
DAB / DRM CONTENTSERVER – EMPOWERING DIGITAL RADIO

One-Box Solution – Community to Professional Editions

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Symposium on DRM+/DAB for Local/Community Radio

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DAB/DRM ContentServer – What Is It?

One-Box Encoder Solution for Digital Radio

- Real-time audio encoding (DRM xHE-AAC, DRM AAC, DAB Classic, DAB+, Surround)
- Data Application Management (DL+/TM, Journaline, SLS, EPG, TPEG,...)
- Multiplex Generation (dyn. reconfigs)
- Monitoring / verification / logging

Firefox

Verbinden...

Fraunhofer DAB ContentServer
uk043: DAB_ensmux_trunk

System Status: OK
2012-01-30 19:13:49 UTC

Fraunhofer IIS

Hide System Menu

Main Menu

- System Status
- Broadcast Configuration >
- Broadcast Activation >
- Broadcast Information >
- System Management >
- System Information >
- System Commands >
- Tools >
- Documentation ...

Broadcast Configuration

- Service Component Editor
- Sub-Multiplex Input Container Editor
- TIL and Region Definitions
- Alternative Frequencies
- Multiplexer Output
- DAB Multiplex Editor
- Broadcast Scheduling

Welcome to the Fraunhofer DAB ContentServer

Getting Started
If you are new to this system, click here for a quick introduction.

Licensed Functionality
Currently activated and available features of this system.

On Air

System time (CET):
2012-01-30 20:13:51

Scheduler mode:
manual

Current Multiplex since
2012-01-30 13:41:45
AXIA Test

Redundancy Group

System role:
No active Redundancy Group

System Information

uk043: DAB_ensmux_trunk
ID: fhg43
Version:
5.2.99.14126W.2010-06-16

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javascript: _leave('/s cgi-bin/edit_multiplex,1,0);



<<< Hide System Menu

Main Menu

System Status

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Tools >

Documentation ...

 >>

On Air
System time (CET):

2012-01-30 14:21:42

Scheduler mode:

manual

Current Multiplex since

2012-01-30 13:41:45

AXIA Test

Redundancy Group
DAB Ensemble Multiplex Editor

+ Add new Multiplex Configuration

! Check and Save Changes



DAB National Standard

↑ Close

∅ Remove

! Check+Save

Multiplex Parameters

DAB Services

Subchannels

Output Targets

Multiplex Subchannel Configuration Overview

 Available Capacity Units: **864** CUs Unassigned CUs: **+168** CUs

96 kbps: 96 kbps: 96 kbps: 128 kbps: D 128 kbps: D 40 148 k 72 kbps 32 56 kb 32 168 CUs unassigned


