

# Broadcasting Service & Spectrum Requirement

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### DOORDARSHAN

- The TV BROADCASTER



established on 15 September 1959

India's largest broadcasting organisations in terms of Broadcasting infrastructure

Doordarshan has 36 satellite channels

5 channels (DD-National, DD-News, DD-India, DD-Sports and DD-Tamil) are also available in HD

**DD Free Dish – FTA DTH Platform**

116 TV channels; 48 radio channels of AV; 302 educational channels



### AKASHVANI

- The RADIO BROADCASTER



serving to its audiences since its inception  
- living up to its motto – 'Bahujan Hitaya : Bahujan Sukhaya'

One of the largest broadcasting organisations in the world in terms of the number of languages of broadcast and the spectrum of socio-economic and cultural diversity.

Akashvani originates programming in 23 languages and 179 dialects.

## OTT Platform - WAVES



### PRASAR BHARATI OTT SERVICES



# Importance of Broadcasting

## Reaching a wide audience

- can reach more people more quickly than any other media

## Informing the public

- primary source of information about current events, politics, and social issues
- essential for a healthy democracy

## Educating the public

- can educate people about science, history, culture, and the arts.
- especially important for people who don't have access to formal education

## Entertaining the Public

- a primary source of entertainment - provides Music, Drama, Cartoon and Movies

Broadcasting sector is the cultural ambassador of the country and has given a unique identity to India

# Public Service Broadcasting

Role of Prasar  
Bharati - the Public  
Broadcaster of  
India

Encourages  
participation

Provides  
balanced  
coverage

Presents  
accurate  
information

Covers  
underrepresented  
topics

- To provide a variety of programs catering to a wider range of interests
- Encourages citizens to participate in public life and to better understand themselves

- aims to provide a space for all sides of an issue to be heard

- aims to present information in an appropriate manner that is free from topics that are not provided by commercial broadcasters

- aims to cover topics that are not provided by commercial broadcasters

# Terrestrial Broadcasting

- **TRAI Recommendation towards National Broadcast Policy**
  - Exploring the expansion of digital terrestrial broadcasting to television and mobile devices as a complimentary broadcasting service to co-exist with cable and satellite broadcasting
  - Enabling the delivery of digital TV content on mobile devices utilizing digital terrestrial broadcasting technologies, e.g., 5G-broadcast and D2M (Direct-to-Mobile) technology
  - Leveraging digital terrestrial broadcasting for uninterrupted services during emergencies and natural disasters for public safety through television, radio and mobile
  - Ensuring effective utilization of spectrum allocated for terrestrial broadcasting and earmarking globally harmonized spectrum for Programme Making and Special Events (PMSE)

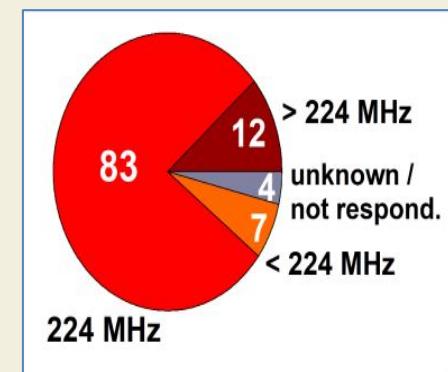
# Terrestrial Broadcasting

## Spectrum requirement for Terrestrial TV Broadcasting in UHF band

✓ The UHF band 470-694 MHz is primarily Broadcasting band for terrestrial TV broadcasting across world

- In Region-1, this band is allocated only to BROADCASTING service
- In Region-2, only BROADCASTING Service has Primary status
- In Region-3, BROADCASTING Service has Primary status along with FIXED and MOBILE

✓ ITU-R Report BT2302-1, iterates for R1, for Terrestrial TV Broadcasting, 12 countries expressed a requirement for more than 224 MHz, 83 require exactly 224 MHz and 7 Administrations indicate a requirement for less than 224 MHz.



# Terrestrial Broadcasting

## Spectrum requirement for Terrestrial TV Broadcasting in UHF band

- ✓ The UHF band 470-698 MHz is primarily Broadcasting band for terrestrial TV broadcasting across world. In India, This is limited to 582 MHz. In this band also there is restriction imposed for the use of 526-582 MHz
- ✓ Availability of spectrum for terrestrial TV broadcasting has already been constrained by identifying 2 parts of broadcasting band:
  - 700MHz band (698-804 MHz) and
  - 610-698 MHz for IMT services
- ✓ Availability of spectrum is very crucial for planning DD TV Transmitters
- ✓ Thus, the availability of Frequency Band 470-582 for Terrestrial TV Broadcasting need to be continued

# Terrestrial Broadcasting- Future Roadmap

- ❖ Doordarshan has entered into an MoU with IIT, Kanpur to establish a roadmap for:
  - Development of technology roadmap for DTT/D2M architecture
  - Upgradation of existing DTT platform with NextGen technology
  - Establishment of Proof-of-Concept including field trials in various use cases
  - Identification of new revenue streams for the Public Broadcaster to leverage the above

# Terrestrial Broadcasting- Future Roadmap

## IIT-K Key findings for D2M

- Hybrid transmission spectrum - combination of HP/HT and LP/LT
- will have improved outdoor and indoor coverage
- 470-582 MHz would be required for Direct to Mobile broadcasting
- NGB platform will include Doordarshan/Akashwani and private broadcaster programmes
- Possibility of allocation from USOF for the roll-out of this platform as this will be primarily be public service broadcasting
- Mandatory/suitable provision of reception on compatible devices TVs/smart phones and other devices

# Terrestrial/ D2M Broadcasting- Benefits

## Benefits to the Consumers

Will enable end user to access unlimited TV and video content without paying additional charge for data

Superior quality experience to all users regardless of the number of simultaneous users of the same content

In addition to conventional TV programs, will get video on demand & educational content.

## Benefits to the Broadcaster

Greater achievement for fulfilling duty of public broadcaster

Will increase the consumer base as programs can be accessed on variety of devices

Will enable value added service - video on demand, educational content, emergency alerts, disaster management etc.

Will enhance ability to monetize

Targeted advertising

## National & Strategic benefits

During the Covid-19 pandemic, nation has witnessed the importance of reliable broadcast media (vs unreliable social media)

Ability to broadcast directly to millions of citizens on their devices TV/Mobile phones/laptops/PCs

Emergency alerts directly, reliably and without depending on Internet

A terrestrial fall back will be available for broadcasting content of strategic/national importance in case of catastrophic failure of satellite and internet

# PMSE (Program Making & Special Events)

- **use of radio spectrum to support the capture, production, and broadcast of high-quality audio and video content for a wide range of live events and media productions**

## Audio PMSE:

- Wireless microphones (handheld and body-worn)
- In-ear monitors (IEMs) for performers
- Talkback systems and two-way communication devices for production teams
- Audio radio links

**PMSE** is essential for numerous contexts, ranging from daily operations to major global spectacles:

- Televised sports events: CWG, Olympics, Formula 1
- Live entertainment: Music festivals, theatre, concerts
- Media production: Film & TV production, news gathering
- National events: Republic day, Independence day, G20

## Video PMSE:

- Cordless/wireless cameras
- Portable or mobile wireless video links
- Service links for remote and effect control and general team connectivity

## Worldwide Spectrum Used

- UHF TV Band 470-700 MHz;
- 1-5 GHz;
- 2.3 GHz,
- 3.4 GHz,
- 3.8-4.2 GHz



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# THANK YOU