EBU **TECHNICAL**

Hybrid radio

EBU Webinar

3rd May 2011

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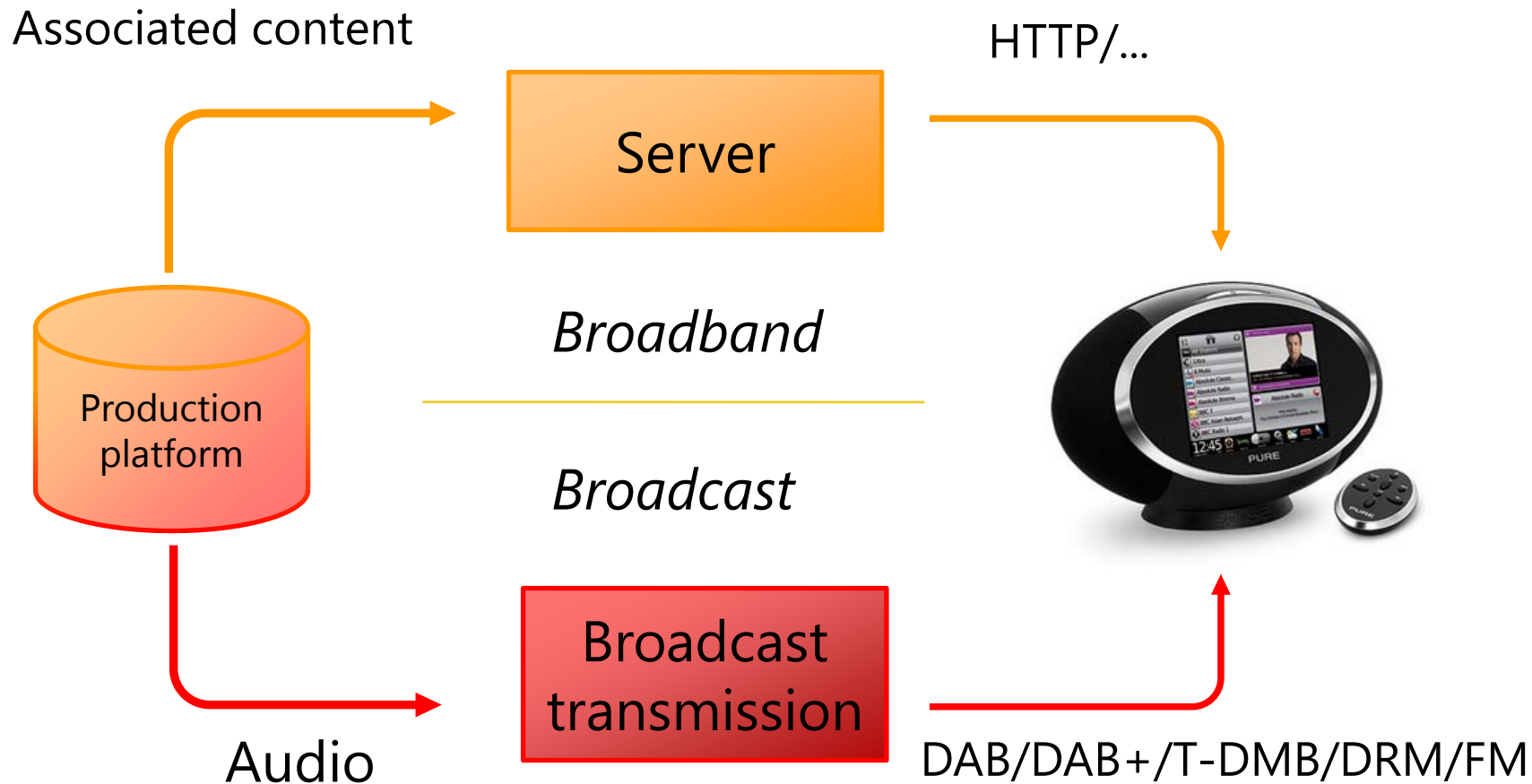European Broadcasting Union

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Webinar plan

- What is hybrid radio ?

- Why hybrid radio ?

- How does it work ? RadioDNS

- How do I start ?

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What is hybrid radio ?

Hybrid broadcast/broadband approach

Associated content

HTTP/...