DAB Audio Subchannel - Audio Dummy - Used by: LoungeFM

↑ Close

Bitrate Configuration Overview of Output Stream

 Net Bitrate in Stream: **88000** bps Unassigned bitrate: **none**

88000 bps: Audio Dummy

! Show expert parameters

General DAB Subchannel Parameters

Subchannel Bitrate: 96 kbps



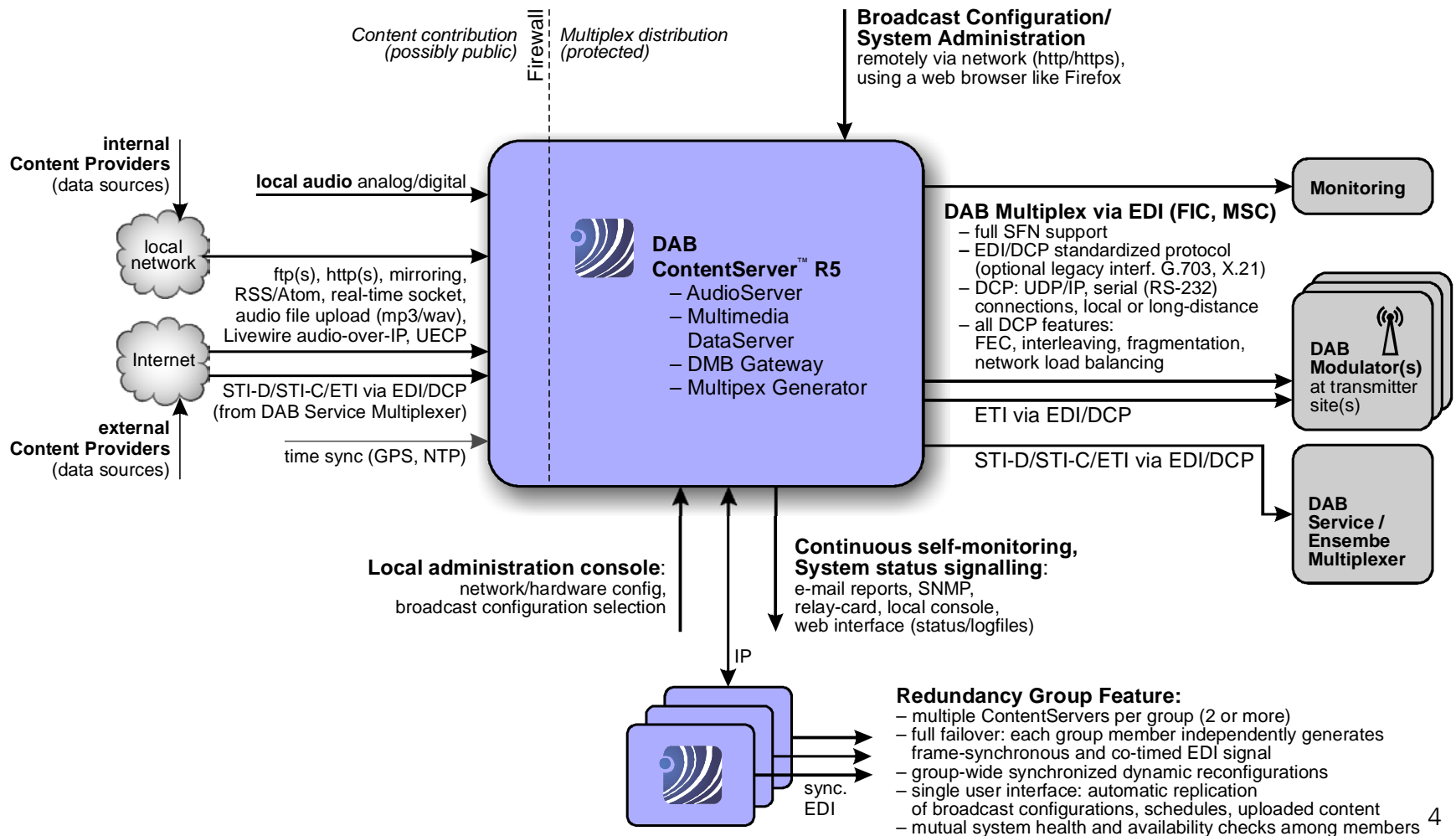
→ Docu

Protection level: EEP 3-A (72 CUs)

