The DRM Consortium
The DRM Consortium

- **Founded in 1998** by international organizations in China to promote the adoption of the DRM standard worldwide
- **Not-for-profit**
- **Around 100 international members**
  (broadcasters, manufacturers, network operators, regulators, research institutes, etc.)
- **Experts and technologists**
  ready to give expert, objective advice on the technology
- **Open** to companies, organisations, associations and individuals who can join at any time

For joining the DRM Consortium, write to:  projectoffice@drm.org
The not-for-profit DRM Consortium supports and promotes the DRM Standard and its take-up globally.
DRM Receives ITU Award - 1st Oct 2014
For its Outstanding Contribution in the last 10 years
In the Field of Telecommunications
DRM Key Features
DRM Key Features

• **More choice** for listeners
  – Up to 4 programmes on 1 frequency
  – Simulcast analog / digital

• **Excellent audio** quality
  – No distortion
  – Stereo and 5.1 surround sound

• **Multimedia Applications**
  – Great listener benefits
  – Extra revenue opportunities for broadcasters

• **Good coverage** area and robust signal
  – Supporting SFN (Single Frequency Networks)
  – Green and energy efficient

• **Automatic tuning**
  – by station name, no longer by frequency
  – re-tunes when leaving coverage area

• **Emergency warning & alert**
  – All stations switch, present audio and text information
DRM Key Features

- **More choice** for listeners
  - Up to 4 programmes on 1 frequency
  - Simulcast analog / digital

- **Excellent audio** quality
  - No distortion
  - Stereo and 5.1 surround sound

- **Multimedia Applications**
  - Great listener benefits
  - Extra revenue opportunities for broadcasters

- **Good coverage** area and robust signal
  - Supporting SFN (Single Frequency Networks)
  - Green and energy efficient

- **Automatic tuning**
  - by station name, no longer by frequency
  - re-tunes when leaving coverage area

- **Emergency warning & alert**
  - All stations switch, present audio and text information

www.drm.org
DRM Trial South Africa: Two Services One AM Frequency
BBC World Service
DRM Trial South Africa: Two Services One AM Frequency
Radio Pulpit
MPEG xHE-AAC – Extended HE-AAC

- Equally suits **speech and music coding at very low bit rates**
- MPEG/ISO standardised in 2012
- Applications:
  Media download (mobile devices), Streaming, Digital Radio, Mobile TV
DRM in the World
Some Key Markets

- India
- Southern Africa
- Brazil
- Russia
- Arab Countries

Map showing DRM Key Markets with countries transmitting regularly in DRM30/DRM+ and countries that have trialled or are trialling DRM30/DRM+ (for a decision).
Population – 1.2 Billion

Public Service Broadcaster - All India Radio
- Transmitters – 574
  - MW – 144, SW – 48 & FM - 382
  - Domestic Coverage – Almost 100%
  - External Services – 72 Hrs/day in 27 Languages (15 Foreign & 12 Indian)

Private FM Broadcasters – 245 Stations
- Coverage – About 30%
- Expansion Planned – 839 Stations

Community Radio Stations - 167

Internet Users – Over 220 Million
India

“One of the world’s largest digital radio deployments”

Transmitters: 39
Investment: Over 3 Billion INR
Power: 8,000 kW
Coverage: 0.6 Billion people
## DRM MW Transmitters - Status

<table>
<thead>
<tr>
<th>Power (kW)</th>
<th>No.</th>
<th>Operational (as reported in Paris GA)</th>
<th>Operational subsequently</th>
<th>Total operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>2</td>
<td>Rajkot &amp; Kolkata</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>300</td>
<td>6</td>
<td>-</td>
<td>Rajkot, Lucknow, Jammu</td>
<td>3</td>
</tr>
<tr>
<td>200</td>
<td>10</td>
<td>Delhi</td>
<td>Bangalore</td>
<td>2</td>
</tr>
<tr>
<td>100</td>
<td>11</td>
<td>Panaji &amp; Pune</td>
<td>Mumbai A, Mumbai B, Vijayawada, Patna &amp; Varanasi</td>
<td>7</td>
</tr>
<tr>
<td>20</td>
<td>6</td>
<td>Delhi, Chennai, Guwahati, Tawang, Bikaner and Barmer</td>
<td>-</td>
<td>6</td>
</tr>
</tbody>
</table>
## DRM SW Transmitters - Status

<table>
<thead>
<tr>
<th>Power (kW)</th>
<th>No.</th>
<th>Operational (as reported in Paris GA)</th>
<th>To be made operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>1</td>
<td>Bangalore</td>
<td>-</td>
</tr>
<tr>
<td>250</td>
<td>1</td>
<td>Delhi</td>
<td>-</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>-</td>
<td>Aligarh</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>
19th Jun 2015
AIR started transmitting two channels – Vividh Bharati and FM Rainbow – in pure digital (DRM) mode from New Delhi from 20kW MW transmitter at 1368 kHz
Significant interest in DRM in **Southern Africa** in last 2 years.

**DRM30 tests** started or in preparation in several countries.

SW DRM transmissions in October 2011, July 2013, April 2014.


