Mobile Broadcasting - Trends and Challenges

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Mobile TV - Quo Vadis?
VTE/ITG 5.2.4

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About **bmco**forum

"Broadcast Mobile Convergence Forum" is an

international non-profit industrial association

to accompany and support the development of an open market for mobile broadcast services

Work items 2007

1. Regulation and spectrum lobbying
2. DVB–H terminal interoperability
3. Bearer technologies
4. Broadcast network structure and coverage expectations
5. Generic business models
6. National trials
7. Content formats and services
8. Outlook 2010

106 mobile broadcast focussed industry companies and consortia from all parts of the value chain!

Merged with IPDC Forum

Co-founder and secretariat member of EMBC

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bmcoforum members: 106 (September 2007)

abertis telecom
Alcatel·Lucent
AMD
arqiva
arvato mobile – the future of entertainment
Audemat-Aztec – Broadcasting Innovation
Axel Technologies
Bluestreak
Bouygues Telecom
BROADCOM – Connecting everything
Cardinal Systems
coding technologies
contcast
COREMEDIA
CMC GROUP dawn tv
decontis
DiBcom – The Heart of Mobile TV
Discretix – embedding security solutions
dtv interactive
DW-WORLD.DE DEUTSCHE WELLE
elisa
envivio
ERICSSON – TAKING YOU FORWARD
EXPWAY
initiative
Fraunhofer Institut Integrierte Schaltungen
FRONTIER SILICON
ftgroup
gemalto – security to be free
Giesecke & Devrient
GMIT
goldbach media
Infineon
IfN – Institut für Nachrichtentechnik
NAGRAVISION – KUDELSKI GROUP
Institut für Rundfunktechnik IRT
irdeto
kpn
LG – Life's Good
LS telcom
mabb
MOTOROLA
MTV
nationalgrid Wireless
NDS – World Leader • World Vision
NEC
NETZWERT AKTIENGESELLSCHAFT
NEXTREAMING
NOKIA – Connecting People
Nokia Siemens Networks
nova
NXP – founded by Philips
O2
ORF
packetvideo
Panasonic
penthera
PLAZAMEDIA TV & FILM PRODUKTION
plus TV
ProSiebenSat.1 Media AG
Pulse – A Technitrol Company
QUALCOMM
ROHDE & SCHWARZ
roundbox
RRD – Reti Radiotelevisive Digitali
RTL MOBILE
S3 – Silicon & Software Systems
SafeNet – The Foundation of Information Security
Sagem Communication – SAFRAN Group
SAMSUNG
SHARP
siano – MOBILE SILICON
SIDSA
SONY
Sony Ericsson
streamezzo group
swisscom broadcast
TANDBERG television
TATA ELXSI – Engineering Creativity
tdf
TELESUISSE
TeliaSonera
TERACOM
TEXAS INSTRUMENTS
THOMSON – images & beyond
TIM
TELECOM ITALIA
T-Mobile
toBE mobile
TOSHIBA
T-Systems
Turner – A TimeWarner Company
UDCAST – Full IP over Broadcast Media
University of Turku – Communication Systems
TURN – Mobile Media Group
WIDEVINE TECHNOLOGIES
vodafone
WRG

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bmcoforum Studies

Public available from **bmco**forum website:

- Mobile Broadcast Business Models - A State-of-the-Art Study (11/2006)
- Mobile Broadcast Technologies - Link Budgets (01/2007)
- Mobile Broadcast Bearer Technologies - A Comparison (01/2007)

To be ordered:

- Results of Mobile TV Pilots - A Survey (11/2006)
- Spectrum for Mobile Broadcasting in Europe (11/2006)