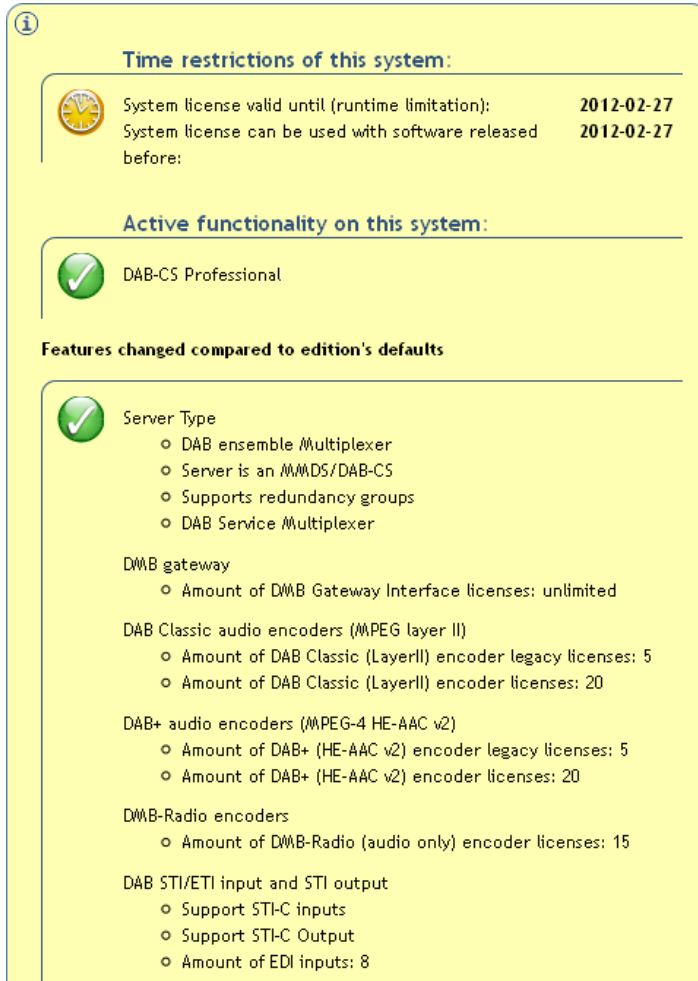


→ Docu

DAB/DRM ContentServer – Interfaces



ContentServer – Customized Feature-Sets



Time restrictions of this system:

System license valid until (runtime limitation):	2012-02-27
System license can be used with software released before:	2012-02-27

Active functionality on this system:

- ✓ DAB-CS Professional

Features changed compared to edition's defaults

- ✓ Server Type
 - DAB ensemble Multiplexer
 - Server is an MMDS/DAB-CS
 - Supports redundancy groups
 - DAB Service Multiplexer
- DWB gateway
 - Amount of DWB Gateway Interface licenses: unlimited
- DAB Classic audio encoders (MPEG layer II)
 - Amount of DAB Classic (LayerII) encoder legacy licenses: 5
 - Amount of DAB Classic (LayerII) encoder licenses: 20
- DAB+ audio encoders (MPEG-4 HE-AAC v2)
 - Amount of DAB+ (HE-AAC v2) encoder legacy licenses: 5
 - Amount of DAB+ (HE-AAC v2) encoder licenses: 20
- DWB-Radio encoders
 - Amount of DWB-Radio (audio only) encoder licenses: 15
- DAB STI/ETI input and STI output
 - Support STI-C inputs
 - Support STI-C Output
 - Amount of EDI inputs: 8

- Individual system functionality according to customer needs
- Pre-defined feature collections – „Editions“:
 - **Community Edition**
 - Standard Edition
 - Professional Edition
 - Developer Edition
- License management: USB or SW (system upgrades via e-Mail file)
- Optional limited runtime: demos, exhibitions, renting, ...

