

DRM Enables Small Scale Video Application **Diveemo**



Monday 13th September 15:00 to 17:00
Amsterdam, Thomson booth (1. D11)

THOMSON BROADCAST

Presentation on behalf of the DRM CONSORTIUM

Speakers today

- Nicolas Dallery / Josef Troxler
- DRM welcome
Ruxandra Obreja
- DIVEEMO Small Scale Video application
Matthias Stoll
- DIVEEMO Technology and Demo
Alexander Zink

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Welcome note

Nicolas Dallery

Thomson Broadcast, CEO

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Josef Troxler

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Introduction

Ruxandra Obreja

DRM Consortium Chair

BBC World Service Head of Digital Radio Development

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What can DRM offer?



More choice for listeners

- up to 4 programs on 1 frequency
- simulcast analog / digital

Excellent audio quality

- no distortion
- stereo and 5.1 surround sound

Multimedia Applications

- rich information sent along with DRM

Emergency warning and alert feature

- all receivers switch,
present audio and text information

What can DRM offer?



Automatic tuning

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

Good coverage area and robust signal

- supporting SFN (single frequency networks)
- green and energy efficient

AND NOW DIVEEMO!

Diveemo – Small-Scale Video Service over DRM

Matthias Stoll

Member of the DRM Steering Board
and the DRM Executive Board

Thomson Broadcast

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Diveemo[®]

DIGITAL radio mondiale **VIDEO**

Extend your reach....
and present your TV-news on Radio

ONE transmitter covers huge areas, large population and several countries!

- **Shortwave transmission** – the most economic way to reach millions of listeners



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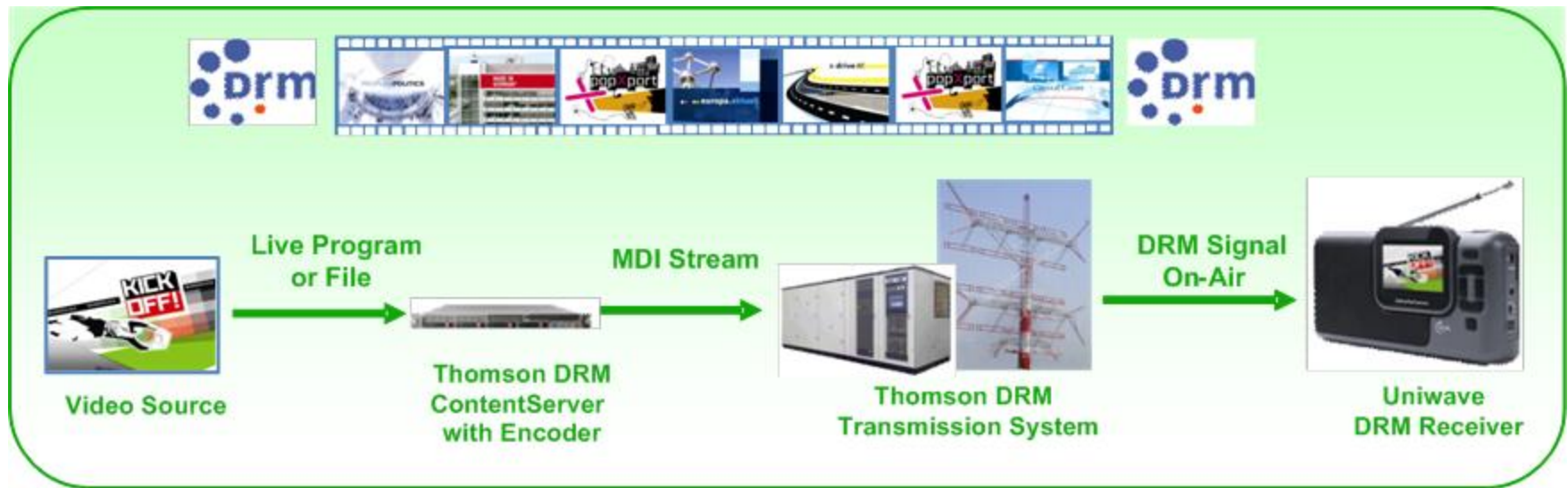
What is Diveemo?

