



Why DMB is an alternative to DVB-H in Germany

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Why DMB is an alternative to DVB-H in Germany >>

Agenda

- About bmt
- DMB-Trials in Bavaria and Central Europe
 - Target Structure
 - Time Schedule
 - Economical, technical, user and content related Goals
- L-Band Commercial Service for World Cup 2006



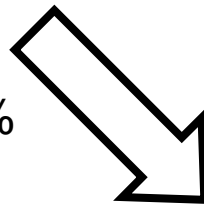


Bayerischer
Rundfunk

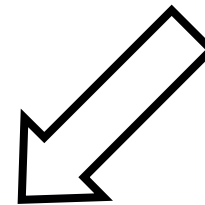


Bayerische Landeszentrale
für neue Medien

50 %



50 %



Bayerische Medien Technik

...we pave the way for digital broadcasting!



... we pave the way to digital broadcasting!

Development and service support for:

Digital Radio data services

DVB-T

MHP Applications

Traffic telematics

Playout and transmission technology

DRM etc.



Channel 12

VHF-Band

End 2004



Bavaria:

- Area coverage: ca. 92 %
- Population coverage: (fixed) ca. 91 %



ZUKUNFT
MOBIL
MEDIEN
RADIO
MENSCH
KULTUR
ZUKUNFT
BILDER
MPEG4
TEXTE
TV
BUSINESS
MULTI
MEDIA
LOKAL
MPEG4
MENSCH
MOBIL
TV
ZUKUNFT

DAB
Digital Advanced
Broadcasting



DMB – JOINT- PROJECT in planning: 80 proposals/applications from 9 countries



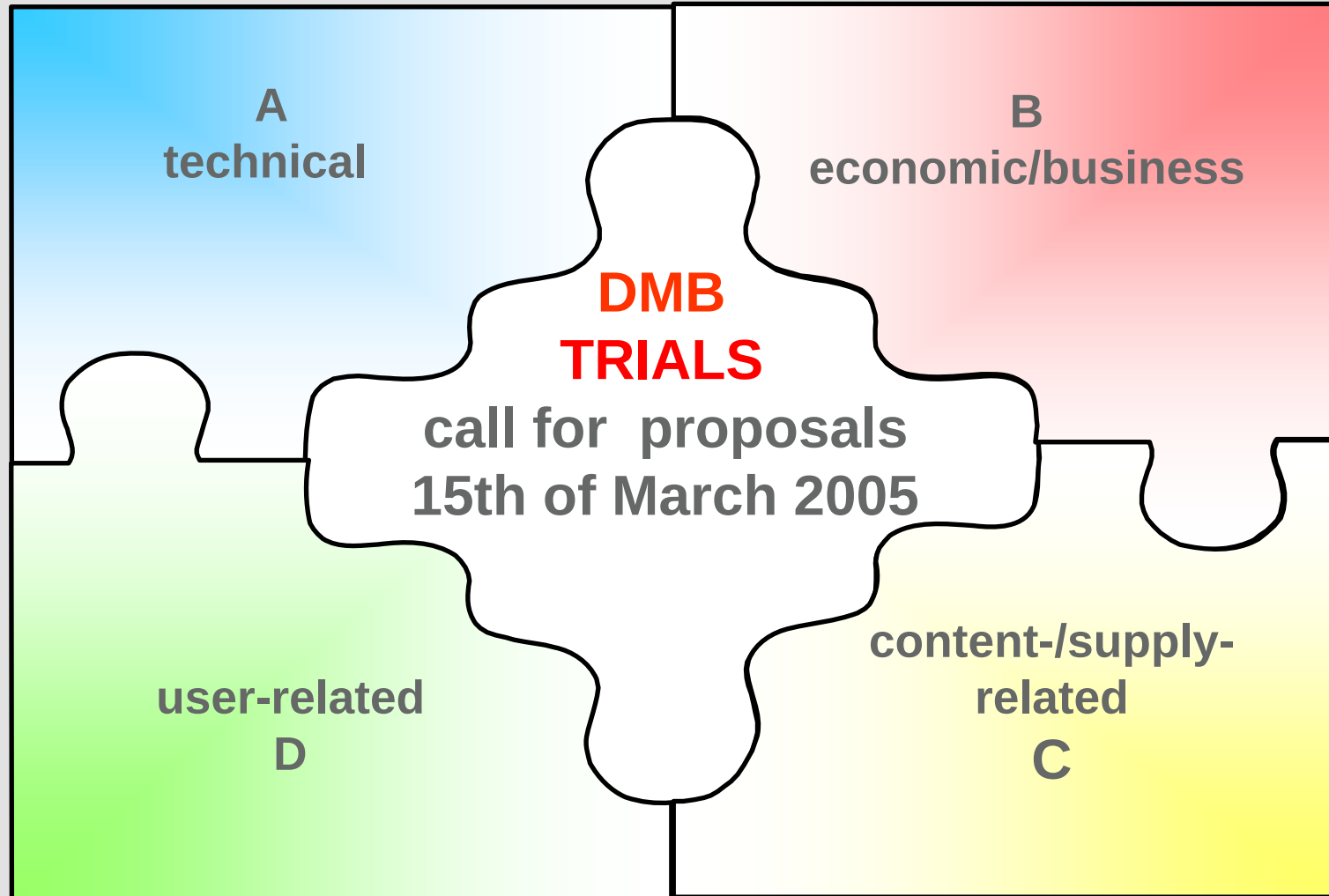
**33% content
services
business-models**