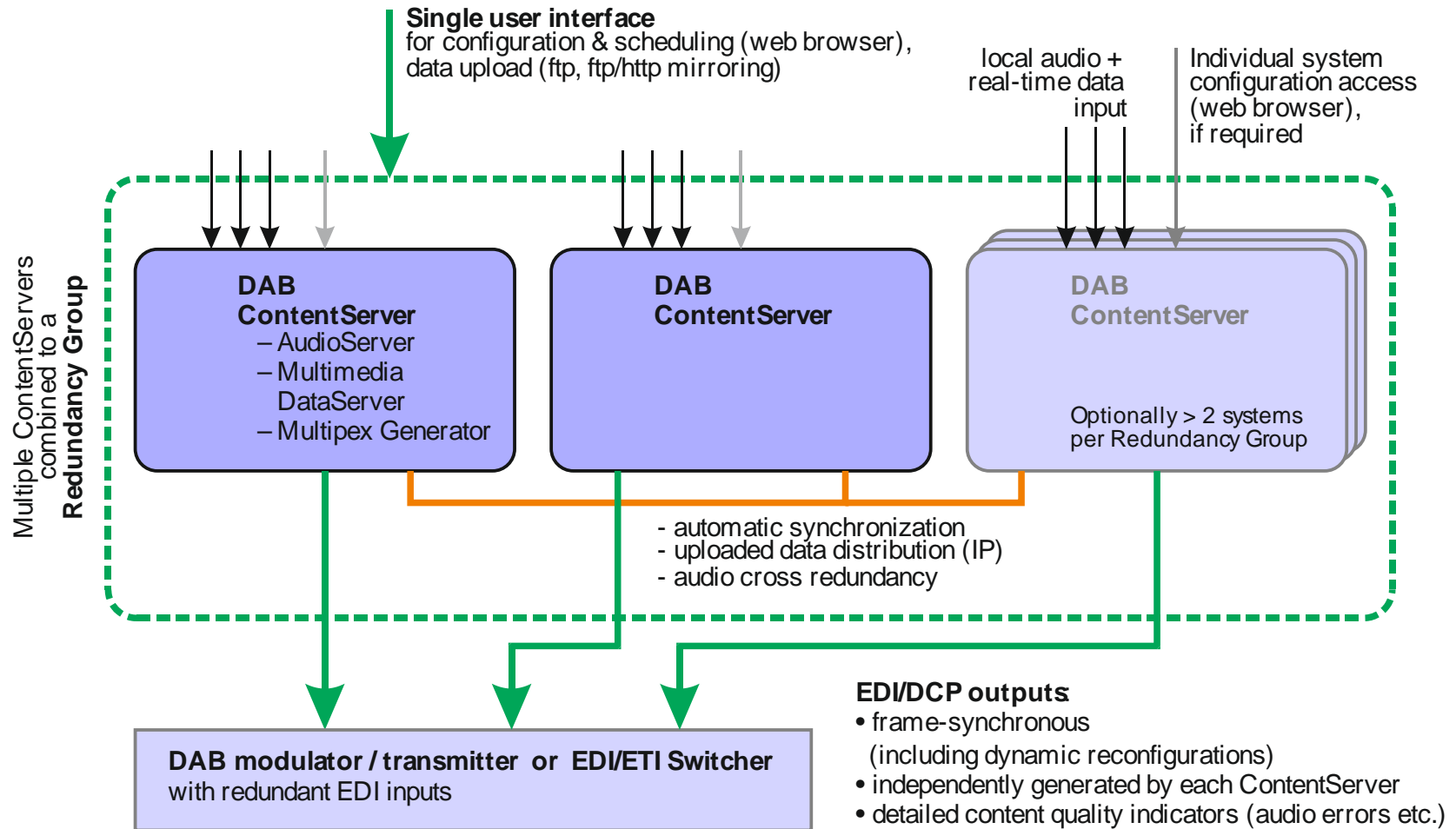
DAB/DRM ContentServer – OEM Partners



- ContentServer Technology
→ Basis for products
of our OEM Partners
- OEM Partners
for **DAB** ContentServer:
**IZT, AVT, Broadcast Partners,
RFmondial, VDL, A-Media, ...**
- OEM Partners
for **DRM** ContentServers:
**Ampegon, Transradio, Nautel,
Continental, BECIL, ...**

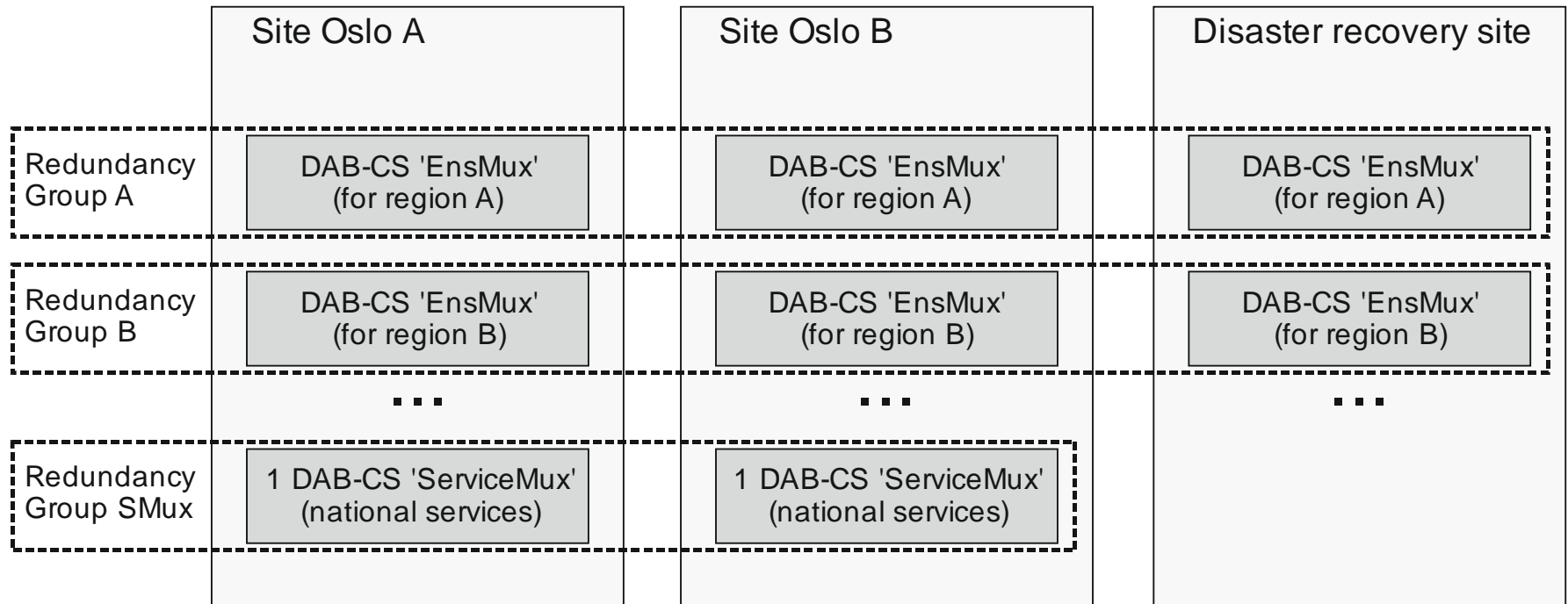
DAB/DRM ContentServer in „Redundancy Group“ mode