**Increasing African countries** attracted to DRM broadcasting benefits (such as Mozambique, Botswana, Zambia).

**Nigeria** adopted DRM and is broadcasting for abroad from Abuja since March 2012 with increased DRM output since May 2014.

**Mozambique (adopted DRM), Zambia, Botswana, (Tanzania)** showing great interest.

**Algeria** adopted DRM and installed transmitters in 2013.

Radio Pulpit has made history by leading the South African radio broadcasting industry into the digital era with the first LIVE digital medium wave broadcast in South Africa in July 2014 in Pretoria and Johannesburg.

Second Channel with BBC content launched on February 1st 2015 with extra features (RSS, Journaline, text - Pretoria News Update) contributed to a S. Africa government consultation including holding a comprehensive workshop with live BBC broadcast from Ascension Island in July 2013 and April 2014, April 2015.

Car industry, receiver and equipment manufacturers show interest
DRM Trial – Expected Coverage (10kW)
Japan acquired four x 300kW short wave Transmitters

First new Transmitter went on-air in April 2013

Three more planned at yearly intervals

All DRM equipped and tested

National decision to reinvest in DRM SW primarily after national disasters
Kingdom of Saudi Arabia

- The **Saudi Broadcasting Corporation** has adopted the DRM digital standard for MW and SW

- MW Transmission stations are located in Gazan, Taiba, Hafr Elbatin, Abha

- SW transmissions take place from Al-Khumra (Jeddah City)

- Current Projects: in Afif, in Layla (Al-aflag), in Duba and Riyadh
United Arab Emirates

7th Dec 2013: launch of the world’s first Malayalam digital radio on UAE airwaves

The channel, Pravasi Bharathi 810 AM, Malayalam Digital Radio (DRM), aims to reach out to millions of listeners streaming music, discussions, news, current affairs and entertainment.

Reaching all Gulf Cooperation Council nations with excellent DRM:
- like FM quality in digital radios
- and super AM quality in ordinary receivers
DRM in Europe
Publication of a report on available technologies for the digitisation of terrestrial radio in Europe: “Digitalisation of Terrestrial Radio Broadcasting in Europe”

That document is a summary of the report of “Considerations for the Digital Transition of Local and Regional Terrestrial Broadcast Radio in Germany” published on 3rd Sept 2013 and consultable on the EBU site https://tech.ebu.ch/digitalradio

• DRM German Platform - the oldest and most active, website, comparative reports between DRM / DAB & DAB+
  - Distribution of data on board of ships (navy, passenger, freight)
  - Test, Kaiserslautern (2008-2010) band II, III
  - Test DRM+, Hannover (2008-2011) band II, III
  - Bit Express broadcasts in DRM+

• Germany

Distribution of data on board of ships (navy, passenger, freight)
On Board Infotainment Service „News on the ship“
- Audio service from Radio Andernach
- RSS news feeds from Deutschlandradio and WAZ-group
- News from n-tv (images, videos)

Usage of existing SW antenna

Outlook:
- On service with **German Navy**
- Tested with **ocean freight vessels** from Germany to China
- Tested with a **cruise ships** from the Baltic sea to Alaska
DRM Signs The EBU Smart Radio Memorandum of Understanding (MoU)

All Major Chipsets Manufacturers have Multi-Standard chipsets ready or announced with DRM!

Dec 2014: Parrot launches ready-to-use multi-standard Radio modules for Automotive
Based on SDR Octopus chip supporting DRM30/DRM+, DAB/DAB+, DVB-T2Lite, ISDB-Tsb, AM/FM

Feb 2014: Siano launches Advanced Multi-Standard Digital Radio Receiver Chip
Supporting DRM+, T-DMB/DAB/DAB+, and Legacy FM Radio –

Dec 2013: Frontier Silicon announces details of its multi-standard chipset with DRM

March 2013: NXP launches Multi-standard and multi-tuner digital radio baseband processors
for DRM radio, HD, DAB, DAB+, T-DMB

Other Chipset manufacturers: Analog Devices, PnP etc.
Latest DRM Receiver

AV DR1401
Full DRM feature set
Available now

Commercially launched at
IBC 2015
ankit@avionelectronics.in

www.drm.org
Latest DRM Receiver AV DR1401
The DRM CONSORTIUM Asks HFCC to pull together all DRM broadcasts in order to make them available at a click of a button (to feature also on new DRM APP.) now receiver is reality!
CONCLUSION

• DRM is new and flexible. It is ready and can be deployed NOW.
• DRM helps you reach all listeners (in city or rural areas).
• DRM creates more channels, offers possibility for more content and multimedia with excellent coverage and sound quality.
• DRM uses existing infrastructure and builds on it.
• No need for multiplexes – be your own master.
• DRM saves energy costs (significantly).
• DRM offers monetisation opportunities and creates JOBS!
DRM Introduction and Implementation Guide

Updated – Version 2
More Information on DRM

www.drm.org

For free monthly DRM updates visit and subscribe to:
www.drm.org/newsletters

Dedicated India page
http://www.drm.org/?page_id=2494

For any inquiries or comments, please write to:
projectoffice@drm.org