Server

Broadband

Production platform

Broadcast

Broadcast transmission

Audio
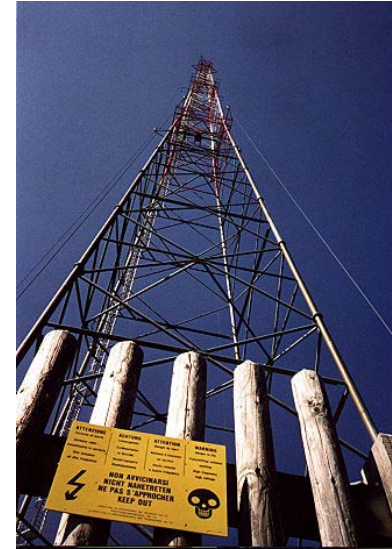
DAB/DAB+/T-DMB/DRM/FM

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Why hybrid radio ?

Combine the benefits of broadcast and broadband IP

- **The power of broadcast**
  - Efficient one to many delivery
  - Free to air, no subscription needed
  - Horizontal market

- **The power of broadband**
  - On demand
  - Interactivity
  - Profiling

Target: New devices with more than just audio...

- **New radio capable devices**
  - Colour screen
  - Interactive controls
  - Very often with Internet connection
  - Integration in multimedia devices (players, phone, car nav, etc)
  - Hardware tends to become generic (micro PC platforms)
  - Possibility sometimes to create your own application

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Example of new services

- Visuals (≠ TV !)
    - Branding
    - Associated program information (CD covers, news stills, etc)
    - Non associated program information (Traffic webcams, etc)
    - Visuals are clickable (to related website for more information)
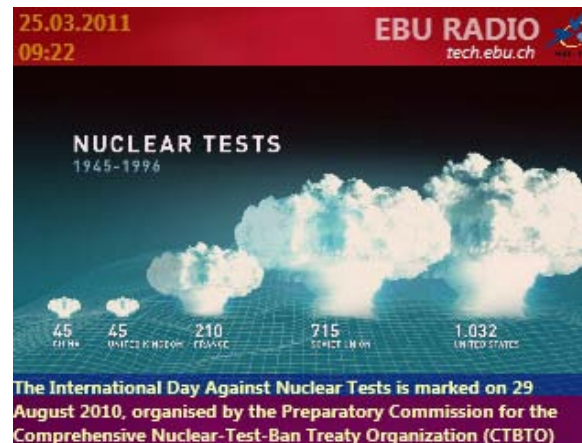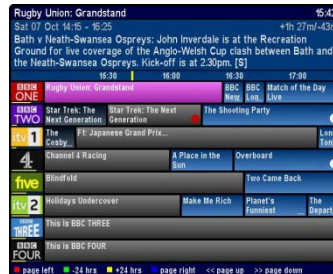
Visualisation gets ready in the car

DAB+ slideshow in a VW car. (Available also in Audi cars)

