



# 'Brief Overview on Emerging and converging technologies

# Emerging and Converging Technologies in Broadcasting

## Content Production

HD/4K/8k – Live Coverages, MoJo

Virtual Reality (VR) – Immersive experiences (Gandhi exhibit)

Augmented Reality (AR) – Election Results

Artificial Intelligence(AI)/Machine Learning(ML) – Real time Subtitling

## Distribution/ Delivery Platform

Terrestrial – Digital and Direct to Mobile/5G Broadcast

Satellite – Direct to Home and On-Demand

Cable/ Broadband – Digital and Interactive

Over-The-Top (OTT) – Anytime Anywhere

# HD/4K/8K – Live Coverages

## Live Coverages in 2015

- SD OB Vans
- HD Cameras
- Fixed locations with Cabling

## Live Coverages in 2022

- Multiple HD OB Vans
- 4K Cameras
- MoJo
- 360 degree Experience
- Wireless Robotic Cameras





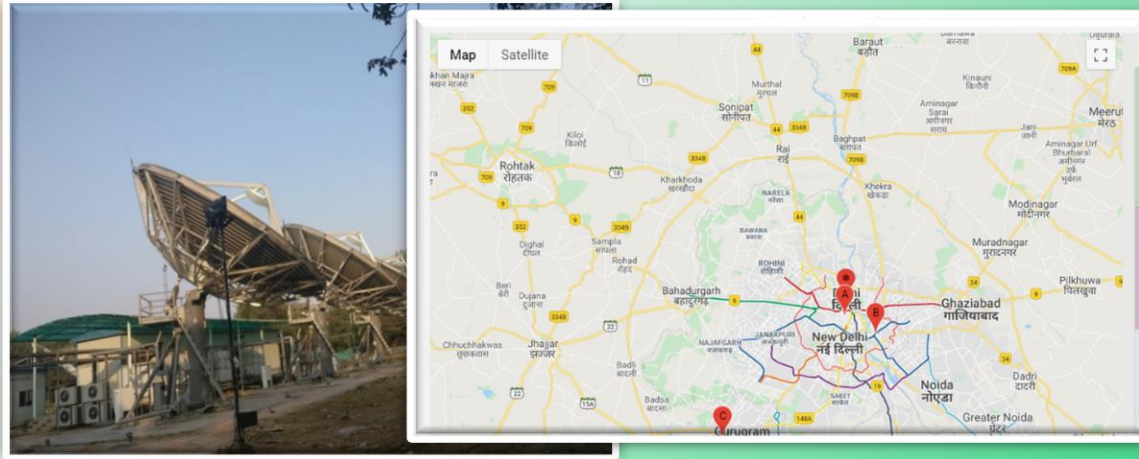
# Satellite Technologies – DD Free Dish DTH

## DD Free Dish DTH in 2015

- 24 Public TV channels
- 41 Private TV channels
- 24 AIR Satellite Radio channels
- 1.8 cr households

## DD Free Dish DTH in 2022

- 91 (i/c 51 educational) Public TV Channels
- 76 Private TV channels
- 48 AIR Satellite Radio channels
- More than 4.3 crore Households
- Online Set Top Box Dealer Locator