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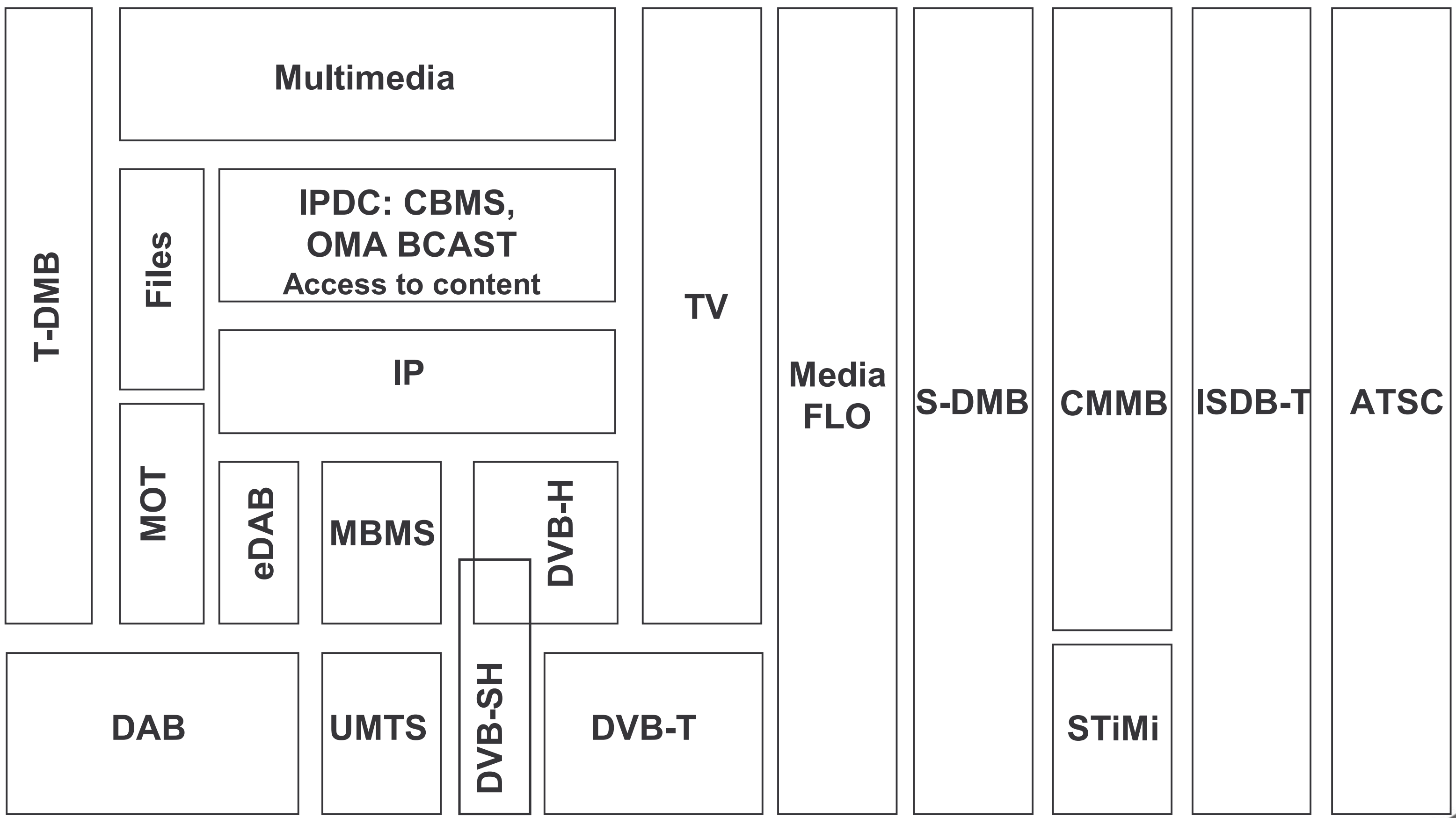
Overview Mobile Broadcast Technologies