Diveemo is a new application based on DRM. It enables small-scale video and audio services for cost efficient large area distribution of information and education programs

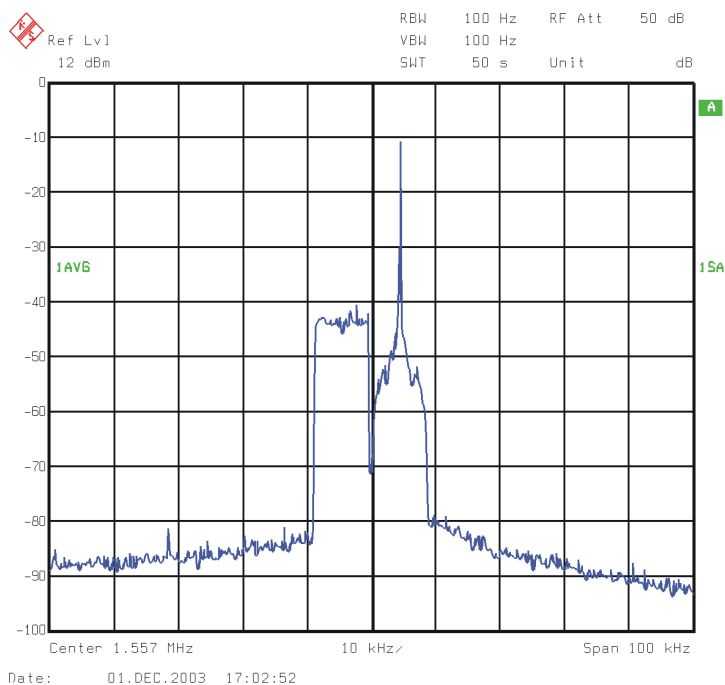
Main advantages

- One single transmitter can reach millions of people anywhere, anytime and with unlimited coverage possibilities ranging from 100 km² up to well over 5'000'000 km² (depending on the antenna system)
- Diveemo offers free-of-charge reception and is independent of any gatekeepers and third party providers like satellites, cable networks or internet.
- Diveemo keep citizens living abroad informed and up-to-date about what is going on in their home country.

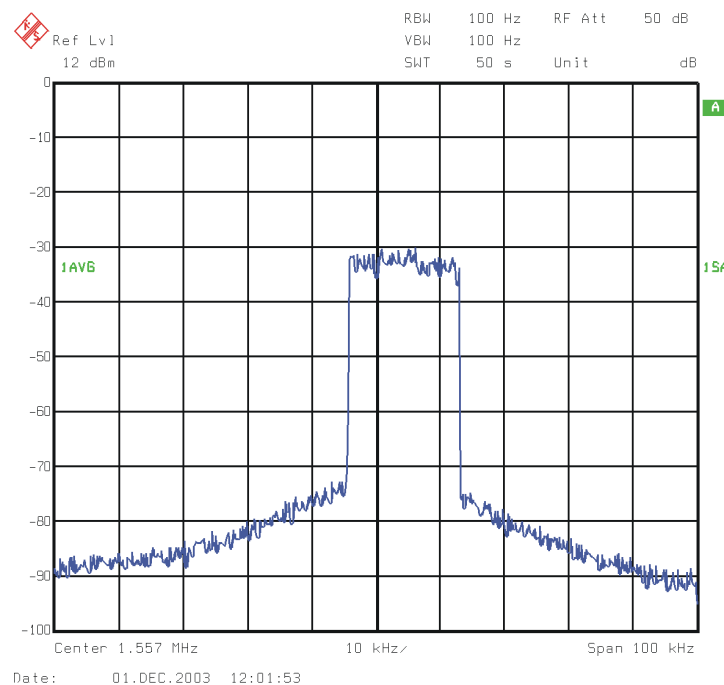
System Overview



The transmission mode (spectrum)