Example of new services

- Program guides
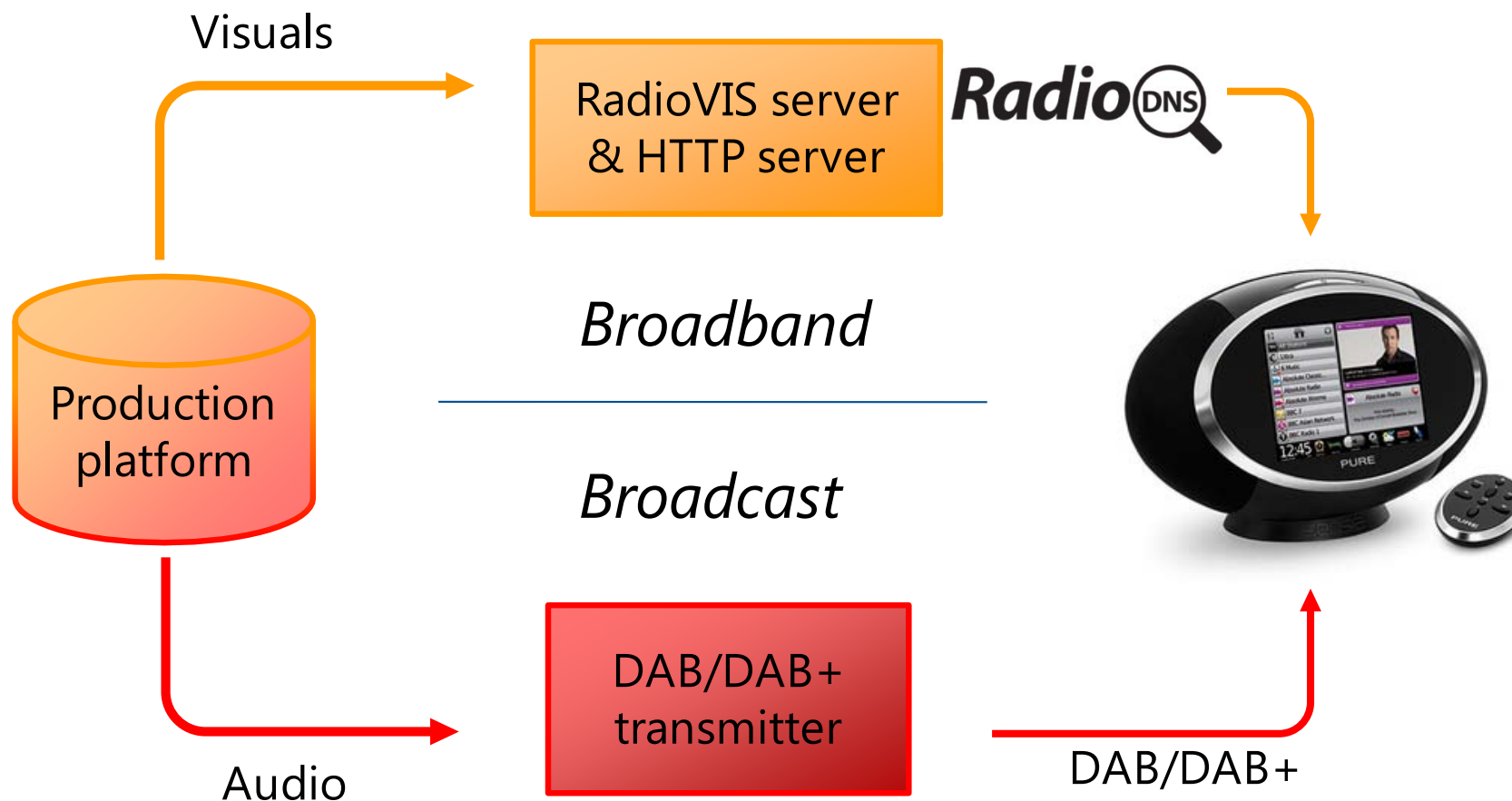
- Tagging

- Voting

- Small applications

How does it work ?

Hybrid Broadcast/Broadband with RadioDNS

Visuals

RadioVIS server & HTTP server

Radio DNS

Broadband

Production platform

Broadcast

DAB/DAB+ transmitter

DAB/DAB+

Audio

DAB/DAB+ and RadioVIS

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RadioDNS, a simple explanation (RadioVIS example)

Hello, I'm an hybrid radio receiver.

I'm receiving radio Gaga and I'm located in Iceland

I would like to display visuals. Can you help me ?

Hello, Radio Gaga registered to us

Here the DNS server address they gave us where you can go to find information about their services.

Goodbye

Hybrid Radio receiver

RadioDNS.org DNS server

RadioDNS, a simple explanation

Hello, do you display visuals for radio Gaga ?

Hello, yes we have visual for this radio. I give you the RadioVIS server address to get them.

Goodbye

Hybrid Radio receiver

DNS server of the broadcaster

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RadioDNS, a simple explanation

Hello, give me visuals for radio Gaga

Yes sir

Here's the weblink where you can download the current picture

Stay on, I will tell you everytime a new visual is available

Hybrid Radio receiver

RadioVIS server of the broadcaster

RadioDNS, a less simple explanation

RADIO DNS: Hybrid Receiver Dialog

Receiver tuned on a broadcast station (FM, DAB ...)

RadioDNS.org
DNS Server

DAB EID ? SID ? or FM RDS PI ?
RDNS = Broadcaster.com

Broadcaster.com
DNS Server

Vis ?
Vis = RadioDNS1.ebu.ch

RadioDNS1.ebu.ch
RadioVis & Content Server

STOMP
Push URL
Fetch Content @ URL
HTTP (content)
etc.
...