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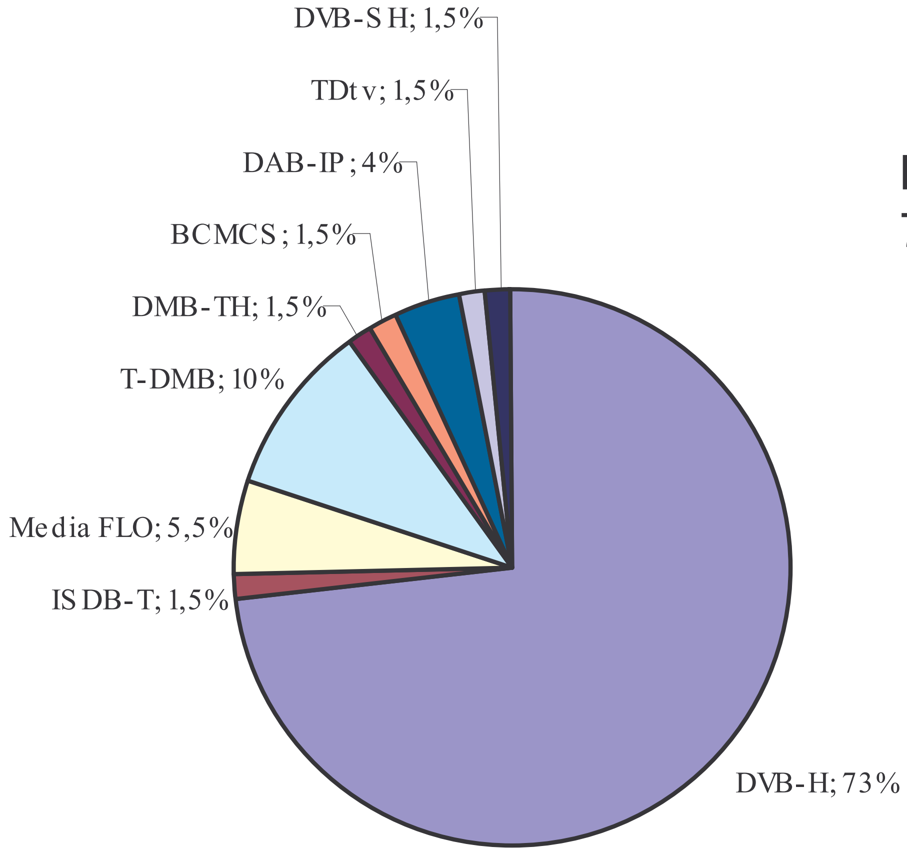
The Market Development Worldwide



Basis:
70 Pilots and services worldwide

Share of Mobile TV Deployment Activity

Source: ARCCHART 2007

IMS Research Forecast on Regional Technology Split

Forecast for 2011:

- Americas region: 60% of worldwide FLO subscribers
- Europe: 61% of worldwide DVB-H / DVB-SH subscribers
- Korea and Japan: T-DMB and ISDB-T, will also expected to become increasingly region-specific between 2007 and 2011

Reasons:

- Spectrum availability,
- Existing cellular and DTT infrastructure,
- Market needs
- National political and economic interests.

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Forecast Juniper Research 2012

- 4.7 billion € consumer spending on mobile broadcast TV
- 120 Mio. consumers in 40+ countries
- DVB-H the dominant transmission standard

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Convergence/compatibility aspects (1)

- Different bearer & service technologies under evaluation
- Each technologies has its pros and cons
- Variety of business models, networks coverage constraints, cost and licensing conditions and even the availability of frequencies in other bands may make suitable one or another combination of technologies
- DVB-H is the most piloted bearer technology today
- DVB-H, DVB-IPDC and OMA BCAST seem to be the most accepted technologies today

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Convergence/compatibility aspects (2)

- Other technologies such as T-DMB/DAB-IP, FLO, DVB-SH,CMMB STiMi, 3G MBMS has its supporters
- Therefore harmonisation is necessary for "seamless" European-wide and global services
- Key components include
  - Receiver Frequencies
  - Bearer combinations
  - Multiple Service Specifications and Implementations
    - Electronic Service Guide
    - Service Purchase and Protection

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Convergence/compatibility aspects (4)

Bearer Combinations (examples only):

- Integrated HF-receivers (DAB and DVB-T) on the roadmap
- Announcements during 3GSM (examples):
  - DiBcom: DIB1908x-H, a multi-mode, multi-band receiver demodulating DVB-T, DVB-H, T-DMB, DAB, DAB-IP and Enhanced-mode-DAB signals in VHF, UHF and L-band frequency bands.
  - NXP: extension of its reception modules family for UHF and L-Band to the S-Band - delivery of broadcast mobile TV in the S-band (2.2GHz) based on DVB-SH. First release of the S-Band-compatible RF chipset is scheduled before June 2007.
  - Qualcomm: Chipset supporting MediaFLO, DVB-H and ISDB-T