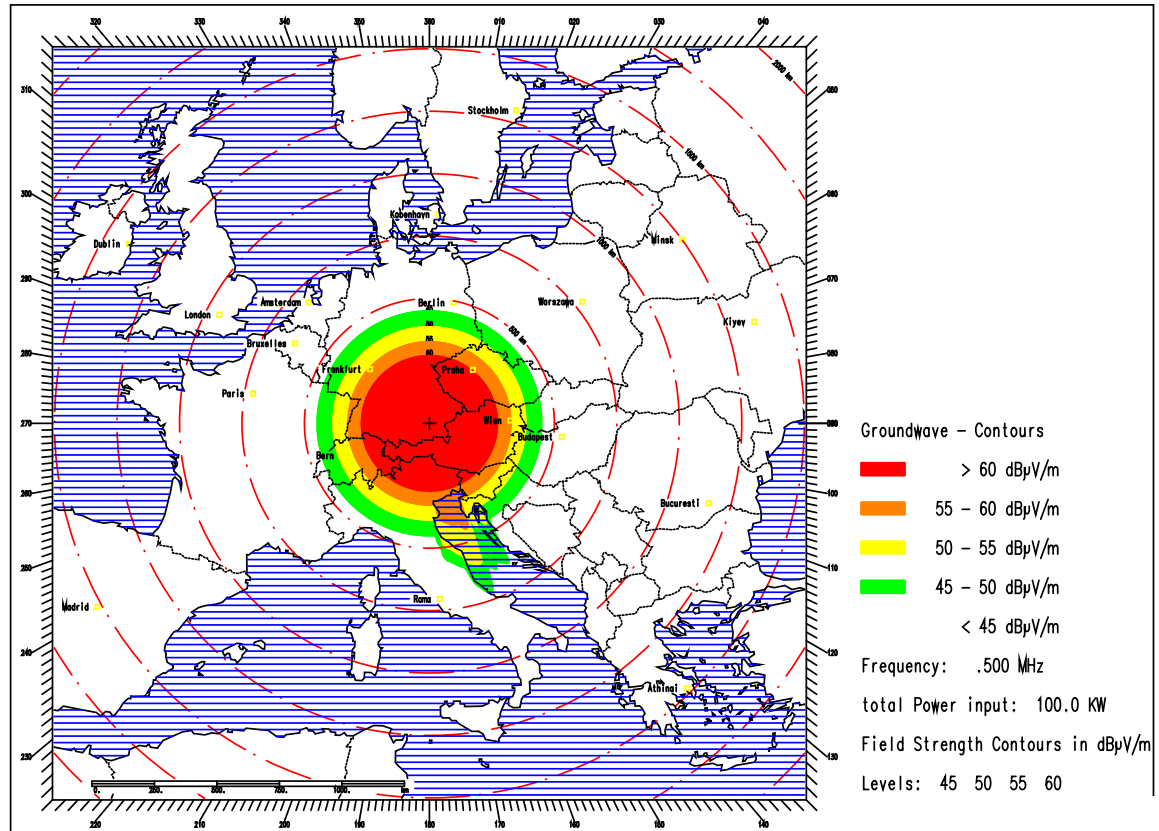


9 kHz Digital, 9 kHz Analog



18 kHz full Digital

Example for
ground wave
propagation
LW, MW -
day and night





- Usage as **distance learning** system
- News transmission for **offshore** transmissions
- Video information in **alarm or emergency** situation
- Video based **News Service** on Radio
- Additional usable **Advertisement Gadget ...**

Application: Distance learning system

- Diveemo enables the highly effective use of distance learning e.g. in combination with NewStar based receivers
- Reception is possible anywhere in the world – any time of day – and with an absolute minimum of needed technological infrastructure



Application: Emergency Information System

- Shortwave broadcast is worth its weight in gold when it comes to reaching trouble spots and disaster areas at short notice
- When natural disaster strikes, communications infrastructure is usually strongly affected at the exact time when local populations require reliable news and information
- Diveemo can reach into such disaster areas from far away, guiding, informing and comforting the stricken people



**Digital Radio with
DRM offers
Video and Audio Services
for extremely large coverage areas,
not limited to any borderline!**

Diveemo®

DIGITAL radio mondiale **VIDEO**



Thank you.

Matthias Stoll
Thomson Broadcast

Diveemo – Small-scale video for Education & Information over DRM

Alexander Zink

Vice President DRM Association,
Vice Chair DRM Technical Committee, DRM
Treasurer

Fraunhofer IIS, Broadcast Applications

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Worldwide Launch Event at IBC 2010!

