



Bundesnetzagentur

A Sustainable Approach For the Supply of Capacity for Mobile And Broadcasting Services in the UHF-Band

Elmar Zilles, Head of Section Broadcasting

INFOFEST 2015

Budva, 28.09.2015



www.bundesnetzagentur.de



Starting point : Information on the latest steps taken in Germany

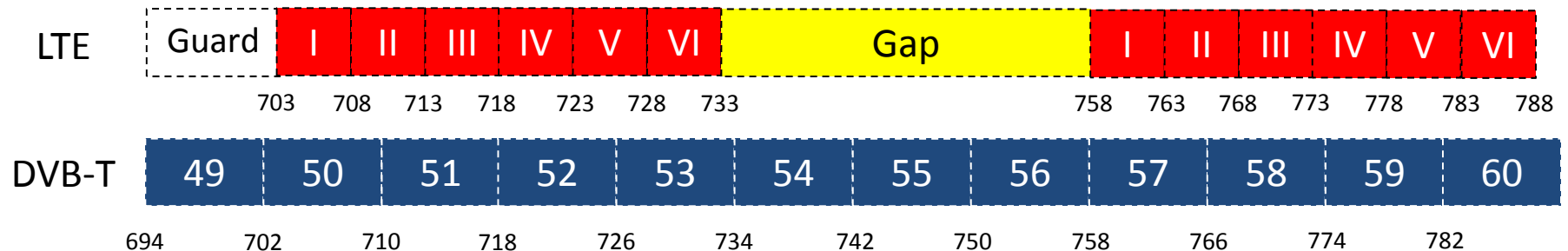
- 700 MHz band auctioned in May/June 2015
Clearance from broadcasting starting from 2016 (ending 2019 at latest), based on transition from DVB-T/MPEG2 to DVB-T2/HEVC
- Roll-out of LTE700 to be expected as soon as regionally possible;
Coverage obligations 98 % of German households per operator with 50 Mbit/s per sector (not to be achieved by 700 MHz band only)



„Decoupling“ with least impact



- Coordination with 10 (!) neighboring countries started in 2014; activities also in multilateral groups such as WEDDIP, NEDDIF and new South-Eastern European Group
- Sufficient decoupling of individual approaches by countries achieved by freeing channels 50 to 53 in neighbouring countries (due to sensitivity of base stations concerning broadcast transmissions from adjacent areas)
- In channels 57 to 60 much less sensitivity of hand-helds, in channels 49 and 54 to 56 no relevant sensitivity expected



Result of the auction



Rundenergebnis der Runde 181				
Frequenzbereich	Block	Ausstattung	Höchstbieter	Höchstgebot (€ in Tsd.)
700 MHz (gepaart)	700 A	2x5 MHz konkret	TEF DE	166.397
	700 B	2x5 MHz abstrakt	Vodafone	165.509
	700 C	2x5 MHz abstrakt	TEF DE	166.847
	700 D	2x5 MHz abstrakt	Telekom	166.567
	700 E	2x5 MHz abstrakt	Telekom	171.649
	700 F	2x5 MHz abstrakt	Vodafone	163.476
900 MHz (gepaart)	900 A	2x5 MHz konkret	TEF DE	195.520
	900 B	2x5 MHz abstrakt	Vodafone	211.807
	900 C	2x5 MHz abstrakt	Vodafone	203.298
	900 D	2x5 MHz abstrakt	Telekom	183.671
	900 E	2x5 MHz abstrakt	Telekom	180.968
	900 F	2x5 MHz abstrakt	Telekom	180.465
	900 G	2x5 MHz abstrakt	TEF DE	189.958
1,8 GHz (gepaart)	1800 A	2x5 MHz abstrakt	Vodafone	237.494
	1800 B	2x5 MHz abstrakt	Telekom	248.054
	1800 C	2x5 MHz abstrakt	Vodafone	258.247
	1800 D	2x5 MHz abstrakt	Vodafone	249.133
	1800 E	2x5 MHz abstrakt	Telekom	248.101
	1800 F	2x5 MHz abstrakt	Vodafone	255.967
	1800 G	2x5 MHz abstrakt	TEF DE	239.228
	1800 H	2x5 MHz abstrakt	Telekom	248.784
	1800 I	2x5 MHz abstrakt	TEF DE	240.288
	1800 J	2x5 MHz konkret	Vodafone	180.153
1,5 GHz (ungepaart)	1500 A	1x5 MHz abstrakt	Vodafone	40.939
	1500 B	1x5 MHz abstrakt	Vodafone	40.939
	1500 C	1x5 MHz abstrakt	Vodafone	40.919
	1500 D	1x5 MHz abstrakt	Telekom	42.964
	1500 E	1x5 MHz abstrakt	Vodafone	42.961
	1500 F	1x5 MHz abstrakt	Telekom	39.011
	1500 G	1x5 MHz abstrakt	Telekom	40.961
	1500 H	1x5 MHz abstrakt	Telekom	40.961
Summe aller gehaltenen Höchstgebote (€ in Tsd.)				5.081.236
Zahlungsverpflichtung aufgrund zurückgenommener Höchstgebote (€ in Tsd.)				0
Summe (€ in Tsd.)				5.081.236