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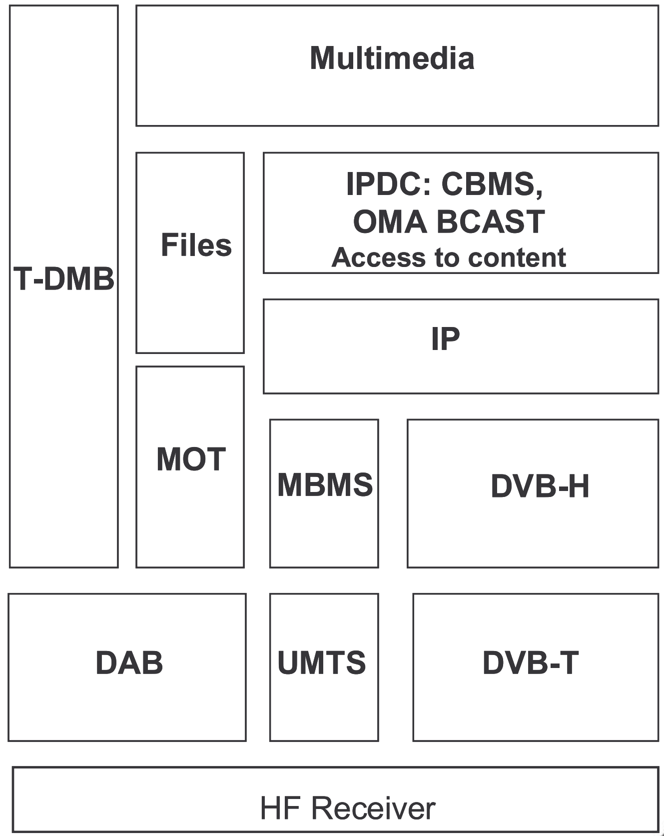
Convergence/compatibility aspects (5)

Service Specifications Directions:

Option A:

- Parallel development of DMB and DVB-H/IPDC
- Different services over DMB and DVB-H/IPDC
- Dual-mode handhelds
- Announcement of BT Movio on dual DAB-IP and DVB-H receivers (invalid now)



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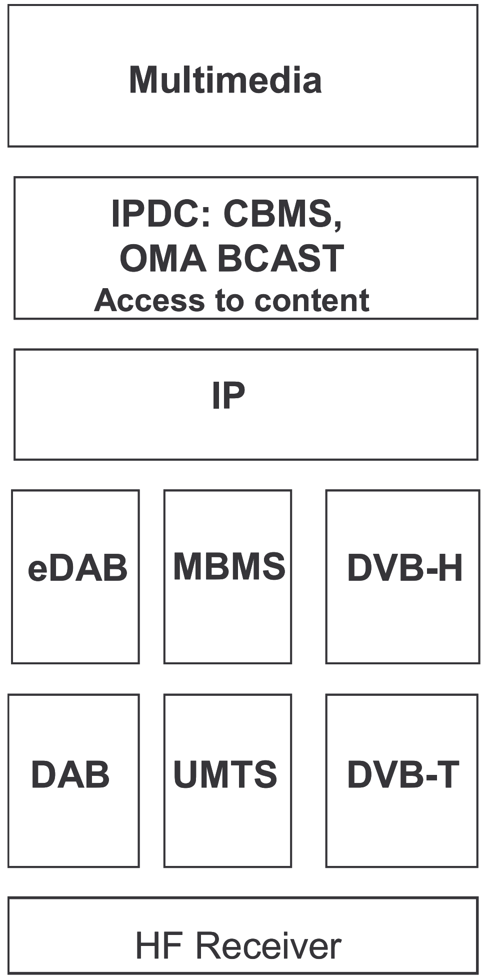
Convergence/compatibility aspects (6)

Service Specifications Directions:

Option B:

- IP Layer adaptation e.g. adapt DAB to IP Layer
- DAB and DVB-H will be used as bearers
- DAB for band III and L-band
- DVB-H for band IV/I and L-band
- Liaison between WorldDMB - TFC and DVB-IPDC



bmcoforum profiling IPDC and OMA BCAST

_Objective:

- Promote and develop an open market for mobile broadcast services
- Accelerate the launch of commercial services

_DVB-IPDC profiles

- Interoperability demonstrations at IBC 2006 (Amsterdam) and 3GSM World 2007 (Barcelona)

_OMA BCAST profiles

- Based on commercial requirement
- Features essential for providers to launch or to further develop mobile TV services
- Recent work focuses on commercial employmentsmid 2008
- Special focus on OMA BCAST Smartcard profile (required by most of the European MNOs)

