All India Radio's DRM Expansion Plans

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Information based on
a presentation given earlier this year
by M.C. AGGARWAL Chief Engineer
(Projects) provided by AIR

About AIR

- AIR is a **national service** planned, developed and operated by the Prasar Bharati Broadcasting Corporation of India
- AIR has a network of **232 broadcasting centres** with 149 MW, 54 SW and 171 FM transmitters.
- The coverage is **91.79% of the area , serving 99.14% of the people** in the largest democracy of the world.
- AIR covers **24 Languages and 146 dialects** in home services.
- In External services, it covers 27 languages; 17 national and 10 foreign languages.

Plan for ‘Going Digital’

A sub-group of the Planning Commission of the Government of India on ‘Going Digital’ was formed headed by the Member Secretary, Planning Commission and has laid down the migration path from analogue transmission to digital:

Step I- Delhi -2010
Step II - All mega cities -2011
Step III – All Tier II & Tier III cities -2012
Step IV - All other areas -2013homes.

Nationwide Switch off of analogue broadcast by 2015

According to All India Radio, they adopted DRM due to the following reasons:

- DRM is the **universal, openly standardized**, digital radio system, **endorsed by the ITU, and standardized by ETSI offering near-FM sound quality, ease-of-use** and can be used for a range of **audio content, text and data.**

- DRM **is compatible with existing AM bands** (spectrum usage) and services and with other radio services . DRM **operates within existing spectrum allocations**

- DRM provides an **easy path of migration from analogue to digital broadcasting** for a significantly large number of DRM compatible medium and shortwave transmitters in the AIR network.

- DRM **thus maximizes re-use of existing transmitters** and transmission facilities

DRM Trials in India

- DRM Trials in India **were carried out in Delhi in May, 2007**. The trials **were part of the DRM-AIR-ABU showcase** project on DRM simulcast technologies

- The **principle objective** of the project was **to demonstrate and evaluate single channel simulcast which enables simultaneous transmission of analogue and DRM digital medium wave signals using only one transmitter**.

- The **DRM-AIR-ABU Showcase Project also assessed local digital transmissions in the 26 MHz band**

- Two transmitters sites in north Delhi were used for all tests.

SUMMARY OF SIMULCAST TRIAL RESULTS:

- **The AM and DRM coverage using the simulcast mode was confirmed to be equivalent** following a radial route from the transmitter. In some environments within this radial, DRM outperformed the AM reception
- A 100 Km coverage radius was achieved using a transmitted AM power of 96.17 KW and 3.82 KW of DRM signal.
- In the **urban area, they properly covered** by simulcast signal up to 15 KM more than 98% of correctly received locations
- Simulcast **does not interfere significantly the transmitted AM signal** using a set of representative receivers of the Indian market.

DRM Transmissions in India

- Encouraged by the trial results, AIR decided to implement DRM in Shortwave.
- **250 KW SW transmitter at Khampur (near Delhi)** was modified to make it DRM compatible.
- The transmitter was adopted for analog, digital and simulcast operation.
- **AIR started regular DRM service from this transmitter** with a formal launch on 16th January, 2009.
- **Approx 5 hours of transmission are beamed towards listeners in the UK and Europe** between 2315 to 0400 IST on 9950 KHz, with **an additional 3 hours of local transmission within India** from 1430 to 1730 IST on 6100 kHz.

DRM Transmission around Delhi in a radius of 800 Kilometers by NVIS mode on 6100 KHz launched in January 2009