**33% technology
applications
transmission**

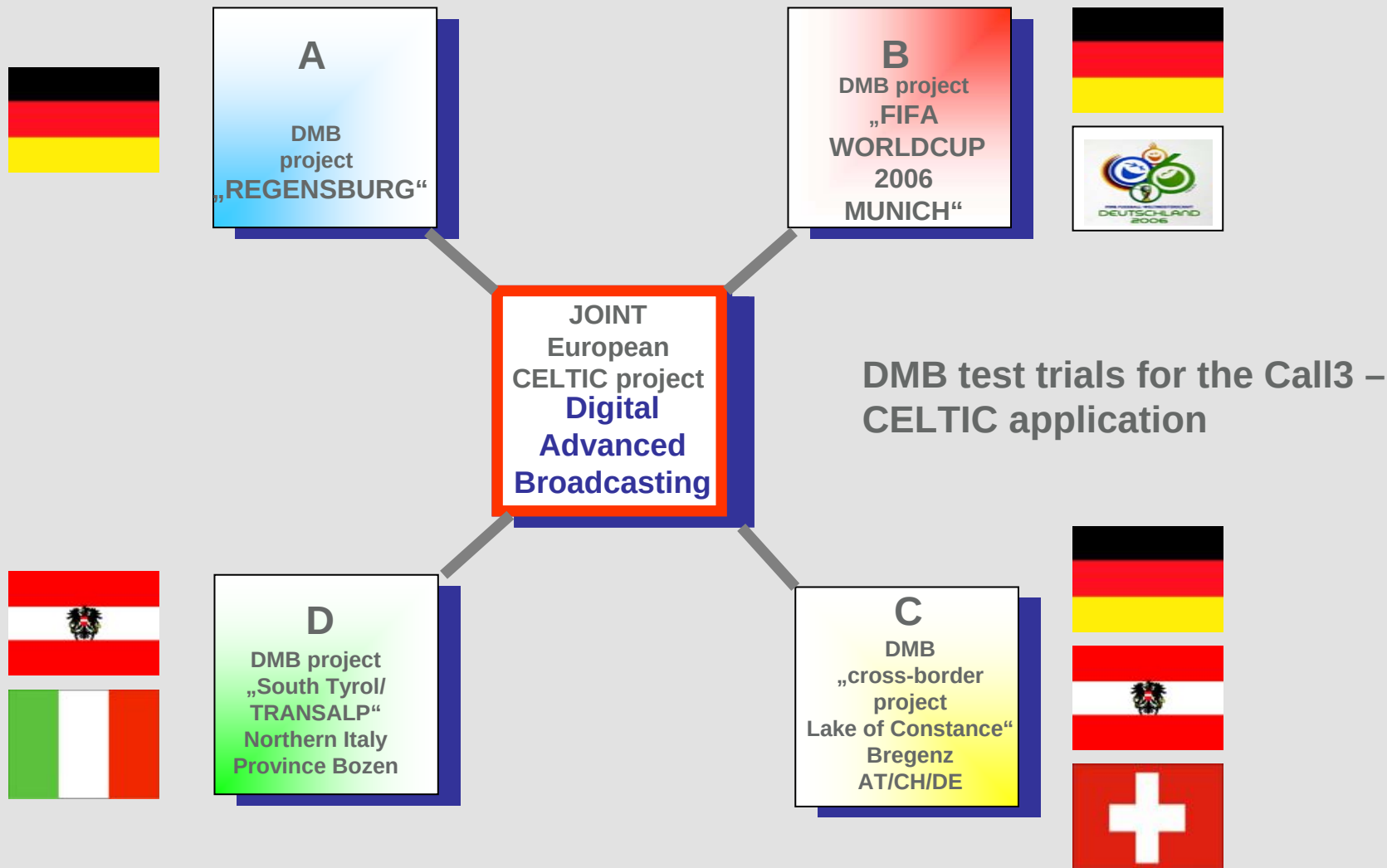
15% devices

**15% user-related
proposals
monitoring**

**4% research,
coordination
and others**