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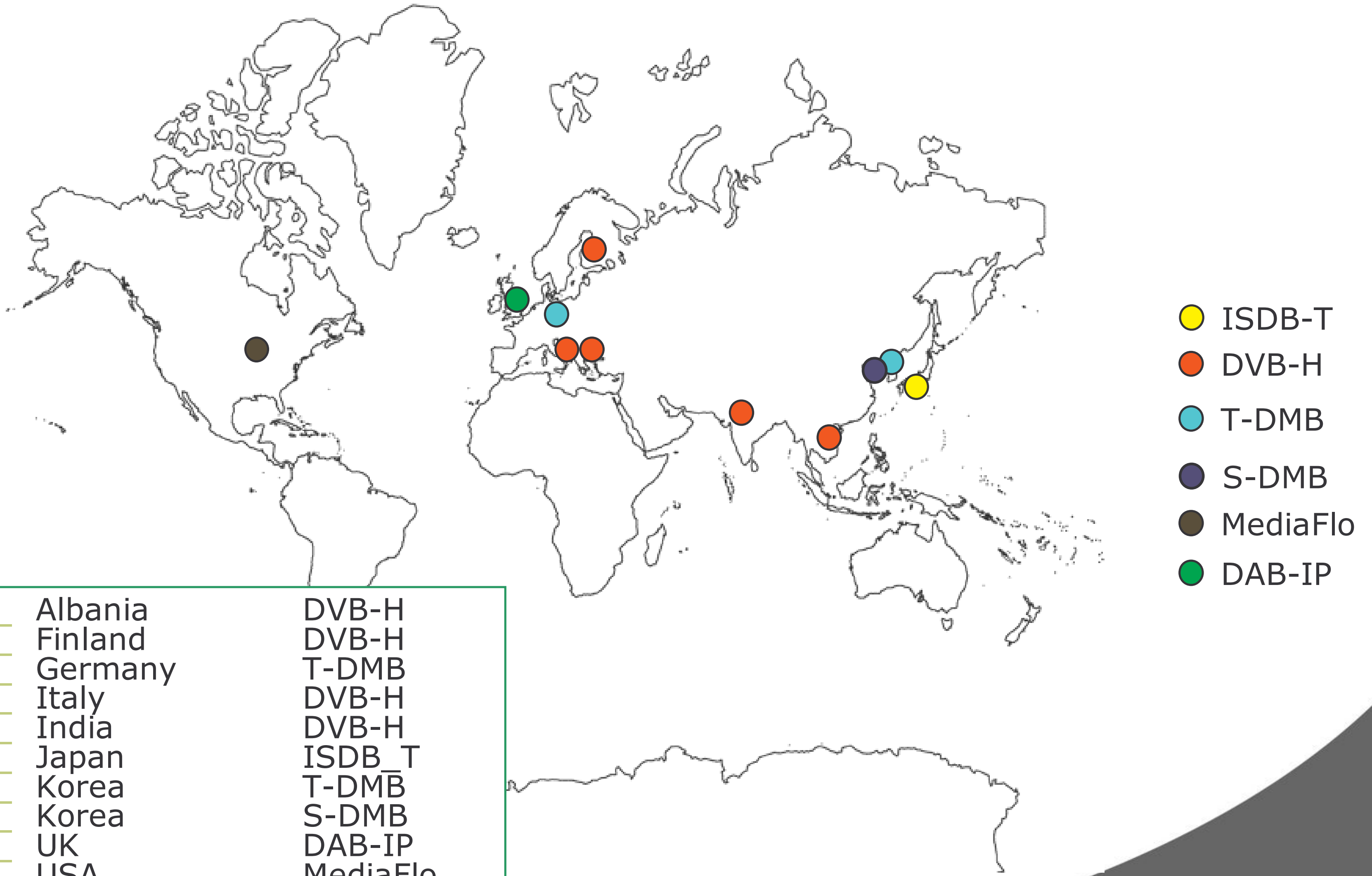
Commercial Mobile Broadcast Services



Albania	DVB-H
Finland	DVB-H
Germany	T-DMB
Italy	DVB-H
India	DVB-H
Japan	ISDB_T
Korea	T-DMB
Korea	S-DMB
UK	DAB-IP
USA	MediaFlo
Vietnam	DVB-H