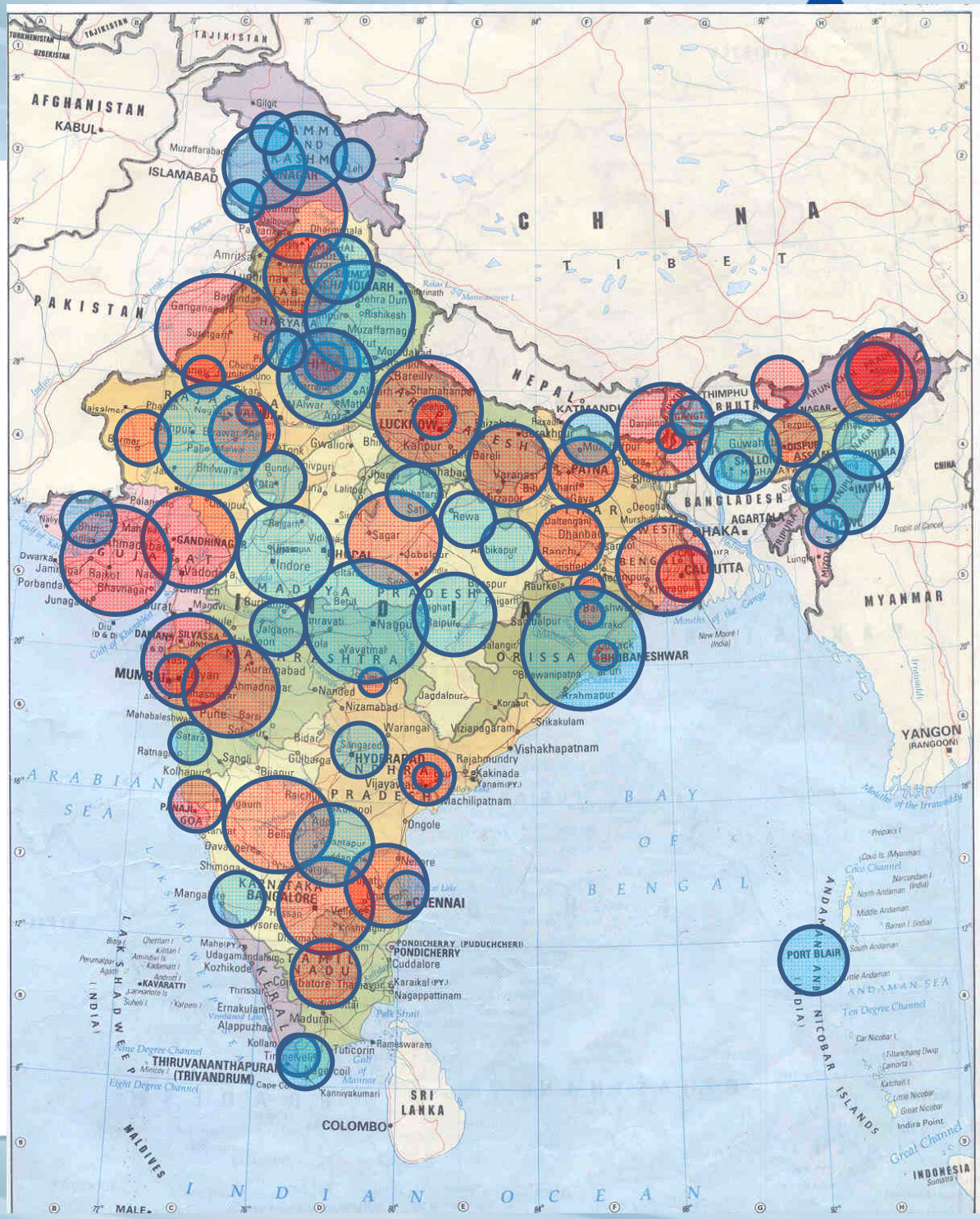
Plan For Digitalization Of All India Radio

- There are plans to introduce DRM transmissions in **34 new medium wave DRM transmitters** in replacement scheme
- **36 existing medium wave transmitters shall be converted** for DRM operation
- **5 new shortwave transmitters** shall be installed in replacement scheme
- Installation of **2 megawatt MW** transmitters