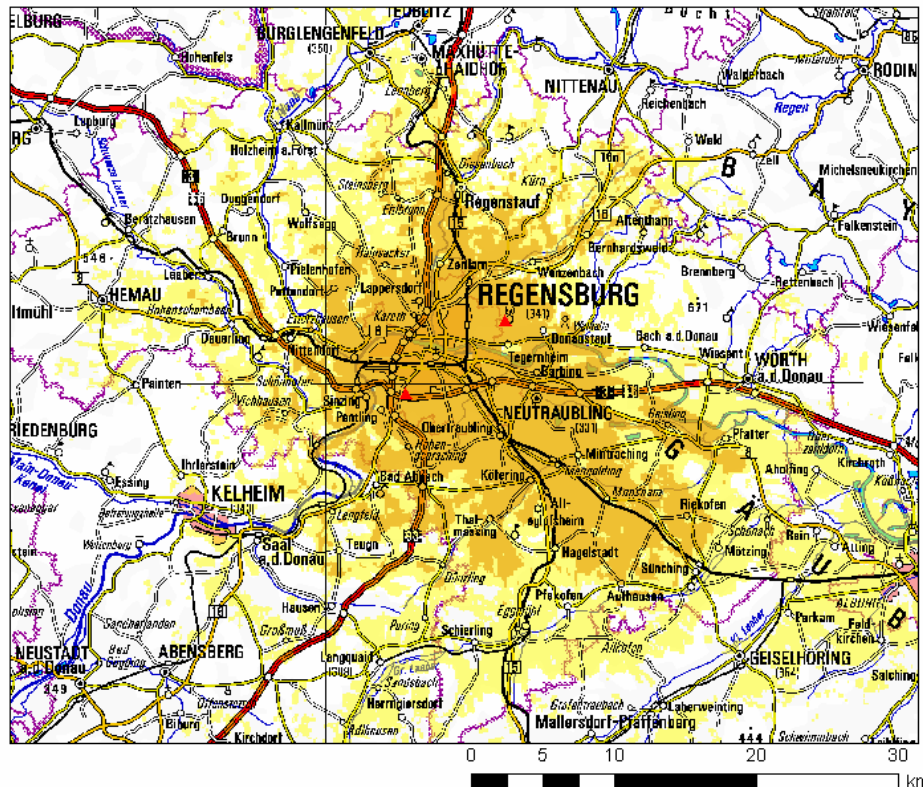
Spatial structure



Germany and Central Europe



Coverage Regensburg



Channel 12A

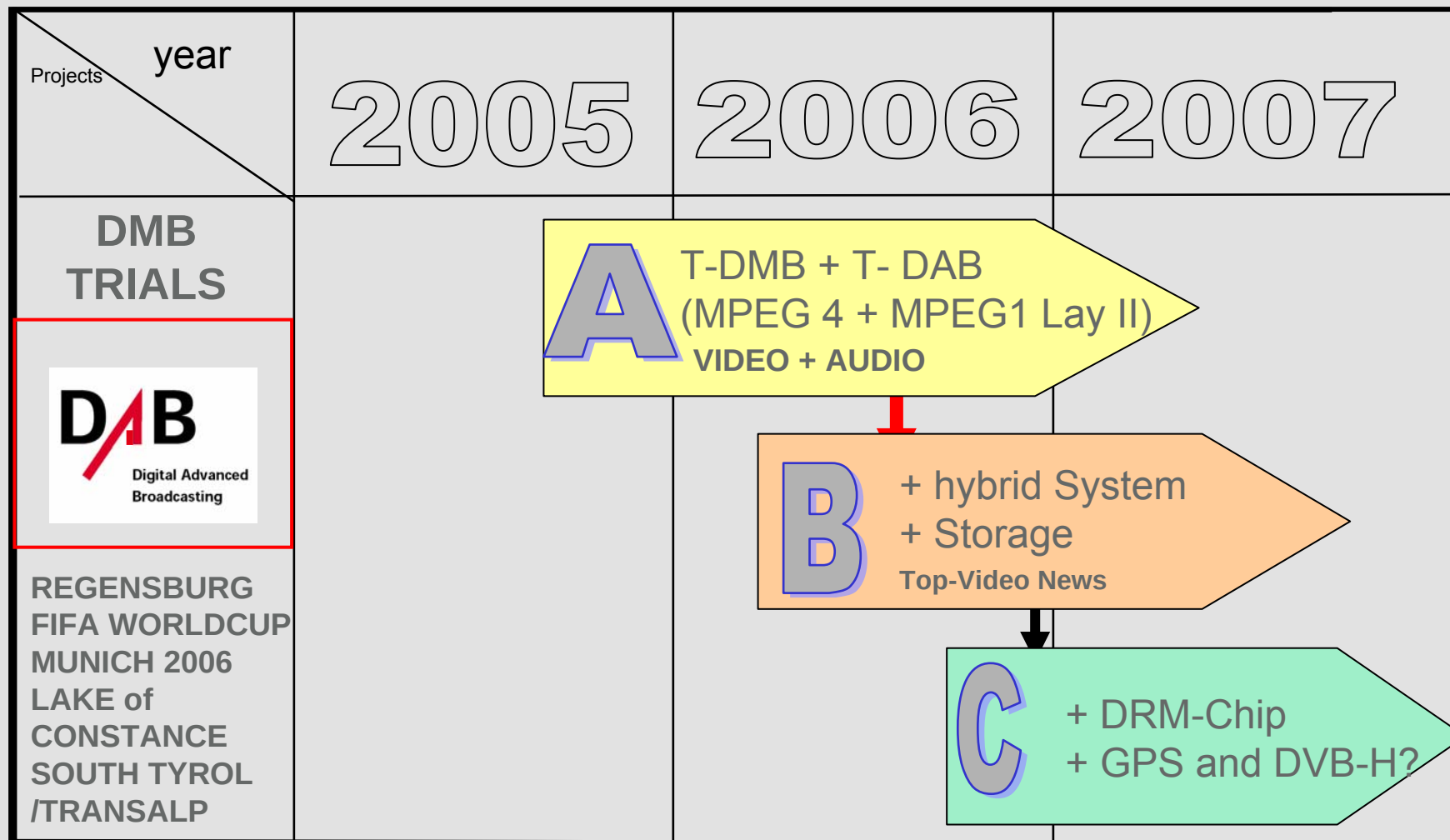
Coverage area:

