The 2010 frequency auction was key means by which German mobile operators obtained **new and additional frequencies**. Such a spectrum package is **unique in Europe**.
Priority Areas

Population:

- **P1**: up to 5,000
- **P2**: 5,001 – 20,000
- **P3**: 20,001 – 50,000
- **P4**: more than 50,001

The mobile companies have met the coverage obligation in:

- North-Rhine Westphalia
- Saarland
- Baden-Württemberg
- Bavaria
- Hesse
- Rhineland-Palatinate

**Bundesnetzagentur’s** conclusion on **frequency allotment** on 900 MHz-range: Operators are equipped with competitive frequencies.

With use of the GSM frequencies after 2016 in mind Bundesnetzagentur also published key elements paper to determine the **future frequency requirements** in the ranges 900 MHz and 1800 MHz.
Fixed Line Networks Investments

<table>
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<tr>
<th>Year</th>
<th>Total</th>
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<th>Competitors</th>
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NGA Forum: Issues

- Open Access
- Technical and operational aspects related to access to fibre networks and other NGA networks
- Infrastructure sharing (e.g. in-house cabling)
- Cooperation and Co-Investment
NGA Forum: Policy Document Interoperability

- Clarification and definition of fundamental aspects of broadband network architectures and technologies
- Illustration of available access technologies and outline of their characteristic features
- Assessing access technologies and providing guidance with regard to their application in different access scenarios
- Identifying technical interfaces determining possible wholesale access products
- Defining operational processes for wholesale access products (provision, termination, fault-clearance and switch of provider)
- Proposal for a concrete ethernet access product envisaged: „ready for use“ blueprint for an wholesale access

Infrastructure Map

Released Information

BNetzA hands out information about type, owner and contact person of infrastructure manually
In addition BNetzA hands out information about the geographical location
Implementation of a Web-GIS application

First Stage: BNetzA hands out information about type, owner and contact person of infrastructure manually
Second Stage: In addition BNetzA hands out information about the geographical location
Third Stage: Implementation of a Web-GIS application (Started October 2011)
Local Loop Access Obligations

- Telekom Deutschland GmbH (incumbent) **obliged to grant**
  - **Fully unbundled access** to the copper or mass-market FTTH-local loop and shared access to copper loops
  - **Co-location** for access to bundled and unbundled loops
  - **Cooperation allowed** for connecting co-location spaces
  - **Access to cable ducts** between street cabinet and MDF as backhaul for FTTN; access to dark fibre if duct capacity is unavailable
- **Non-discrimination**
- Obligation to present **access agreements** to BNetzA

Local Loop Rates Regulation

- **Exchangeability of copper- and FTTH-ULL**: ex-ante regulated rates serve as a peg to ensure cost-oriented prices for FTTH access through margin-squeeze tests
- **Therefore**
  - **Ex-ante rate approval** for access to local loop and co-location with exception of mass-market FTTH-local loop
  - **Ex-post regulation of rates** for access to FTTH-local loop and co-location
- **Accounting separation**: newly imposed as consequence of ex-post rate regulation
Growing Importance of Cable Infrastructure

Market share in attracting new customers

- Competition from cable forces incumbents to invest in FTTH, FTTB in densely populated areas

Willingness to Pay

Willingness to pay for additional bandwidth

- up to 5€ / month: 49.8%
- up to 10€ / month: 33.1%
- up to 20€ / month: 11.5%
- more than 20€ / month: 5.6%

Source: United Internet Media AG
Thank You for Your Attention!