



सत्यमेव जयते



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प्रसार भारती PRASAR BHARATI Broadcast Technology and Future Plan

Modern Broadcast Technology

Technology upgradation and evolution of new Technology is a continuous process . Acceptability of new technology depends upon its benefits to all stakeholders

Stakeholders are :-

- Broadcasters – who want to maximise its reach and thus earning more revenue
- Listeners – who want good quality content of its choice , on its own language and at its own convenient time
- Manufacture of equipment – want to scale up the sales of its product
- Regulator – want easy way to regularize the broadcasting ..

Modern Broadcast Technology

Broadcasting Network has three main components –

- Transmission
- Studio
- Connectivity

Modern Broadcast Technology- Transmission

Modern audio transmission techniques are digital and better than traditional analogue mode due to :-

- It provides multiple channels per transmitter
- It provides better quality of signal and value added services
- It provides emergency warning functionality and is better suited for disaster management
- These technologies are power efficient and may be called green technology
- This is best suited for mobility and reception in mobile .
- Best suited to operate in PPP model .

Modern Broadcast Technology- Transmission

- Major Digital technologies in MW and SW BAND
 - DRM (Digital Radio Mondiale)Technology
 - IBOC (in band on channel) technology
- Major Digital Technologies in VHF Band
 - DRM plus
 - HD radio
- DAB (Digital Audio Broadcasting) in Band III (174-240 MHz) and L band (1452-1492MHz)
- Other non terrestrial broadcast are :-
 - Live streaming of programme channels on internet which can be listened on mobile by downloading apps of service provider .
 - On DTH platform .
 - Direct to mobile service in 5G.

Modern Broadcast Technology- Studio

- Use of Audio over IP for Transport of Multiple Audios between Different Locations.
- IP Based Routing instead of TDM Routing.
- Integration of Social Media with Live Transmission of Radio.
- Remote Joining of Talent over Internet with Radio Presenter in Studio.
- Simultaneous Radio & Visual Radio (Radio with Video). Radio over normal FM & Visual Radio over Internet.

Modern Broadcast Technology- Connectivity

Connectivity is required to link programme from programme originating station to programme broadcasting station

- linking of programme are being done through studio transmitter link. (if programme originating station and programme transmitting station are within the city) and through satellite/ dedicated leased line if transmitting station is far from programme originating stations. By using open mode technology Single channel per carrier (SCPC) can be converted multi channels per carrier (MCPC). Which has given way to spectrum efficiency and reduced cost. . Similarly digital technology in studio transmitter link has allowed transport of digital signal from programme originating centre to programme transmitting station .
- New trend is to use cloud for storage and downlink as per when requirement by other programme generating center (Non linear mode).

Suitable Broadcast Technology?

- Technology is a enabler.
- Success of technology depend upon – where is to be utilized
- AIR is adopting modern technology which is most suitable in Indian context and fulfilling its objective

All India Radio- Objective

All India Radio is a public service broadcaster and following are the objectives to be fulfilled :-

- To entertain, inform and educate masses.
- To provide good quality of multiple signals in every part of the country
- To provide program in major languages and dialect.
- Extend global reach to showcase our culture, progress made in the various fields.

AIR Network: Beginning

- Broadcasting in India actually began in June 1923.
- The Indian Broadcasting Company (IBC) came into being on July 23, 1927.
- In April 1930, the Indian Broadcasting Service came into existing.
- In the following month Akashvani Mysore, a private radio station was set up.
- On June 8, 1936, the Indian State Broadcasting Service became All India Radio.
- All India Radio (AIR) has been serving to inform, educate and entertain the masses since its inception. Initially the broadcasting was started with Amplitude modulation on Medium Wave and Short Wave frequency band.

AIR Network: Present

- AIR originates programming in 23 languages and 179 dialects.
- AIR has 653 transmitters (122 MW, 7 SW and 524) operating from 501 broadcasting centres across the country.
- AIR coverage is about 90% area and about 98% population of the country.
- FM broadcast is available to about 59% of area of the country.
- AIR is also live streaming of about 291 channels on Internet Platform which can be received worldwide through “News On AIR” app on smart mobile phones.
- 48 AIR’s Channels have also been provided on DTH Platform which can be received by using DD Free dish set top Box throughout the country.

Milestones in Broadcast Technology in India

- Broadcasting started in India with AM broadcast in 1923.
- FM Broadcasting started in India in 1977. It is still most popular and accepted mode of broadcasting in India,
- Digital (DRM) broadcast started in India in 2014 in SW and MW band. DRM broadcast is available to about 70% population of the country., Most of the car manufacturers are providing DRM receiver in their high end vehicles .
- Live streaming of AIR kendras started in India in 2017 on internet, this made AIR broadcast available internationally.

Adoption of DRM Technology

AIR adopted DRM technology for digitalization in MW and SW due to:-

- Open source technology.
- Utilization of existing infrastructure and replacement of old valve type transmitters with state of art solid state transmitters. Digitalization cost was mere 1% of the total cost .
- Suitability of transmission in Analogue mode or Simulcast mode or pure digital mode. It helped in maintaining current services without affecting digitalization plan . Some of the transmitters are running in pure digital mode and rest are being used for limited hours in pure digital mode . AIR is trying to popularize digital transmission . All will be switched to pure digital mode as and when favorable condition achieved.
- Replaced Transmitter are power efficient which required at least 25 percent less power than old valve type
- Digital Transmission quality is superior and comparable to stereo sound quality .
- Availability of More channels per transmitter and value added service.

Adoption of DRM Technology

- AIR has already replaced 35 Nos of various power old transmitters by solid state MW digital Transmitters AND 6 Nos with digital compatible solid state MW Transmitter. AIR has also replaced 3 Nos of SW transmitter with digital SW transmitters .
- These transmitters are providing coverage to 70 percent of population
- We are receiving request from number of listeners to increase capacity of Transmitters.

Future Technology and Plan

- Test transmission of digital technology in FM band like DRM+ and HD Radio has been done. It has advantage of broadcasting multiple FM channels and better utilization of available spectrum.
- AIR is taking move to adopt directed to mobile service in 5G. Which will be provided free of cost.
- AIR is also going forward to provide broadcast through Visual Radio. In which small videos and images will be shared with sound broadcast.
- AIR has digitized its Programme content of historical, social and cultural importance.
- AIR has planned to expand FM broadcast to uncovered areas by installing more FM transmitters (By sharing DD Infrastructure and Power grid corporation infrastructure). These FM transmitters will be digital compatible.
- Open mode system has been adopted for connectivity, which has better efficiency.
- AIR will be able to adopt straightforward any technology in future, which will be popular and widely accepted mode of broadcasting.



Thank you



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