mobile reception:
331852 people, 1950 km²

indoor reception:
195906 people, 461 km²

195.906 EW
461 km²

- Versorgung Indoor
- Versorgung Mobil
- DAB Standort





A 1

PARALLEL USE OF AUDIO AND VIDEO SERVICES WITHIN ONE ENSEMBLE

A 2

TESTING OF INDIVIDUAL USE OF CONTENT BY STORING IT TO STORAGE OF RECEIVER - **Virtual channel**

A 3

TEST OF RETURN CHANNEL APPLICATIONS

A 4

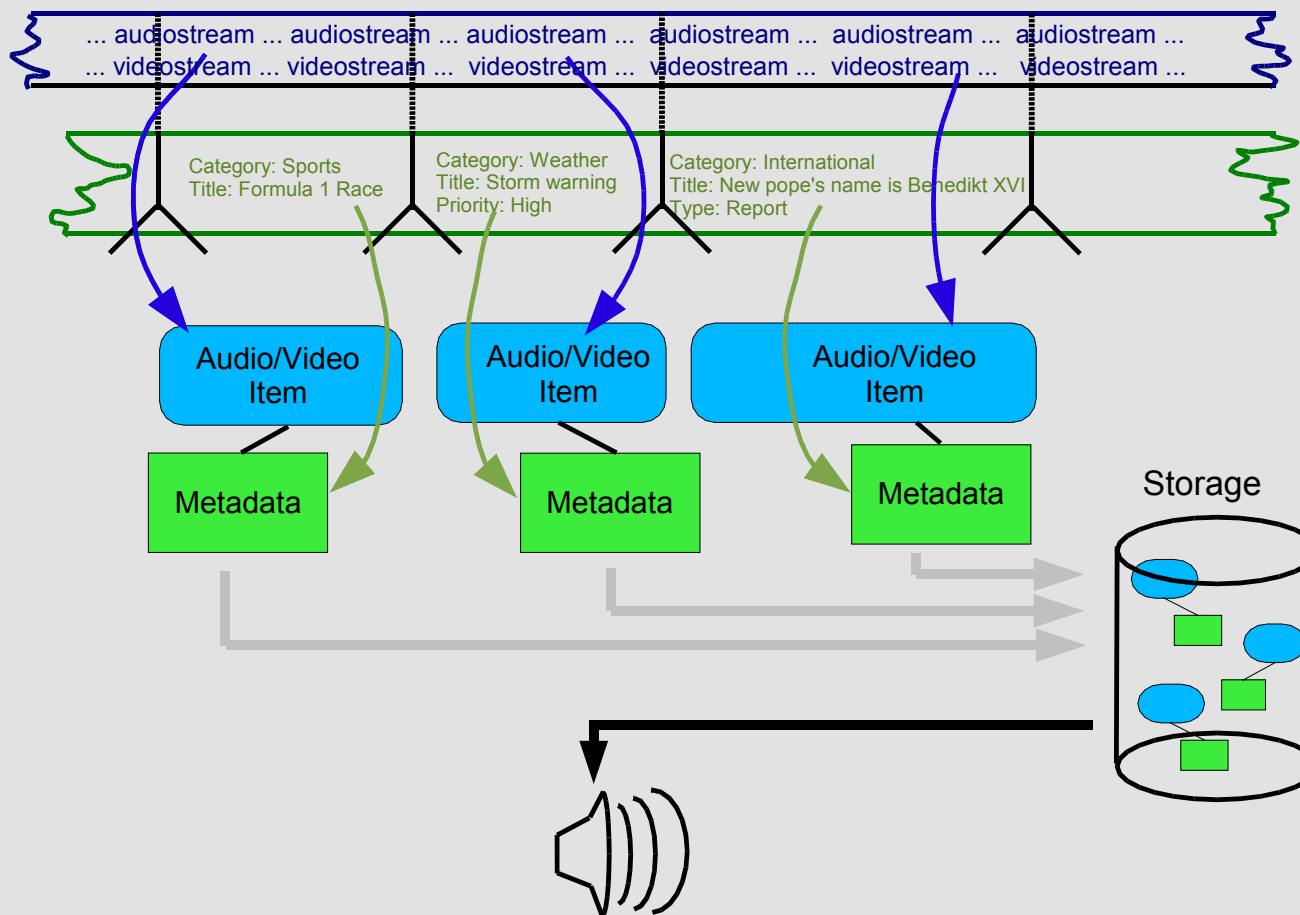
TEST OF DMB EQUIPMENT AND RECEIVERS

A 5

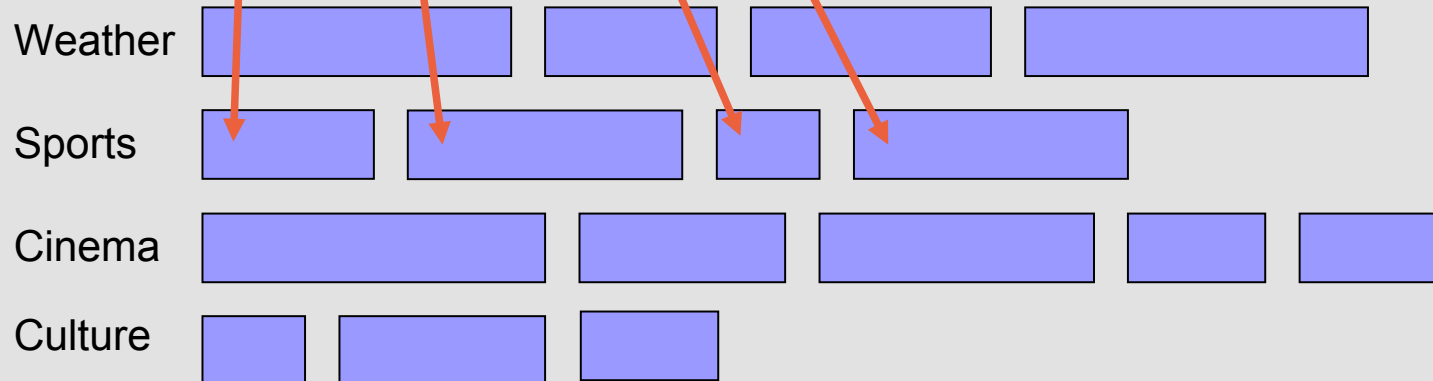
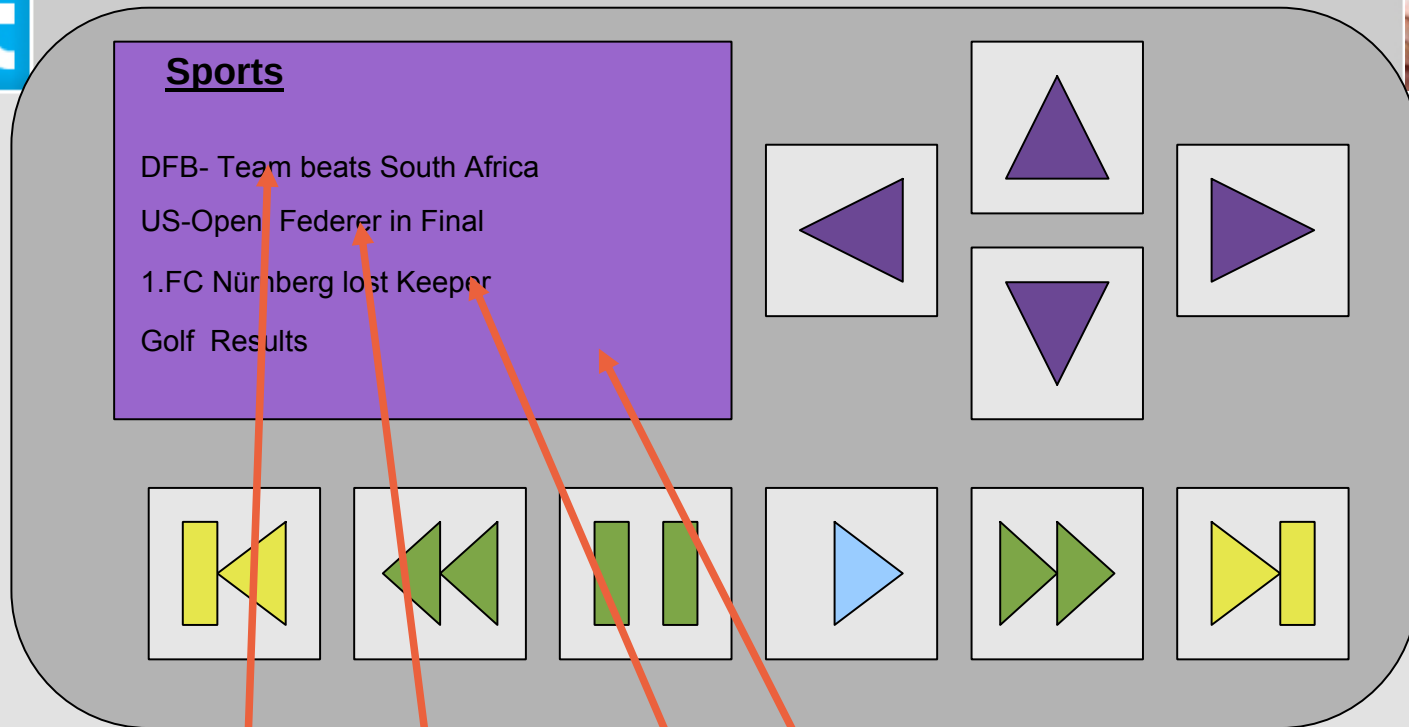
INTEGRATION OF EXISTING MULTIMEDIA SERVICES

A 6

ADDING METADATA TO FACILITATE RECORDING (TAGGING)



Tagging





Amount of time to store a video/audio stream to memory