Hybrid Receiver
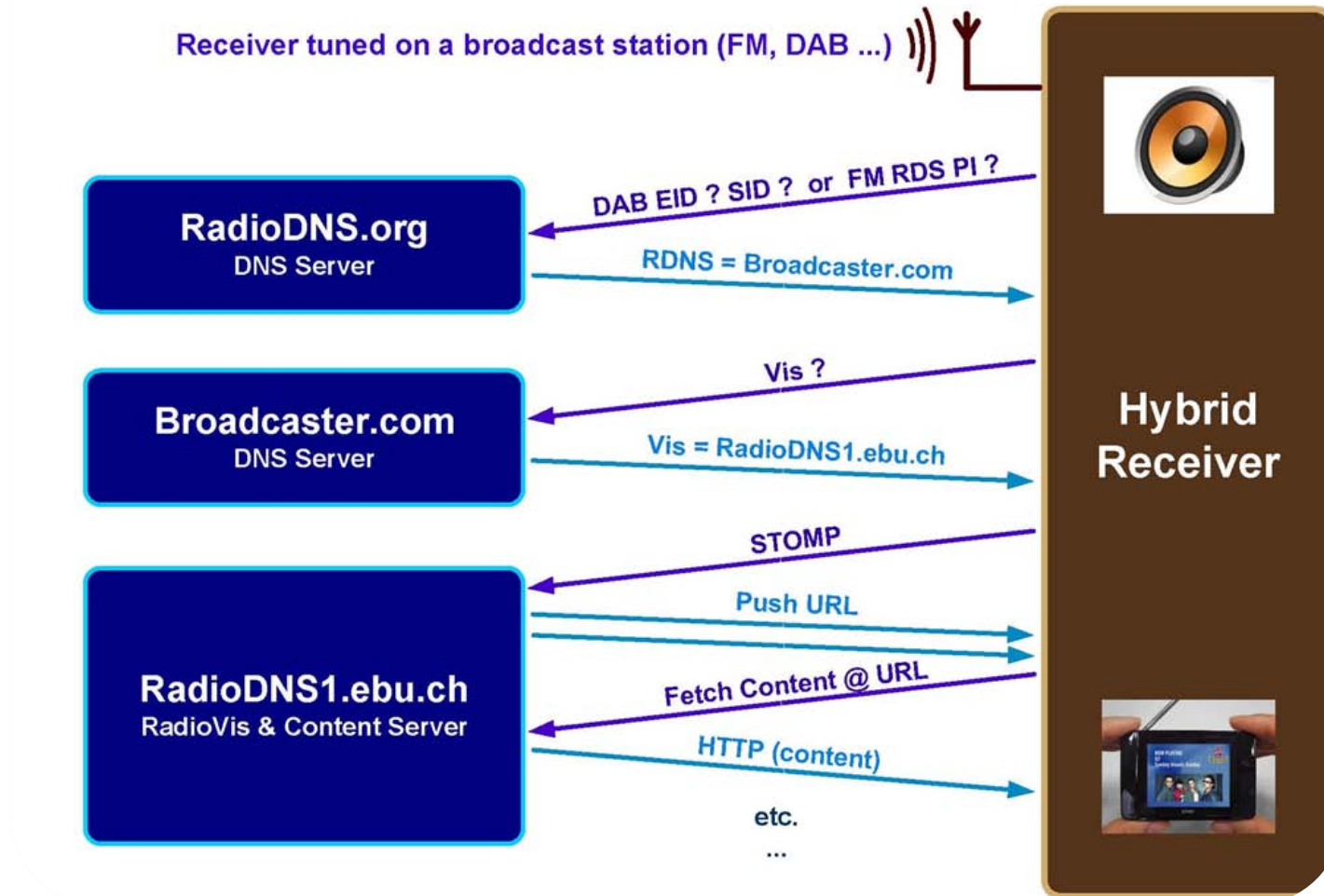
RadioDNS applications

Radio VIS *Slideshow*

Radio EPG *Electronic Program Guide*

Radio TAG *Tagging*

Opened to other applications...

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RadioDNS today (1 year old)

- **An organisation of broadcasters and manufacturers**
  - Membership offers the right to vote and decide on strategic direction
- **500-600 stations registered (~100 have real services)**
  - It is not necessary to be member to register a station

RadioDNS receivers

- Pure Sensia (RadioDNS with FM or DAB/DAB+)

- Frontier Silicon just announced RadioDNS support in Venice chipset

- Any mobile phone with a tuner (FM or DAB) is ready for RadioDNS applications

  – API needed.

