pole per year

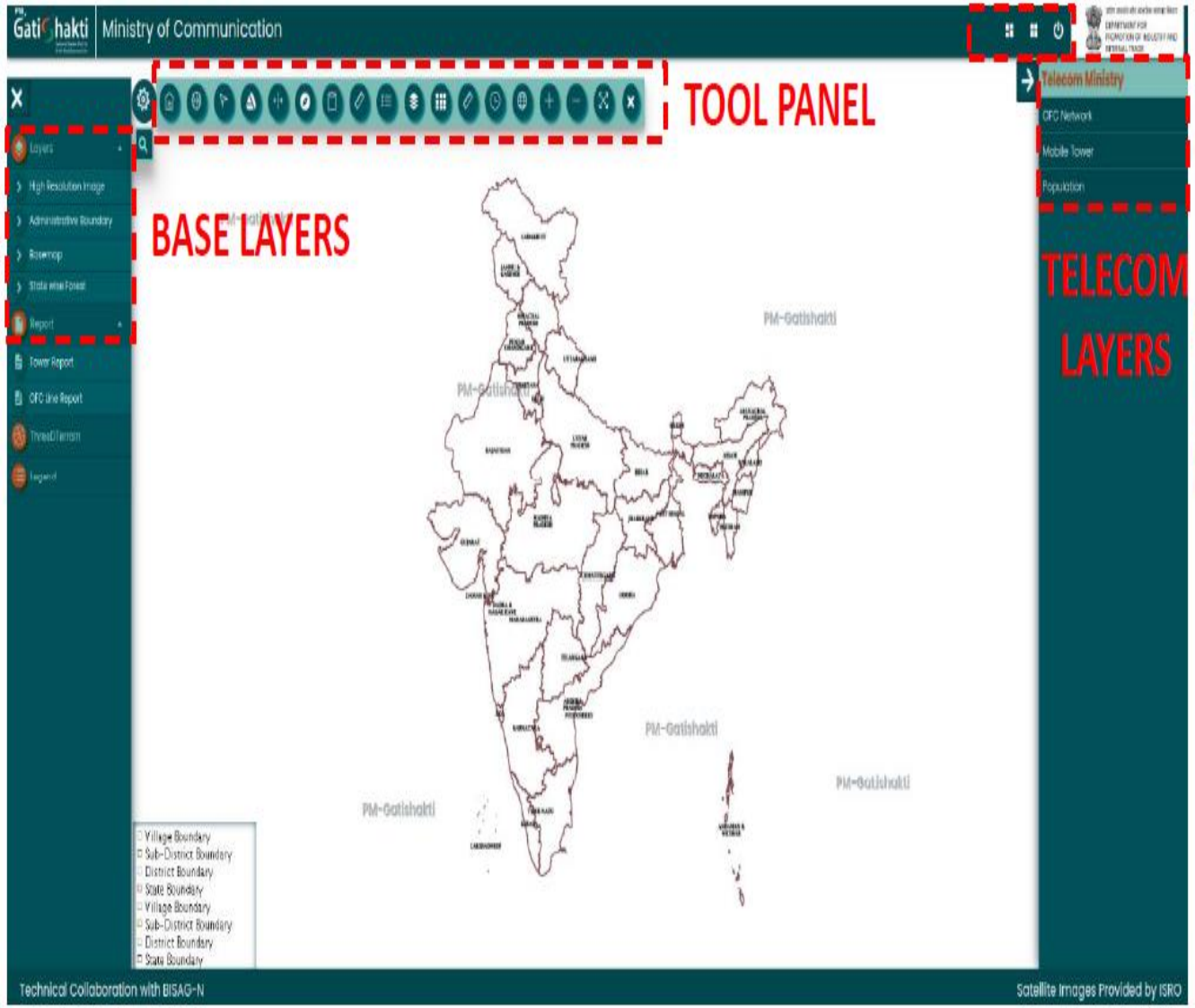
S. No.	State	Rates/Annual Charges/Pole (INR)
1	Andhra Pradesh	600 and 420 for urban and rural
2	Assam	1500
3	Bihar	120 for Municipal Corporation
		110 for Nagar Parisad
		100 for Nagar Panchayat
		60 for Rural Area
4	Haryana	INR 500
5	Jammu and Kasjmir	INR 500
6	Ladakh	INR 250 and 500 for uncovered and covered area
7	Manipur	Annual charge per pole for use of street light poles to carry OFC/Aerial cabling - Rs. 200
8	Delhi	Rs 20,000/- per Pole for 5 years
9	Odisha	INR 100 and 50 for urban and rural area
12	Telangana	Rs 180-Rs240 per pole per year Rental