Source: ARCCHART 2007

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Commercial Services

Technology	Country	Start	No of users	
S-DMB	Korea	05/2006	1.130.000[1)]	05/2007
T-DMB	Korea	12/2005	5.327.000[2)]	05/2007
	Germany	06/2006	? 10.000	xx/2007
DVB-H	Italy- 3 Italy	05/2006	530.000	05/2007
	- TIM	06/2006		
	- Vodafone	02/2007		
	Finland	05/2007		
	Vietnam	Announced		
	India	05/2007		
DAB-IP [4)]	UK	10/2006	? 7.000	
ISDB-T	Japan		7.370.000[3)]	04/2007
MediaFLO	USA			

1) 1,085 Mio. (= 96%) mobile phones
2) 40% phones, 40% car devices, 20% PC, PDA, etc.
3) 2,4 Mio increase from March to April 07
4) Service to be closed in January 2008

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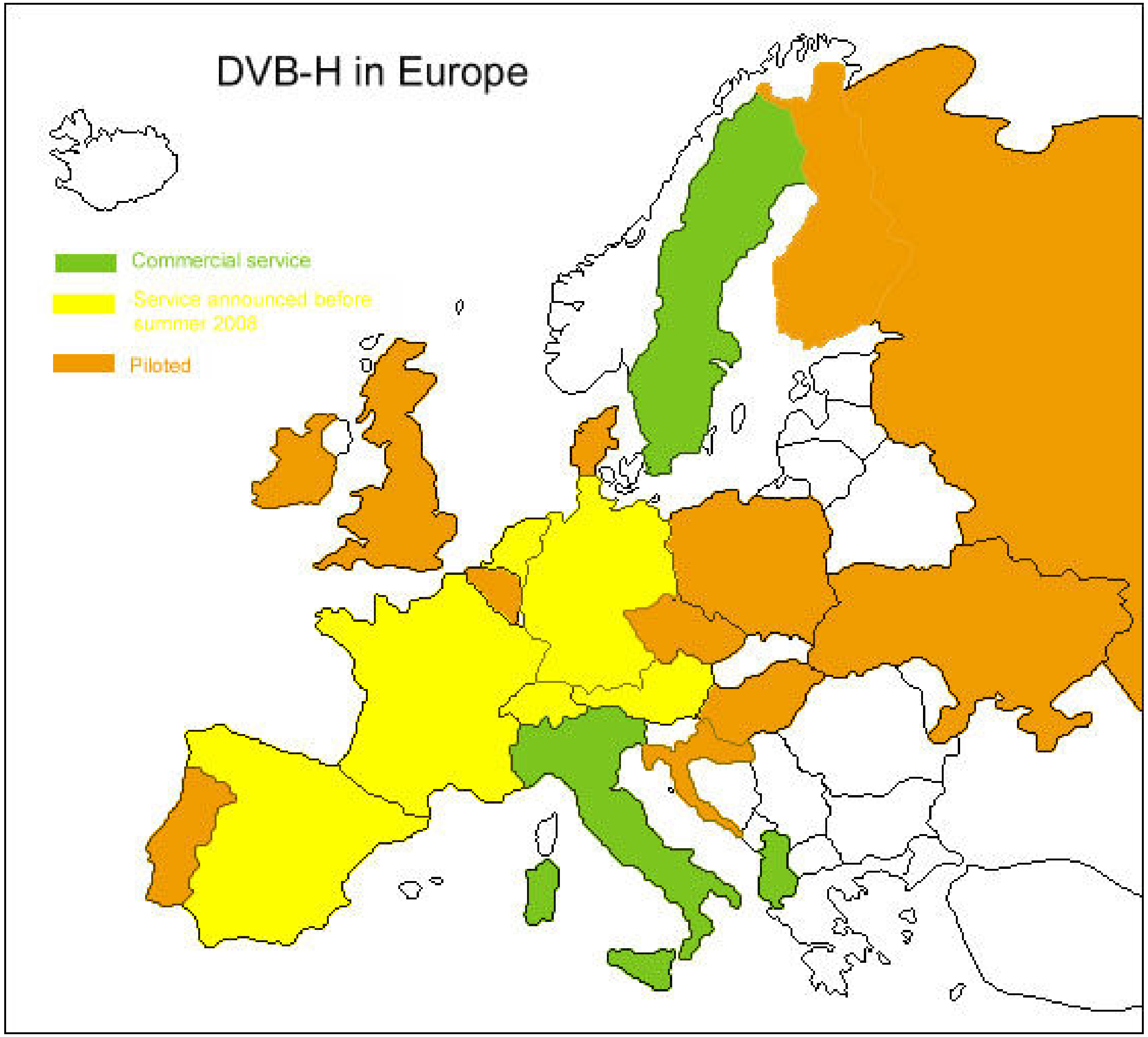
Pilots & Commercial DVB-H Networks in Europe