32-96 kbit/s is a typical MUSICAM audio service (news, reports, audio book)

160 kbit/s is a typical MUSICAM music service (e.g. normal radio program)

400-800 kbit/s is a typical DMB video service

1,5 Mbit/s is the capacity of a DAB/DMB ensemble

Storage	32 kbit/s 240 kB/m	96 kbit/s 720 kB/m	160 kbit/s 1200 kB/m	400 kbit/s 3000 kB/m	800 kbit/s 6000 kB/m	1,5 Mbit/s 11250 kB/m
1 MB	4,2 Min	1,4 Min	< 1 Min	< 1 Min	< 1 Min	< 1 Min
16 MB	68 Min	22 Min	13 Min	5 Min	3 Min	1 Min
128 MB	9 Std.	3 Std.	100 Min	40 Min	21 Min	12 Min
512 MB	36 Std.	12 Std.	6,5 Std.	2,5 Std.	84 Min	48 Min
1 GB	72 Std.	24 Std.	13 Std.	5 Std.	2,8 Std.	1,6 Std.
20 GB	60 Tage	20 Tage	12 Tage	4,8 Tage	2,4 Tage	1,3 Tage
400 GB	3 Jahre	1 Jahr	7 Monate	3 Monate	1,5 Monate	26 Tage