  – Successful development on Nokia N900 / Sony XPeria (Global labs), Samsung Galaxy (CRC FM-RDS library)

Other ways of doing hybrid radio
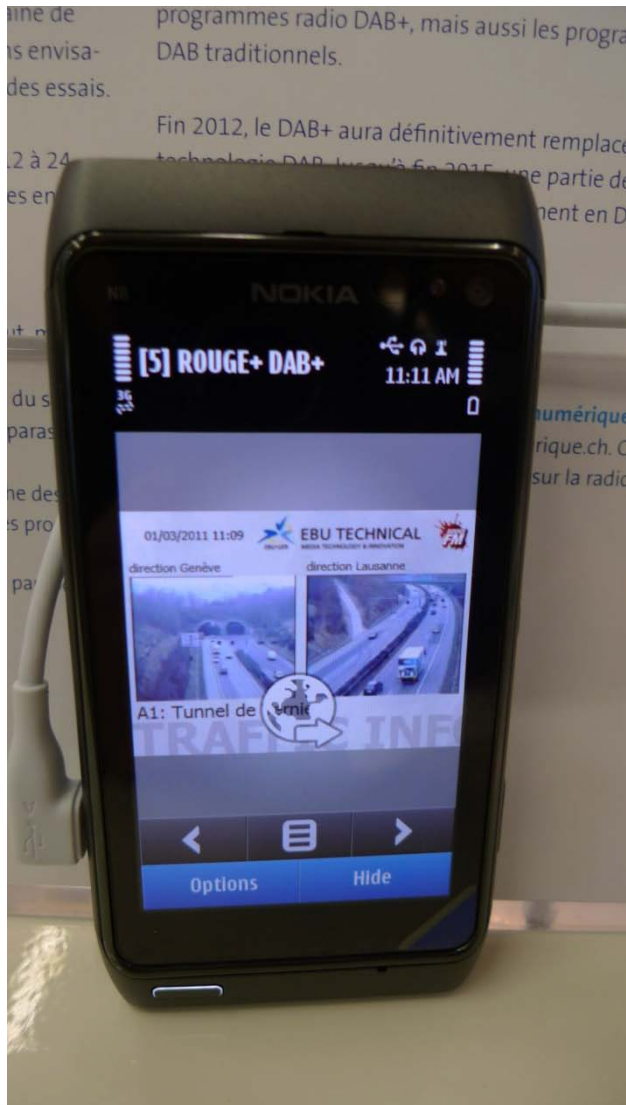
- DAB/DAB+ slideshow on the Nokia N8 with DAB headset

- Clickable slides
  - JPEG images transmitted via DAB XPAD
  - Embedded URL in JPEG header (custom development by Nokia)

A demonstration by Nokia, Swisscom, Rouge FM, EBU Technical for the Geneva Motorshow 2011

How do I start ?

How to start

- RadioDNS infrastructure need is simple (web technologies)

- Many open source tools already exist

- Registration in RadioDNS.org is free (at the moment)
  - Read the FAQ on the website

- Challenge for broadcasters: adapt their production platforms, create or adapt content

- EBU Technical has created a simple RadioVIS server for broadcasters to start or experiment
  - Static visualisation (logo or brand)
  - Possibility to change it dynamically