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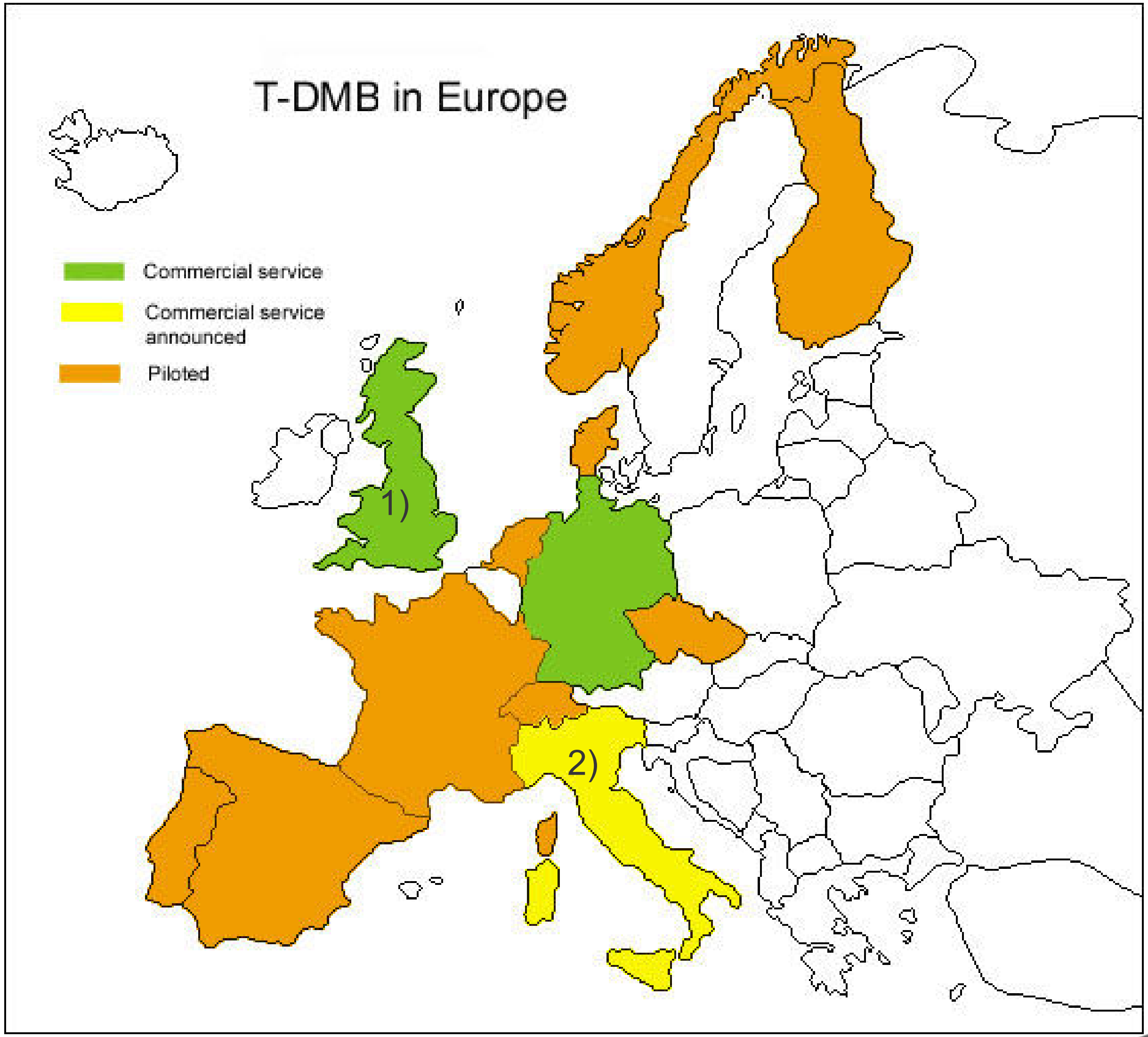
Pilots & Commercial T-DMB Networks in Europe



