

TECHNICAL SESSION

# PM-WANI & Open Roaming

*The catalyst for ubiquitous connectivity*

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*Connecting the next user — without leaving the last one behind.*

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# The shared goal: ubiquitous connectivity

**Any user. Any hotspot. Anywhere — seamlessly.**

**PM-WANI has enabled unlimited internet to homes that never had it before.**

The rails are built. The goal now is simple: **more hotspots, and more people benefiting** — and how we grow from here decides who gets included.

**As low as ₹5**

unlimited internet — already live

**~4.1 lakh**

PM-WANI hotspots live in India today

**10 million**

the shared ambition for this decade



START WITH THE BENEFICIARY

# KYC: Know Your Customer

Before we optimise for roaming, ask the real question: **who is the intended user of PM-WANI?**



**Aarti**

*The upwardly-mobile user*

- Moves across the city all day; has mobile data
- Wants to hop between hotspots without re-login
- Roaming is a genuine convenience for her

**Roaming: a real win**



**Ramesh**

*The connectivity-deprived user*

- Connects at a few known, fixed spots
- Price-sensitive; often on a budget smartphone
- Affordable access where he already is comes first

**Roaming: a bonus, not a barrier**



**The theme:** roaming is good in intent — it should extend access for Aarti, and never become a gate that excludes Ramesh.



THE DESTINATION

# Open Roaming & its enablers

## One identity. Connect anywhere.

No re-authentication, no friction — a genuine win for the mobile user.

*The enabling technology already exists — and is globally proven through OpenRoaming-style federations.*

### Central Registry Based

Cookie based credential sharing.  
App provider brokered authentication.

### IEEE 802.11u

Pre-association network discovery via ANQP — a device can learn about a network and its services before it joins.

### Passpoint / Hotspot 2.0

Automatic, credential-based secure connection — cellular-style roaming for Wi-Fi. OpenRoaming builds directly on it.



**The takeaway:** the technology is mature and proven — the exciting work is in how we roll it out.



LEARNING FROM EXPERIENCE

# The hard part isn't technical

Around the world, the lesson from seamless roaming is consistent: the breakthrough comes not just from new technology, but from aligned incentives and collaboration.

01

## The technology is ready

Open standards for seamless, secure roaming already exist and are globally proven.

02

## Alignment is the unlock

Where roaming reaches scale, it is because stakeholders aligned incentives and chose to collaborate.

03

## Collaboration compounds

Open, shared coordination is what turns technical capability into real-world reach.



If roaming were only a technology problem, it would already be solved. **What it needs is alignment.**



FROM INTENT TO REALITY

# The way forward: PDOAs coming together

PDOAs share a common incentive to grow the ecosystem — which makes them naturally placed to collaborate and build roaming the open way.

## NOW

### Bilateral roaming

Already permitted in PM-WANI — the natural, low-burden starting point.

## NEXT

### Standards-based federation

Scale it via tech such into a true federation.

## GOAL

### Ubiquitous open roaming

Seamless for Aarti — while access for Ramesh is never gated.



**Decentralised and inclusive** — no single gatekeeper. An open model that serves Aarti and Ramesh alike.



SEQUENCING, NOT A TRADE-OFF

# Deploy fast, build roaming in parallel

Rapid hotspot deployment and open roaming are not competing priorities — they advance together, each making the other more valuable.



## DEPLOY NOW — THE PRIORITY

- Every new hotspot puts more people on affordable internet, **today**
- Density is the foundation everything else builds on
- The fastest, highest-impact win available right now



## BUILD ROAMING — IN PARALLEL

- Begin with bilateral roaming and grow it as the network thickens
- So seamless roaming is ready exactly when density makes it shine
- Both tracks advance at once — no either/or



Speed today compounds the value of roaming tomorrow — **pursue both, together.**



A THOUGHT EXPERIMENT · WHAT IF?

# Inclusive by design — and zero-burden

Imagine the reach if joining and using PM-WANI cost next to nothing — for first-time users and small entrepreneurs alike.



## Keep budget phones in

A browser-based, one-click login alongside the app would let any basic smartphone connect — no download.

WHAT IF ACCESS WERE UNIVERSAL?



## No new hardware

A secondary SSID on the CPEs people already own could turn 45M+ broadband lines into hotspots — no new router.

WHAT IF EVERY LINE WERE A HOTSPOT?



## Affordable backhaul

Open, parity-priced bandwidth via dark fiber (BharatNet) would keep running costs low everywhere — especially in rural areas.

WHAT IF COST WERE NO BARRIER?



**A thought experiment** — imagine the reach if these barriers simply fell away.

# PM-WANI can be India's next UPI Moment

*Open roaming is the destination.  
Inclusive openness is the road.*



Inclusive by design



Rapid PDO deployment



Bilateral PDOA collaboration



Low-friction access + roaming

*More hotspots. More people online. No one left behind.*

**Thank you**