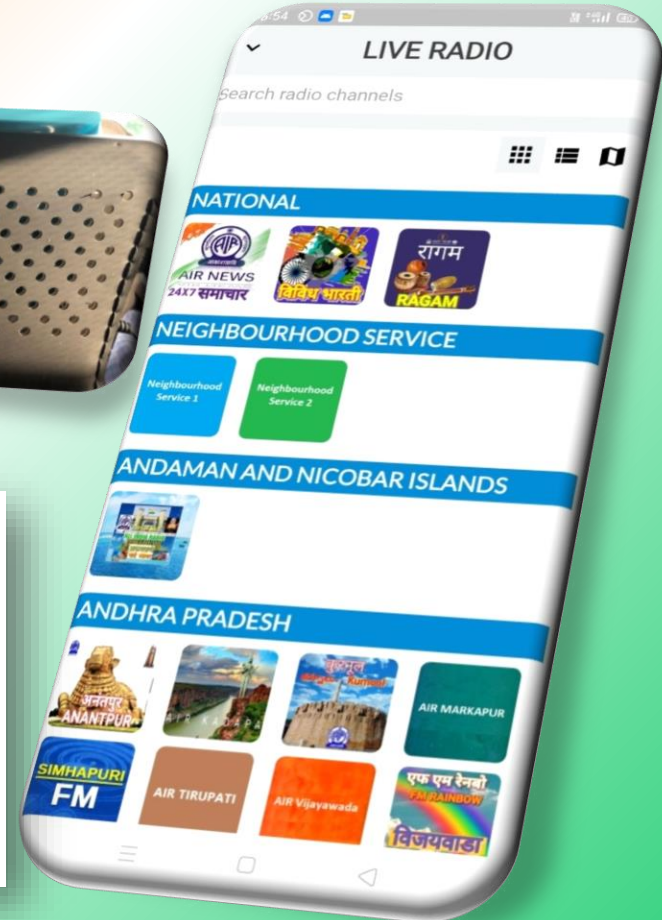
# Digital Radio

## Digital Radio in 2015

- Few Digital Transmitters in experimental mode

## Digital Radio in 2022

- NewsOnAir App –
  - 260+ Live Radio Stations;
  - 2.5 Million Users
- Multiple Digital (Medium Wave) Radio Transmitters
- Digital FM Trials
- Visual Radio Trials
- Convergence between Audio & Video streaming through Direct to Mobile Broadcasting/ 5G Broadcast



# OTT – Anytime Anywhere

## OTT in 2015

- Couple of YouTube Channels

## OTT in 2022

- Radio on Demand –
  - Podcasts
  - Alexa
- TV on Demand –
  - 90+ YouTube Channels
- Digitised Archives
- Billion+ Views



## Global Footprint of Prasar Bharati

### • **Combination of Satellite, OTT and Cable TV**

- In Korea on myK App Platform
- In Bangladesh in Local Cable TV
- OTT in UK, USA, Canada through YouTube, YuppTV
- USA, Caribbean through ITV Cable
- DD FreeDish DTH through technical spill over in SAARC, Tibet
- GSAT coverage in rest of Asia
- NewsOnAir users in (above and) rest of world

# MoU by Prasar Bharati with IIT Kanpur

- ❖ Prasar Bharati has entered into an MOU with IIT Kanpur for collaborative activities in the area of mutual interest.
- ❖ Presently 3 R&D projects are being undertaken
  - Next Generation Broadcast Technology trail solution/ roadmap for Digital Terrestrial Broadcasting consistent with emerging standards.
  - Automatic Speech Recognition for Speech subtitling
  - Archival content retrieval through audio and text query
- ❖ Recently Conclave on “Direct to Mobile (D2M) Broadcast & 5G Broadband- Convergence Roadmap for India” organized by IIT Kanpur (on 01.06.2022).



# New Initiatives under 5 year plan (2021-26) proposal by Prasar Bharati



## New Initiatives under 5 year plan (2021-26) proposal

Augmented Reality & Virtual Reality in Television Broadcasting

Machine Learning & Artificial Intelligence  
(ML & AI) in the programme production

Pilot on Remote production

Pilot on Studio Automation

File Based Workflow in Broadcasting

Channel Payout in the Cloud

Exploring Newer technologies like OTT and  
Direct to Mobile Broadcast

Automation for unmanned operation of FM transmitter

# Challenges of Emerging and Converging Technologies

Examples of Converged platforms in use in Prasar Bharati:

- DTH (Radio + TV Services)
- DRM (Radio + VAS)
- NewsOnAir app (Radio+TV+VAS+multimedia)

DTM/NextGen Broadcast is upcoming unified converged platform to meet needs of broadcasters (for Radio+TV+VAS+MultiMedia) and IMT for Video/Multimedia offload.

In a scenario where content is increasingly viewed on smartphones and smart-devices as opposed to traditional televisions, the capability to directly broadcast to such smart devices, targeted advertising etc. make DTM preferred choice.

Availability of requisite Spectrum (526-582 MHz) for pan India rollout of DTM (converged platform), need to be ensured. The quantum of spectrum (526-582 MHz) required for DTM services will primarily depend on appropriate architecture (MFN/SFN/Hybrid) to be used for the future DTM expansion as well as number of Multiplexes to be planned at different locations in the service area.



**Thank You**