Distribution Redundancy with EDI & MDI



DAB/DRM ContentServer in „Redundancy Group“ mode

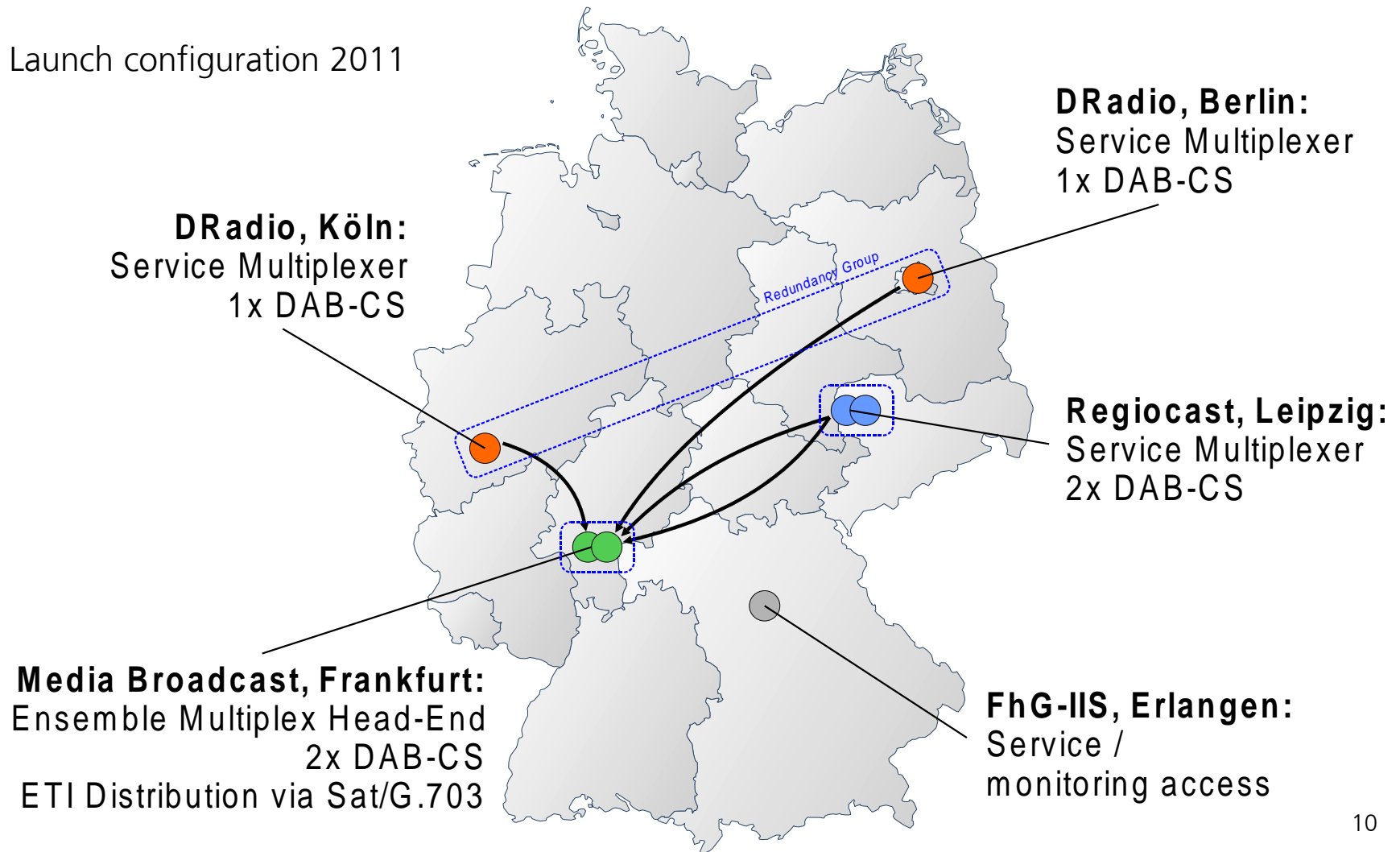
Distribution Networks – Multi-Site Example