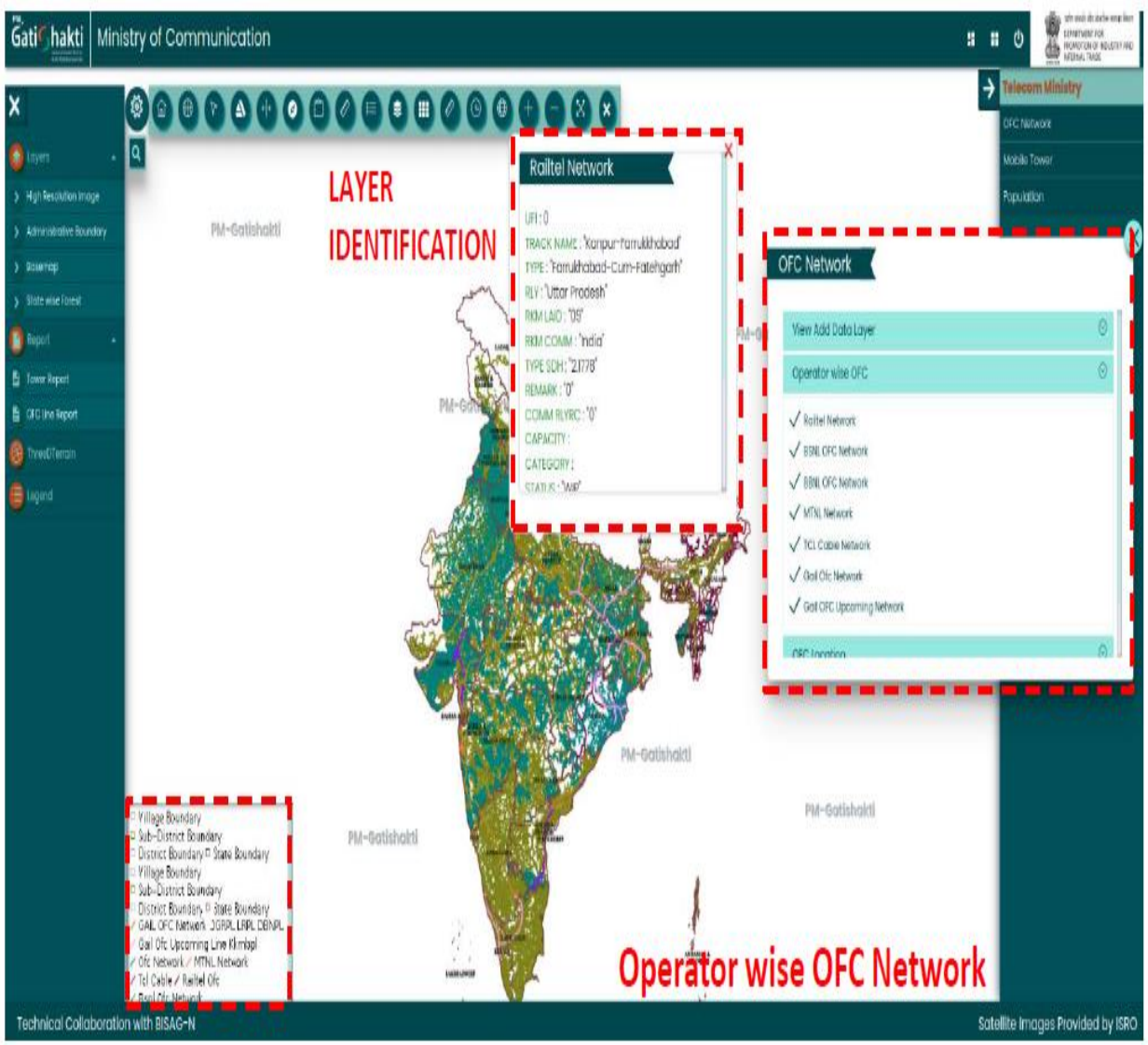
GatiShakti Sanchar Portal for Centralized RoW permission