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EBU RadioVIS Service
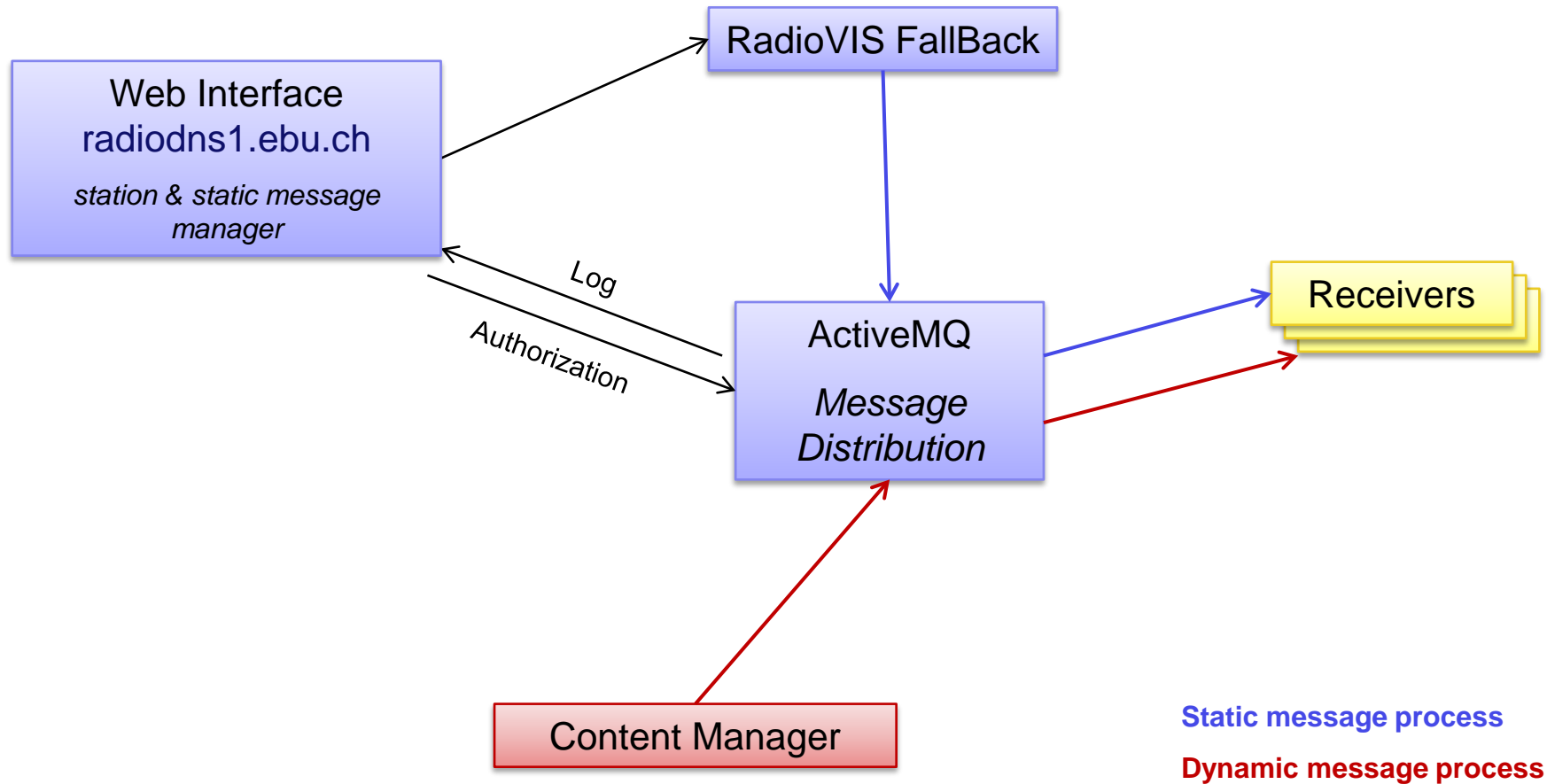
EBU RadioVIS Server: Login

EBU RadioVIS Server: Station creation

EBU RadioVIS Server: Station topics

EBU RadioVIS Server: Station topic definition

EBU RadioVIS Server: Topics

EBU RadioVIS Server: Monitoring result

EBU RadioVIS Server: Logs

se déconnecter
Hide tips

history of topic : fm.4e1.4000.09180

Date	Sender	Destination	Message
2011-05-02 01:37:48	fallback	fm.4e1.4000.09180.image	SHOW http://radiodns1.ebu.ch/radiovismanager/radiovis/static/d932d97a3eb12a64df904ac8c07dc6e3.jpg
2011-05-02 01:37:48	fallback	fm.4e1.4000.09180.text	TEXT TEST TEXT
			2 items returned

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EBU RadioVIS Server: Export for RadioDNS.org

EBU Radio production platform

DataBase
(Playlists & MetaData)

Interface
(ie: MusicMaster C# API)