DAB/DRM ContentServer in „Redundancy Group“ mode

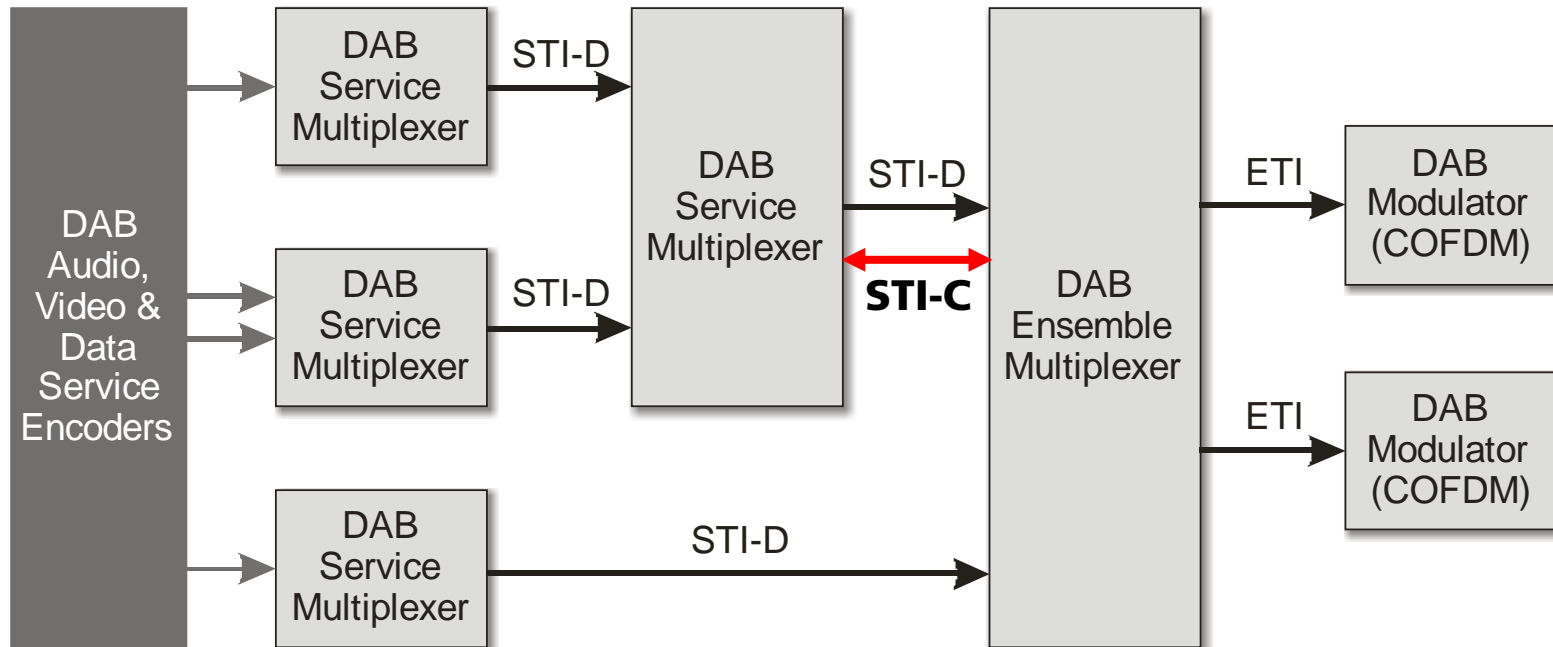
Example: German DAB Multiplex

Launch configuration 2011



DAB "Extended STI-C": Multi-Regions + Shared Services

Overview – ETI vs. STI-D vs. STI-C