Traditional approach:

“Spectrum dividend” or “Digital Dividend”

Method:

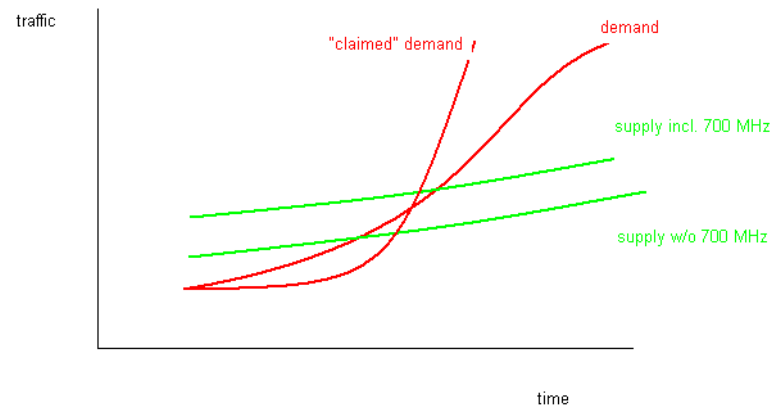
cut off frequency resources from an existing service;
politically conflictive

A proper establishment has to take into account all societal needs and is based on political decisions, not merely technical capabilities



➤ Conflictive approach:

- mobile network traffic demand will soon exceed any limit;
more spectrum needed



- broadcast operators want to keep “their” spectrum
- additional demands by other services (following the definition of services according to the Radio Regulations)



Excourse I: Discussion of broadcast demands

- About 10 programmes needed to provide for 95 % of the consumption time of a single user; about 30 programmes needed to provide for 95 % of the consumption time of 95 % of all users a on a competitive platform
- For a future fixed reception situation:
development of resolution: 720p, 1080p, 4k, 8k, ...
development of compression: MPEG-2, H.264/AVC, H.265/HEVC
- Terrestrial provision of sufficient capacity for a competitive platform in terms of number of programmes and display feed highly questionable in some specific countries/markets
- Different conclusion for portable or mobile reception (small size of displays overrules demand from resolution)
- Smart combination of platforms and application situations needed



➤ Future approach: Collaborative, not conflicting

- Conflicting approach: broadcasters will lose slices from their “sausage” (“dividend I”, “dividend II”, ...)
- Better:
 - putting all demands together on one table
 - putting all resources together as well
 - define the framework of a commonly used network structure (no type of technical implementation preferred for the time being, great task for engineers!)
 - think in terms of services delivered to the customer instead of services defined in Radio Regulations (=> RR amendments?); “audiovisual downstream” , not “broadcast/mobile service”

➤ “Provocation” or not:

In best case, from some future point for ALL UHF-band!!!



Excourse II: Reflection of the latest German steps

- Attempt to take all societal needs on board...check
Broadcast gets sufficient capacities, based on latest technology (DVB-T2/HEVC)
- Political decision ... check
Consensus achieved between Federal Republic and Federal States
- Collaborative approach... no check
 - no technical basis yet (no common platform)
 - frequency allocation and plan still follow “old” definitions of “radio services” instead of “service delivered to the customer”
=> ITU RR framework needs to be updated!
- Future: enhancement of collaboration mobile/broadcast
Prolongation of DVB-T2 frequency assignments expiration from 2025 to 2030

A reminder, which still holds:



Use of words may influence minds, so...

This time, it is not a “dividend”!

The circumstances are different.

The approach should be different, too:

**A Sustainable Approach For the
Supply of Capacity for Mobile
And Broadcasting Services
in the UHF-Band**



Bundesnetzagentur

Join the party at the earliest point of time possible!!!

Elmar Zilles

Head of Section Broadcasting

+496131183140

sascha.falahat@bnetza.de