A BBC World Service program

Transmitted live via DRM
on 1296 kHz
from Orfordness, UK,
operated by Babcock

With a Diveemo enabled
Receiver Prototype by NewStar

Receiver and BBC Broadcast Demo

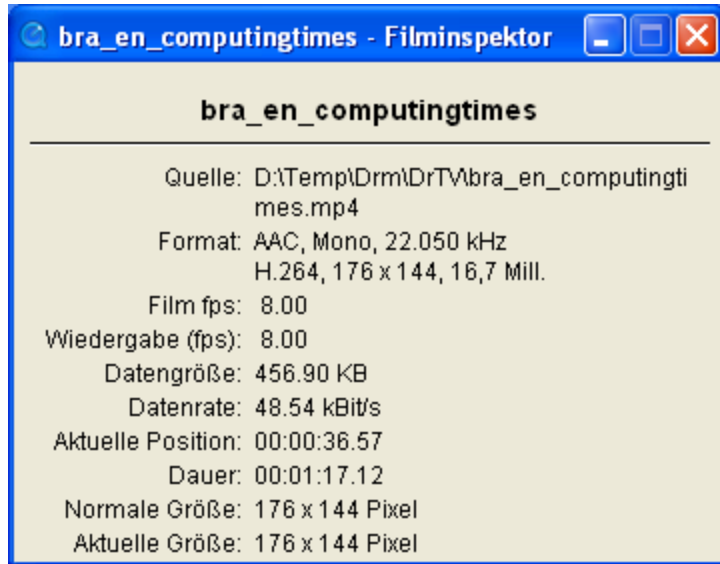


Diveemo Demo Content by BBC World Service

- H.264 video, HE-AAC v2 audio coding
- 176 x 144 Pixel, 8 Frames per second
- Data rate net 48.54 kBit/s

Coding setup / information's DRM30

(18/20kHz AM Band's)



Video options:

- up-to-date H.264 compression
- HE-AAC v2 audio coding
- 176 x 144 Pixel
(in the receiver scalable on the display if necessary)
- 16.7 mil. colour
- 8 Frames per second
- Data rate net 48.54kBit/s

(rest up to 70kBit/s is used for signal protection and DRM signalisation)

Coding setup / information's DRM+ (100kHz FM Band's)

- 176 x 144 Pixel
- 16.7 mil. colour
- 15 Frames per second
- Data rate net 185kBit/s



Listener Convenience:

- Service tuning by station label
- AFS Alternative Frequency Signaling & Switching
- Time/date, Country of origin, ...

Full power of existing data apps:

- **Journaline** as teletext and ticker messages
for multi-lingual/script sub-titling
- **EPG** Electronic Programme Guide

Emergency Alarm/Warning:

- Automatic receiver re-tuning to emergency broadcast

Diveemo – Worldwide launch



Diveemo
DIGITAL radio mondiale VIDEO



A joint Development:

THOMSON BROADCAST

 **Fraunhofer**
IIS

 **NEWSTAR**
ELECTRONICS 纽斯达电子

Next step:
Standardization, DRM Consortium

 **Fraunhofer**
IIS

www.drm.org
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JOIN THE DRM CONSORTIUM TODAY

Key Membership Benefits



Privileged Information

- Receive privileged information on global DRM developments (key countries like India, Russia, etc.)
- Have access technical and marketing confidential documents

Networking Opportunities

- Be present at big international media events for a minimum fee and showcase your company and the Consortium
- Get speaking opportunities at important digital media events.

Marketing and PR Support

- Get the support of the DRM Press Office for related DRM communication and a presence on the DRM website (www.drm.org)

Interested? Come talk to us today and get a discount!



The screenshot shows the DRM website with a navigation bar (Home, About us, What is DRM digital radio?, What can I hear?, Receivers/Products, Members' area, News) and a banner for 'the FUTURE of global radio'. The main content area features a large image of a boy with a radio, a 'News' section with two items, an 'Upcoming Events' section with two items, and a 'Downloads' section with three items. There are also links for 'Read the latest Press Releases' and 'Sign up for our Monthly Newsletter'. The footer includes a 'LISTEN & COMPARE' section, a 'BROADCAST SCHEDULE' section, a 'RECEIVERS' section, and a 'Members' area' with a login form and social media links.

Thank you



For information and membership contact:

projectoffice@drm.org

Visit: www.drm.org

Tell us what you think on the DRM website