STI-D: Service Transport Interface – Data Part, **STI-C:** Control Part

ETI: Ensemble Transport Interface

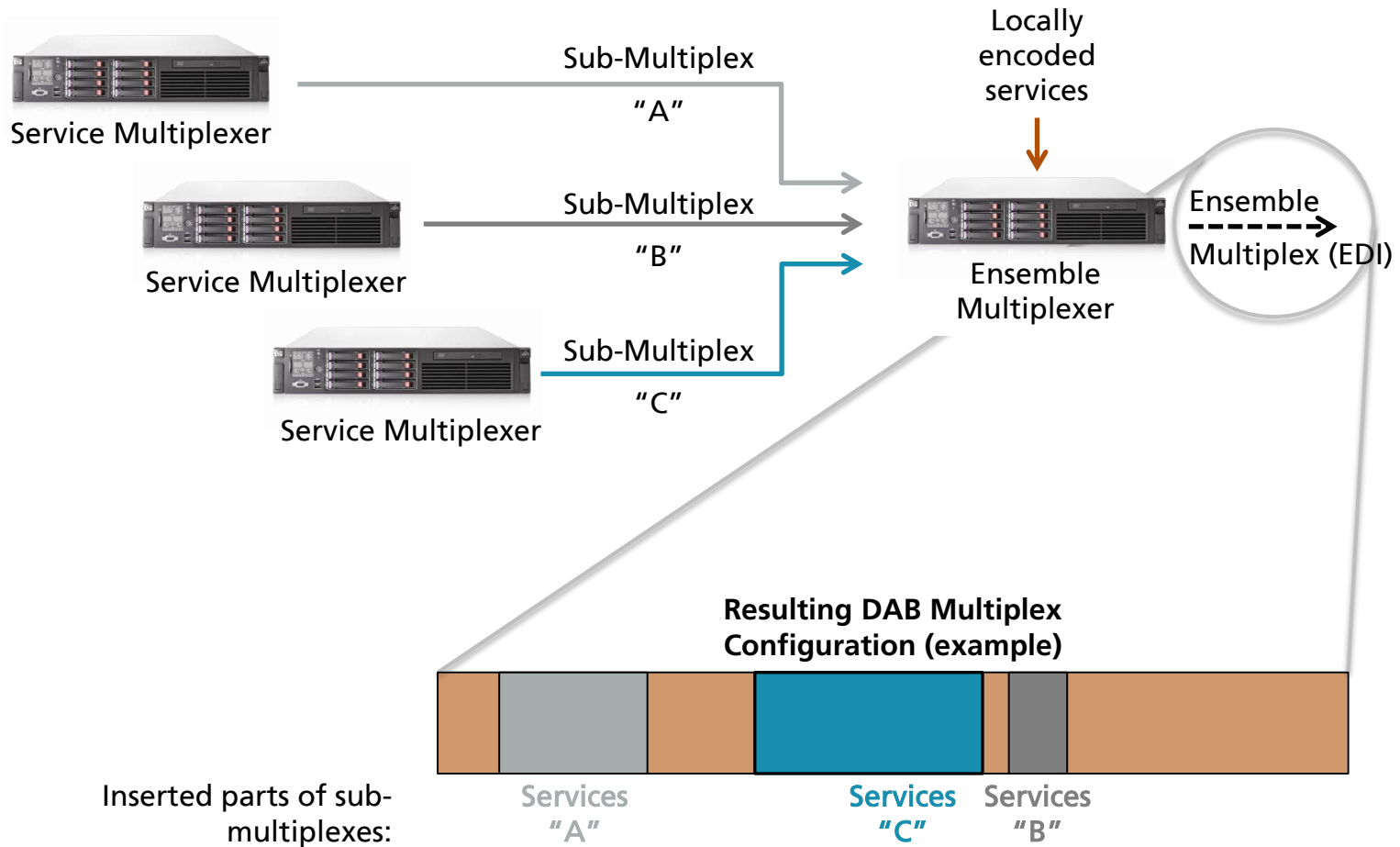
→ One or more Service Multiplexers feed one Ensemble Multiplexer n:1

→ STI-C enables autonomous configuration & management of Service Muxs.