1) DAB-IP service to be closed in Jan 2008
2) RAI

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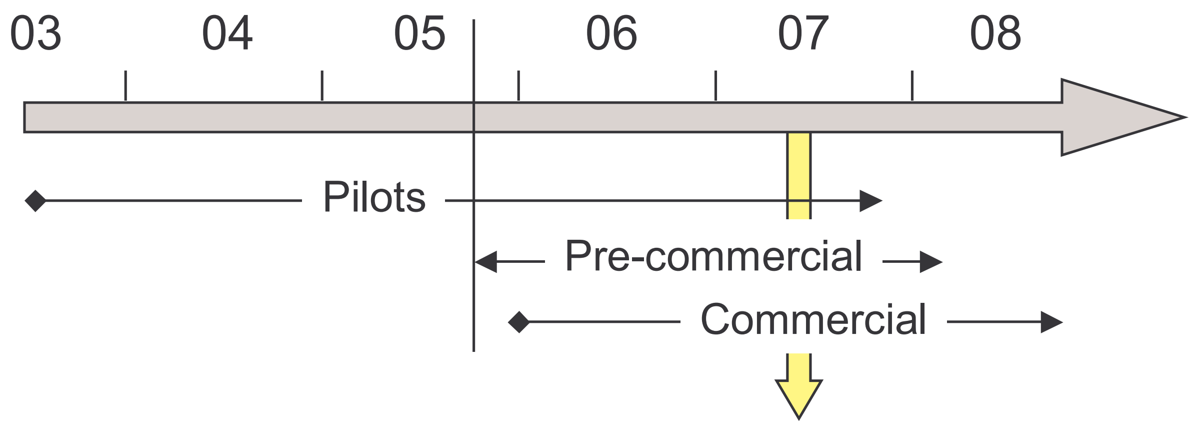
Commercialisation lag

There is a commercialisation lag in most of the countries after having lots of pilots worldwide



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Mobile TV Policy of the European Commission

- EC communication on "Strengthening the Internal Market for Mobile TV" (July 18th, 2007)
- 3 key success factors
  1. Standards/Interoperability
     - Promote consensus around a common standard
     - DVB-H is seen as the strongest contender: Include DVB-H in the EU's official list of standards
     - Market observation until 2008; If necessary mandating the use of DVB-H

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Mobile TV Policy of the European Commission

2. Spectrum
   - Member States are called upon to make UHF spectrum available as soon as possible
   - UHF is considered as the most suitable band
   - Opening of L-band as fallback solution
3. Favourable regulatory environment
   - “Light touch” regulation
   - Exchange of best practice
   - Provide guidance for a coherent framework for mobile TV authorisation regimes

bmcoforum Position

1. Standards/Interoperability
   - A lot of different reasons may lead to an alternate or in some cases an additional choice of bearer technologies
   - Giving special support or preference towards one technology should not prevent any other technology to be used or to compete
   - Available multi-standards approaches promote interoperability and help overcoming the fragmentation at least at the bearer technology level
   - We support the EC's commitment to closely monitor the situation within the EU in the time period 2007 to 2008.
   - But: We do not consider the mandating of any mobile broadcast technology in Europe as necessary

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2. Regulation
   - "Light touch" regulation as well as infrastructure sharing and co-location are seen as a good proposition for future proven competitive services
   - We do not believe there is a case for Commission intervention in the licensing of content
3. Spectrum
   - Our spectrum position is broadly in line with what is described in the EC Communication
   - Additionally: In a lot of situations, Mobile TV may be implemented before UHF spectrum will be freed by digital switch-over. Examples show that UHF spectrum can be provided today without cancelling any existing service allowing mobile TV in multi-city networks.

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Key success factors

- Open end-to-end standard systems (worldwide!!)
  - Repeat the success of GSM
- Good reception characteristics
  - Indoor coverage
- Attractive content
  - Brands
  - Later also made for mobile content
- Interactivity for successful business models
- Choice of terminals

bmcoforum works to make them a reality!

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Contact

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