- **Portal was launched on 14th-May-2022 by Honble MOC**.
- 36 States and UTs onboarded
- Integrated with ROW Portals of M/o Road Transport and Highways; M/o Railways etc.
- Dashboards & Report of all states is available. Application Received, Approved, Rejected, withdrawn & Pending.
- District wise Status can also be tracked.



PM GatiShakti –National Master Plan for Multi-Model Connectivity

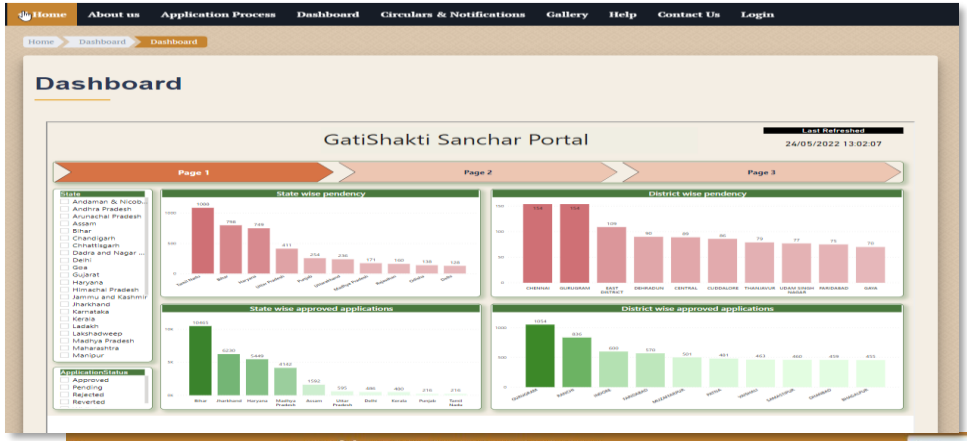




The Layer panel helps to visulaize spatial layers on the map. Spatial layers include high resolution images, administrative boundaries,base layer,operator/stae-wise OFC network. Discom need to map their utilities for easy planning.

How GatiShakti Sanchar Portal can help for 5G rollout

- All states Discom can integrate their portal with centralized Row Portal for bulk permission.
- Status of Pending RoW application with different kind of dashboard can be seen for quick review.
- Inventory and other layers of street furniture can be mapped on National Master plan
- Orders, Policies and Circular available on the portal for easy access.
- Dedicated 10x7 facilitation desk call centre (Mon-Sat)



Discussion Points with State Discoms/Regulators/CEA

1- What should be the Policy for 5G rollout for street furniture?

Discom need to follow policy for 5G rollout in alignment with State Central RoW policy

2. What will be the process for Bulk Row Permission?

There is need to be a facility for bulk RoW permission since no of such poles, which may be used for 5G cell deployment may be in thousands.

3. If one Time RoW approval for Pole, Power and Aerial cable deployment in 4G/5G rollout possible?.

4. If common electricity billing feasible? since the Telecom service providers will deploy thousands of such 5G cells, it will be better to provide them bulk billing.

5. How Power reliability for small cells deployment can be assured for network up time?

6. Can Discom integrate their portal with Gatishakti Sanchar Portal for bulk RoW approvals to ensure approvals within 60 days and deemed approval clause as per IT RoW 2016 rule?

7. How National Broadband mission can support Discoms for RoW permission, Portal integration and Inventory mapping on PM Gati Shakti NMP?

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Request Suggestions to take the Mission Forward

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Thank You