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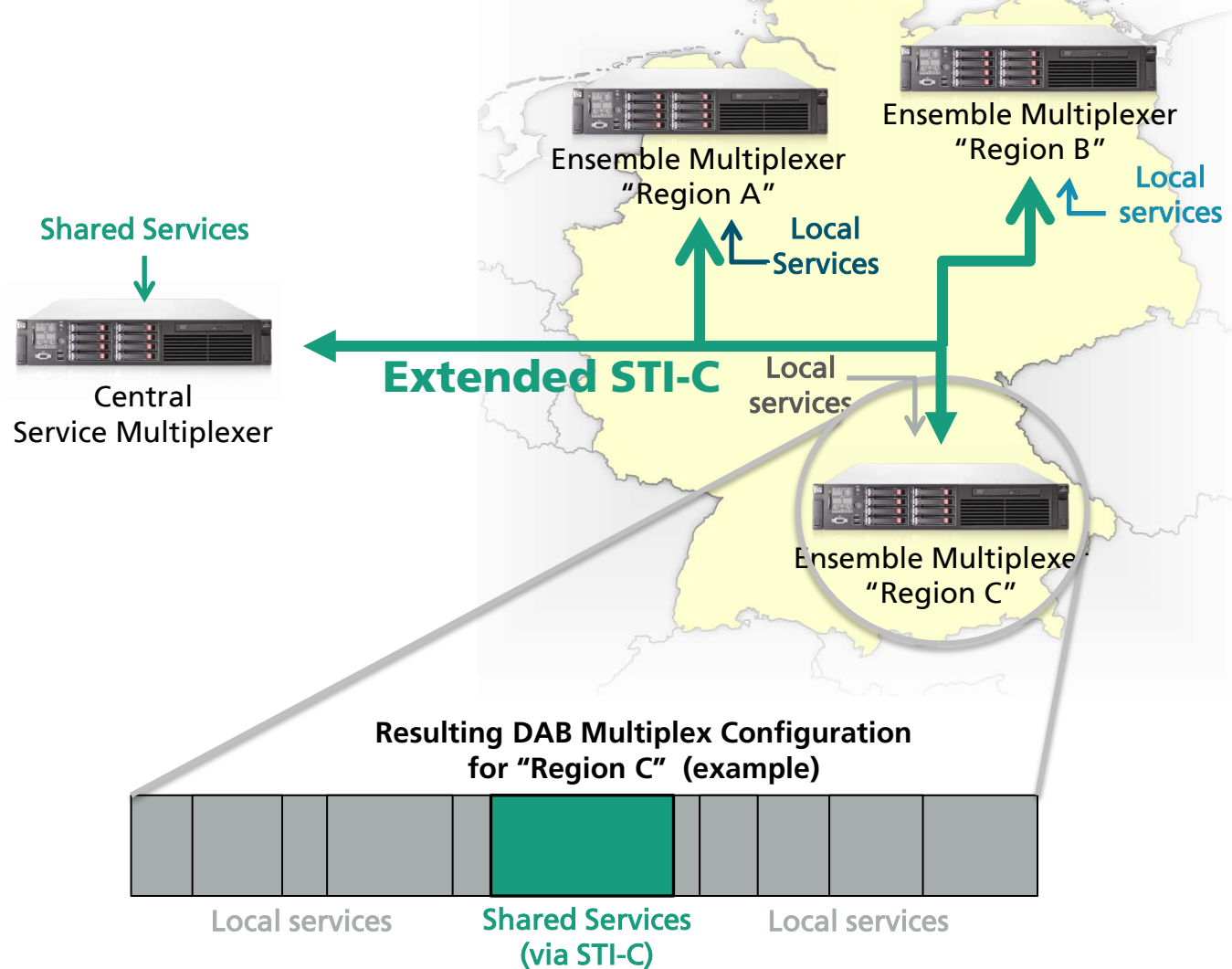
DAB "Extended STI-C": Multi-Regions + Shared Services

Application of STI-C – Typical use-case



DAB "Extended STI-C": Multi-Regions + Shared Services

Application of „Extended STI-C“



DAB “Extended STI-C”: Multi-Regions + Shared Services

Application of „Extended STI-C”

- „Extended STI-C” for DAB Multiplexes:
 - Local services encoded locally in multiple regions
 - **Un-used capacity in each region managed centrally with 1 single Service Multiplexer**
- Benefits over legacy sub-channel extraction:
 - Full config autonomy for shared content and regions, respectively:
→ minimizes effort and complexity
 - Match of all IDs + parameters in all regions at any time
 - Time-synchronous re-configs, announcements, etc. in all regions
 - Minimizes hardware, rack-space, audio-wiring, data interfacing, etc.
 - **Reduces cost and complexity for system setup and operation**

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■ Thank you!

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