20 GB is the capacity of portable devices e.g. iPOD

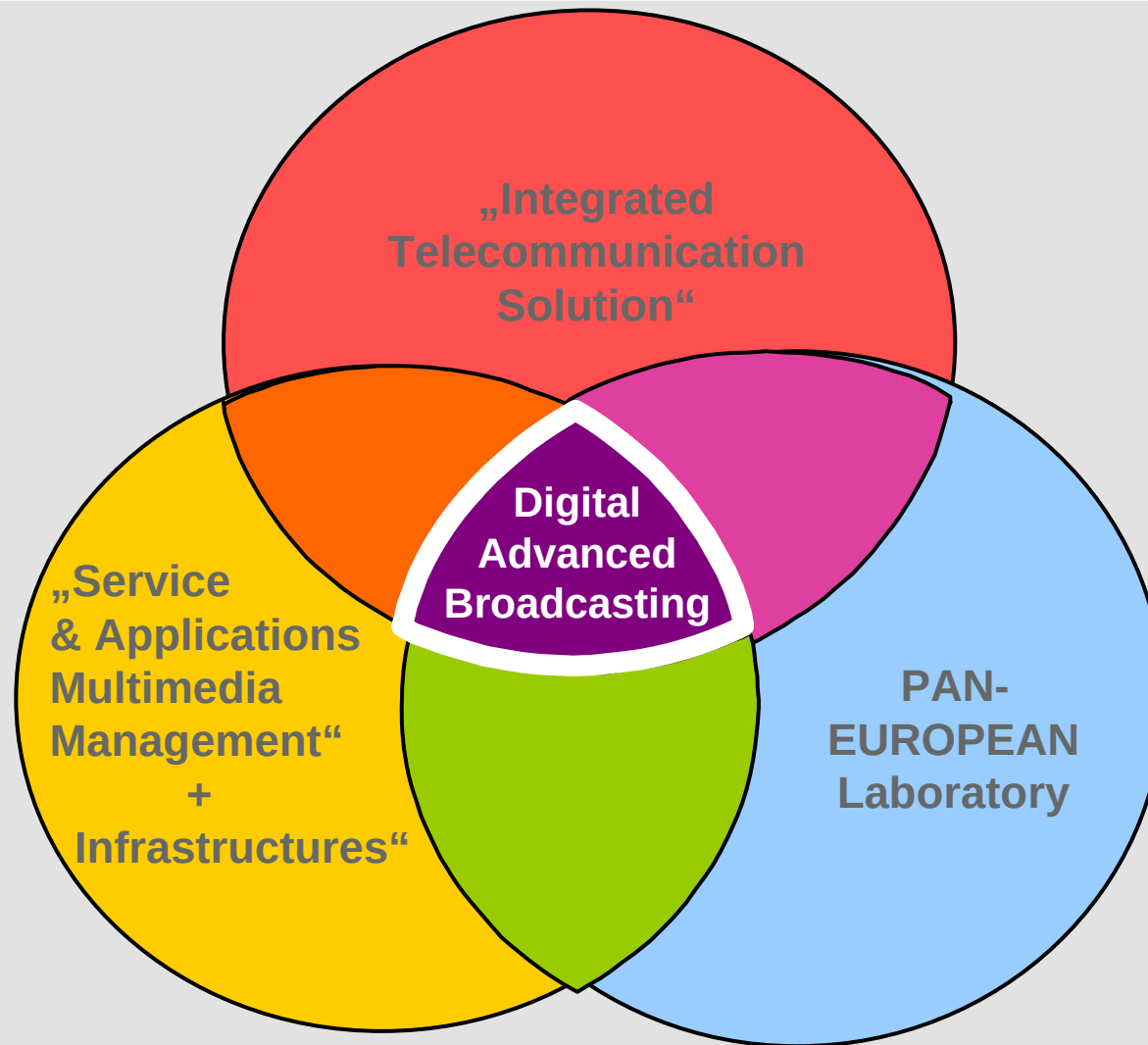
400 GB is the capacity of a hard disk

512 GB is the size of typical SD/MMC cards

**B 1****INFRASTRUCTURE COSTS FOR DMB L-BAND vs. BAND III****B 2****ENTRY FOR SMALL AND MEDIUM COMPANIES****B 3****NEW TYPES OF BUSINESS MODELS (e.g. payment via return channel)****B 4****COST BENEFIT ANALYSIS****B 5****GROWTH THROUGH INNOVATION**

**C 1****DEVELOPMENT OF ESG/EPG's****C 2****DEVELOPMENT OF DIFFERENT CONTENTS AND SERVICES ON A BROADCAST PLATFORM IN A „LIVE-STREAM“ MODE****C 3****DEVELOPMENT OF DIFFERENT CONTENTS AND SERVICES ON A HYBRID PLATFORM****C 4****DEVELOPMENT OF DIFFERENT CONTENTS AND SERVICES ON A HYBRID PLATFORM IN A „FOREWARD & STORE“ (= STORAGE)- MODE**

**D 1****USER TRIALS WITH approx. 200- 500 TEST PERSONS****D 2****VALIDATION OF USABILITY AND NAVIGATION CONCEPTS****D 3****VALIDATION OF SERVICE CONCEPTS****D 4****EXTENSION OF THE PROJECT FOR WORLD CUP 2006**