HTTP — WebCam — Local

PlayOut — WCF → Content Manager

WCF

Audio Engine

← Files
← Web

Audio   Stream

DAB →
RadioVIS →
Web →
Iphone/Android apps →
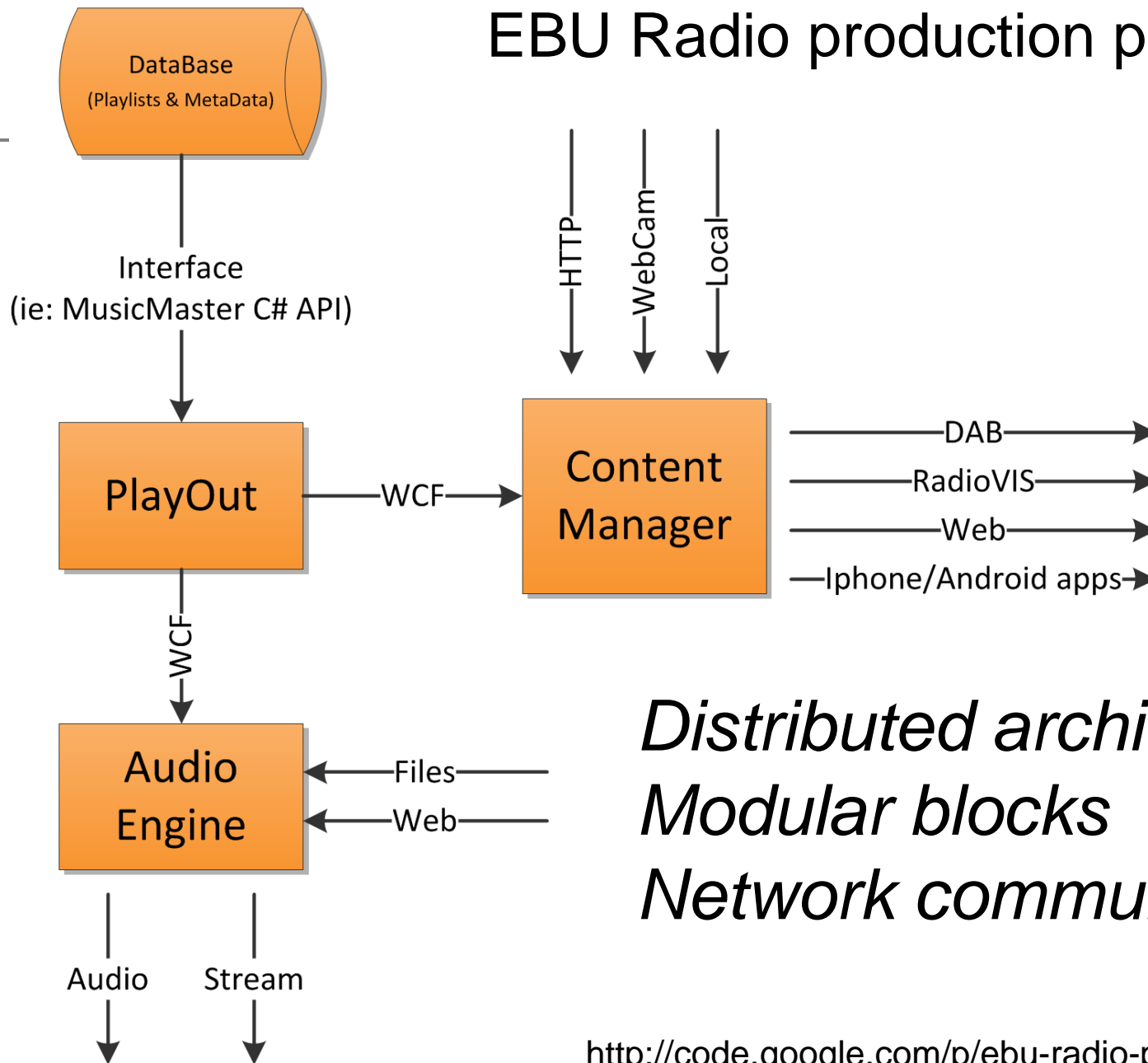
Distributed architecture
Modular blocks
Network communication

http://code.google.com/p/ebu-radio-production/

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Conclusions

Content is the key => Broadcasters: Be creative !

- Create a compelling offer
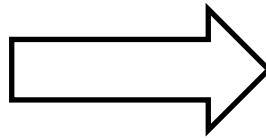
- Think of associated content to the program
  - Visuals, text, additional audio content

- Integrate Production: Produce once distribute to many

- Push your web content to the listeners with hybrid radio

The goal

- Same experience whether it is distributed via broadband only, hybrid broadcast/broadband or broadcast only

For users:

- Enjoy their favourite radio services whatever the platform

For broadcasters:

- Enhance the radio experience
- Keep an efficient and reliable distribution with broadcast

Conclusion

- Hybrid radio brings a new experience to radio while securing an efficient and independant broadcast delivery

- RadioDNS is an easy way to start whether you are on FM, DAB, DRM, AM with AMSS, HD Radio,...

- EBU has developed an experimental platform for you to start or experiment

- Concentrate on your production platform

- Value your web content with hybrid radio

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