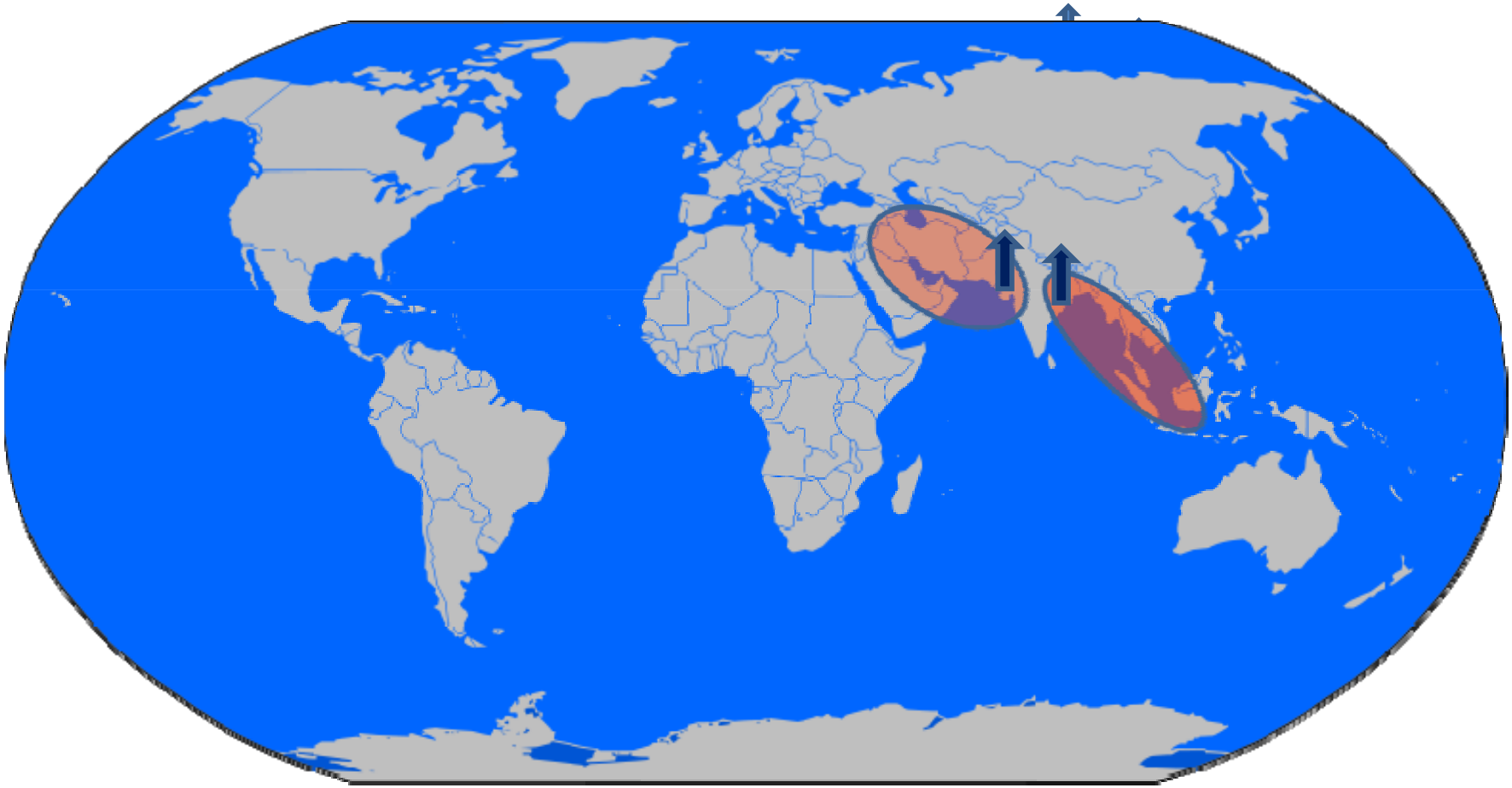
DRM Transmissions in India in MW

INSTALLATION OF NEW MW DRM TRANSMITTER

CONVERSION OF EXISTING MW TRANSMITTER FOR DRM OPERATION



DRM Transmission in India by Megawatt Transmitter at Rajkot & Chinsurah



Challenges:

- Ensuring good reception in urban area full of concrete structures & high man-made noise
- Cost of conversion of Transmitters
- Availability of receivers
- Cost of receivers
- Low-power consumer receivers

Message from AIR "***The most important issues shall be to make available DRM receivers at affordable cost to the vast masses of India. It is expected that receiver manufacturers in India and abroad shall address this issue as DRM is progressively implemented in the next five years".***

THANKS !!