LG →



← Pantech

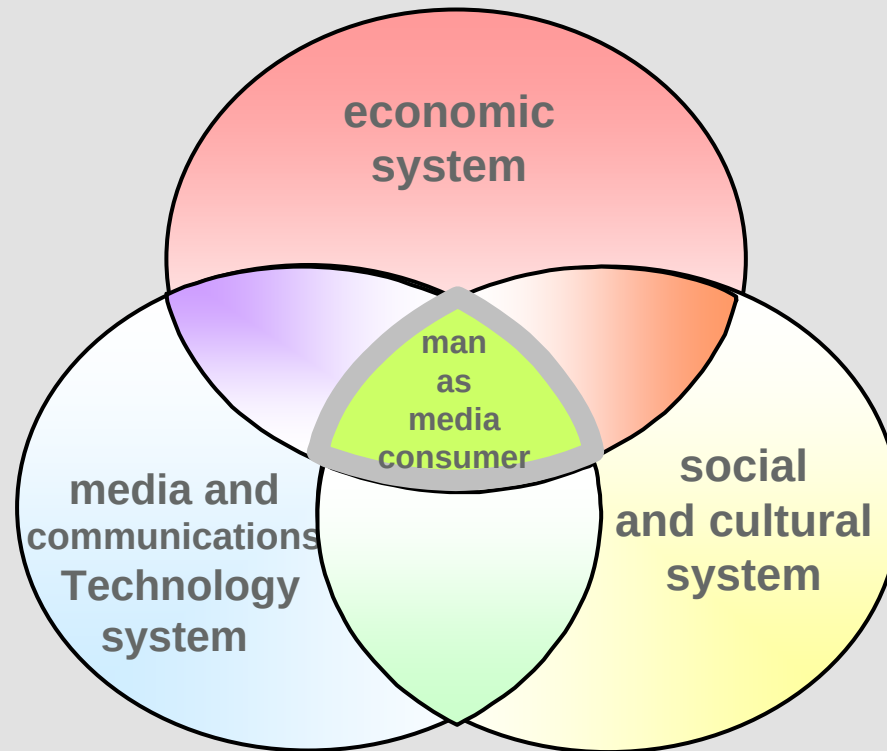
↙ Perstel

Samsung →



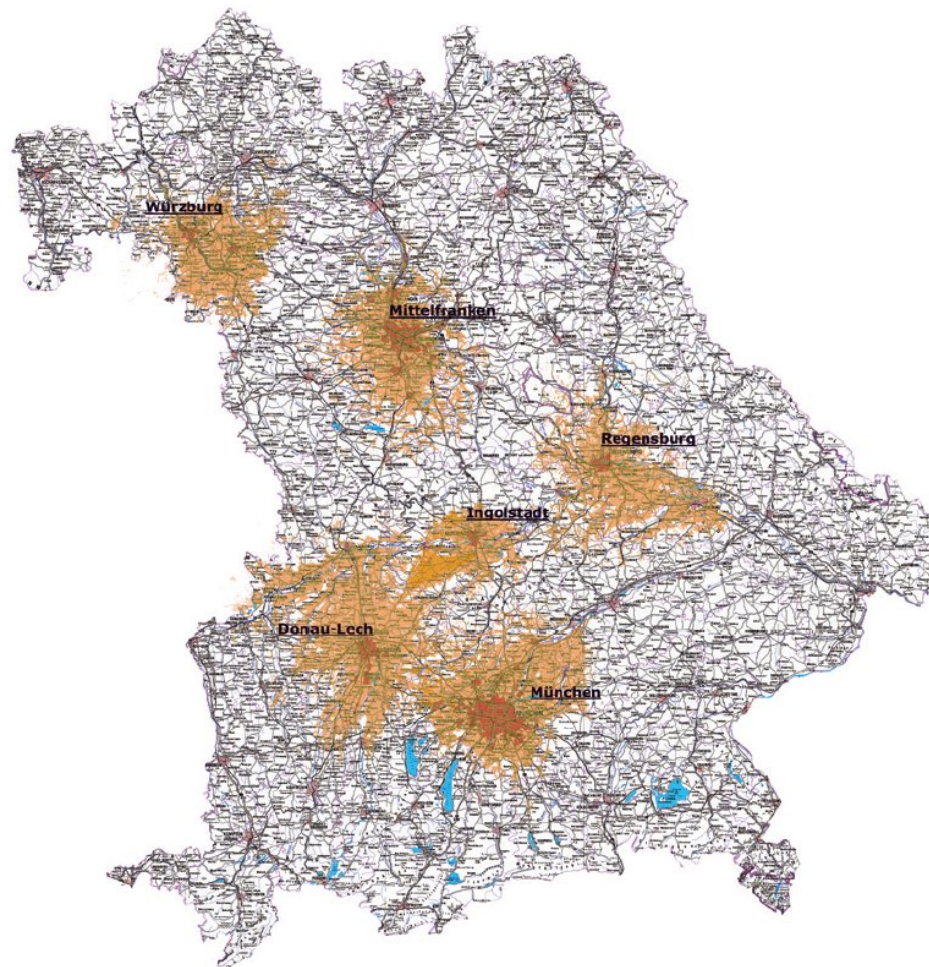


**The Project “Digital Advanced Broadcasting”
wants to develop and test in 4 joint DMB -Trials**

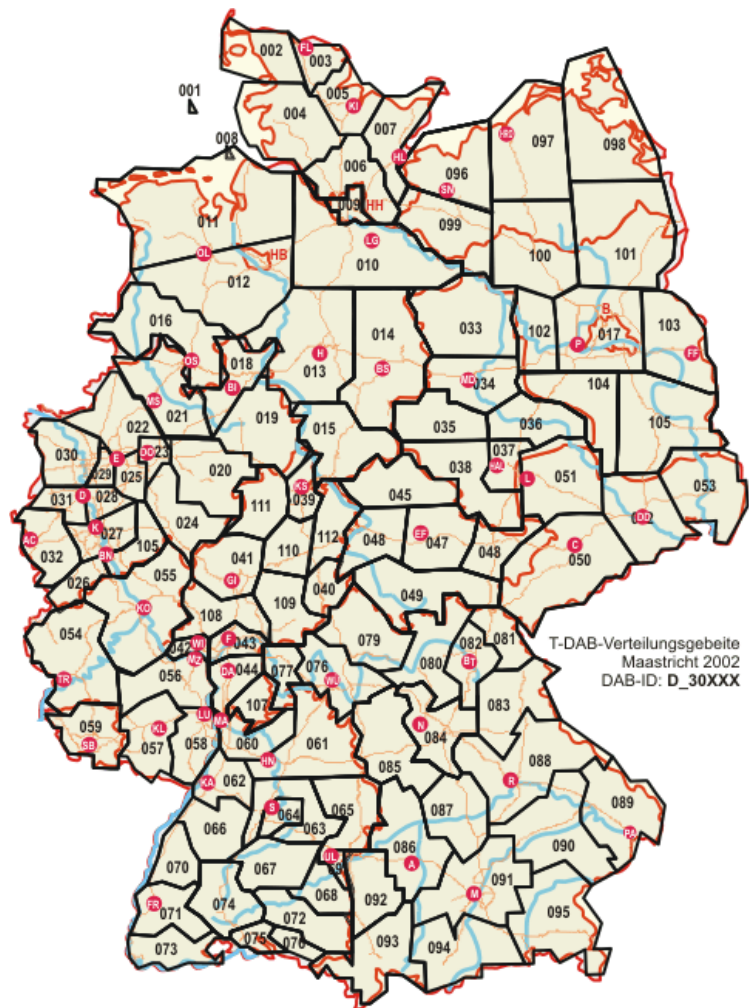




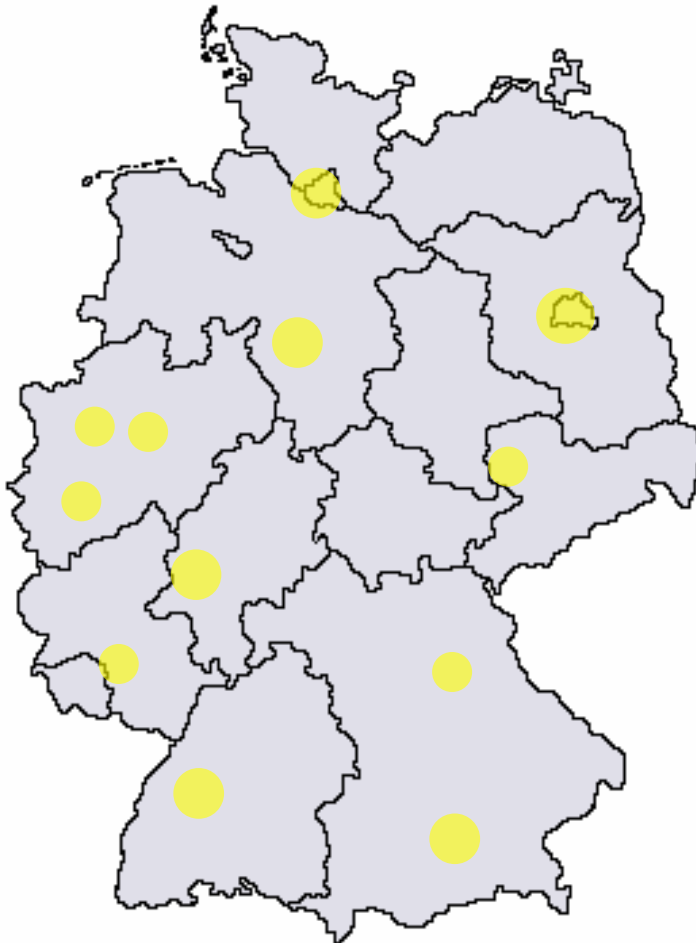
Current Situation:



L-Band Germany (Maastricht Coverage)



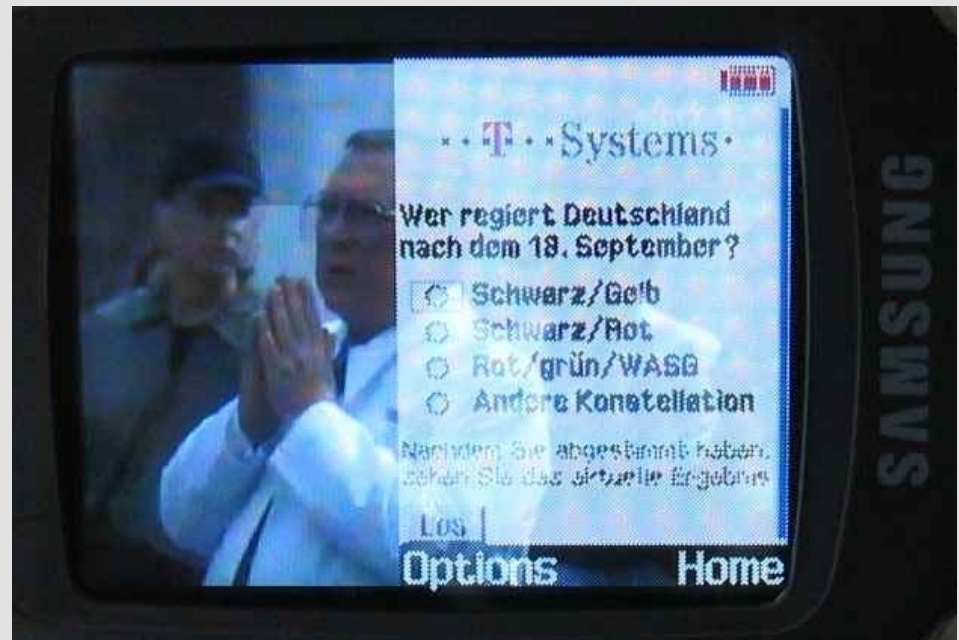
DMB Rollout 2006, Germany



- Start FIFA Soccer World Cup 2006
- 31 Transmitters
- More than 30 Repeaters
- In 12 Cities with World Cup Stadiums



Interactivity with Voting Application
Return Channel with 2.5 or 3 G ↙



Samsung ↗

First L-Band Mobile Phone



- **For DAB/DMB spectrum is available - now!**
 - Maastricht and Wiesbaden Coverage in L-Band is usable
 - RRC06 is the spectrum in UHF for DVB-H to use?
 - L-Band Commercial Service starting FIFA World Cup 2006
- **What kind of Mobile Media is important on the move?**
 - Every DMB Receiver is also an DAB Receiver
- **Less spectrum - more TV channels: DMB Tagging**
 - ESG/EPG, marked content and storage is key!



...to create new successful ways for the
future of broadcasting

For further Information...
www.bmt-online.de

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Thank you for your attention!