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DR. CHRISTOPH LOOK

DAB+ Network Rollout

Learnings and best practices from Germany's 1st national network

About us

Media Broadcast is part of the freenet Group; as Germany's largest service provider for the broadcasting and media industry, it is your partner for digitalisation. The company plans, sets up and operates multimedia transmission platforms for TV and radio on the basis of modern station, cable and satellite networks.



We are Germany's leading service provider for the broadcasting industry

- More than **300 DVB-T2 HD sites** for freenet TV
- More than **150 DAB+ sites** (national multiplex, regional multiplexes)
- Own **fibre network** with more than **10.000 km** in Germany
- Nationwide **field force** of ~ **300 employees** operating from 70 locations
- **365/24/7 service** with own NOC to monitor customer services



We launched freenet TV in 2017 – the most advanced terrestrial tv platform; >1m RGU in about a year



40 + 40IP

Broad # of TV stations,
Apps, fixed + mobile devices

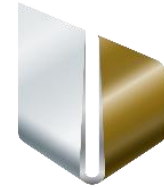
1080P Full HD

Best picture quality
in Germany



Population coverage
(public + private)
TV stations

75%



german
brand
award
18
gold



INITIAL MULTIMEDIA AWARD
2019
SILBER

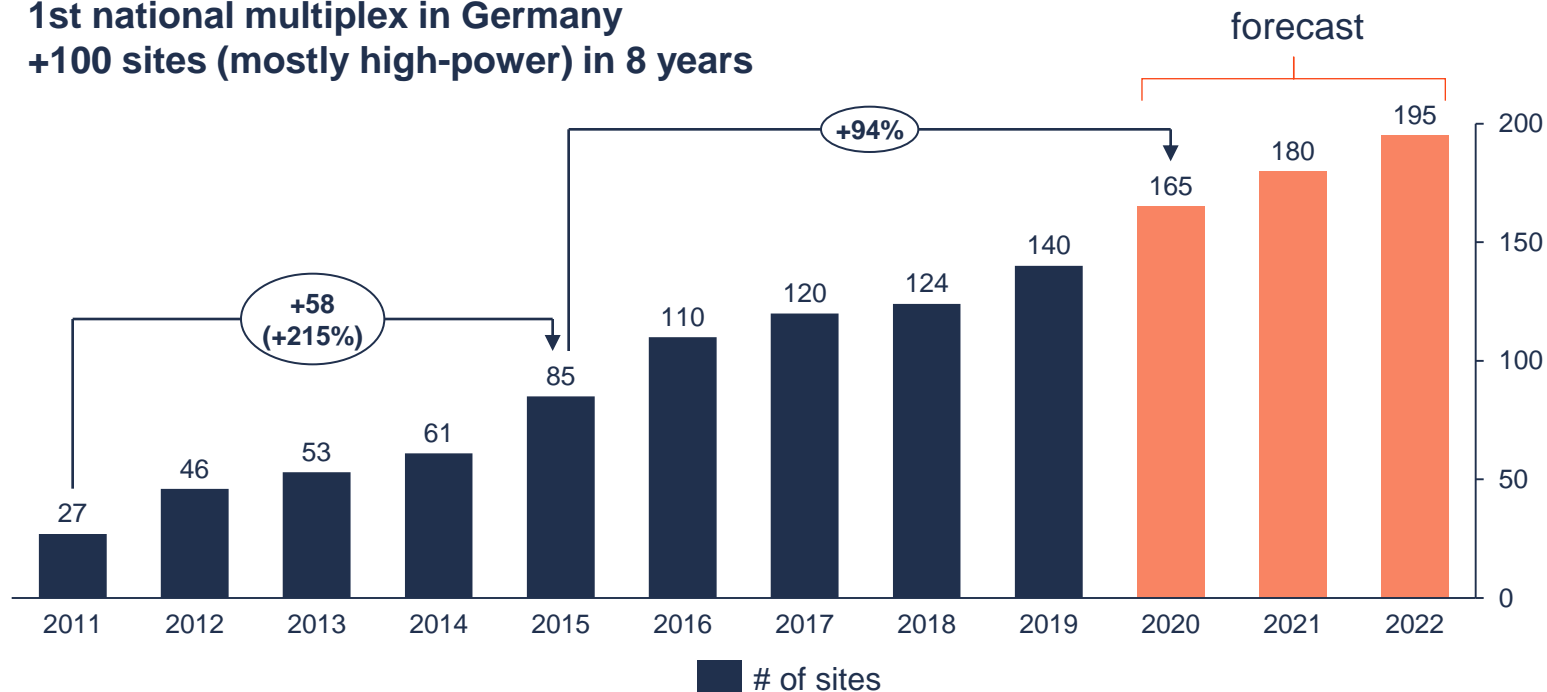


reddot award 2018
winner

Supported brand
awareness of 75% and
award winning UX- /
platform design

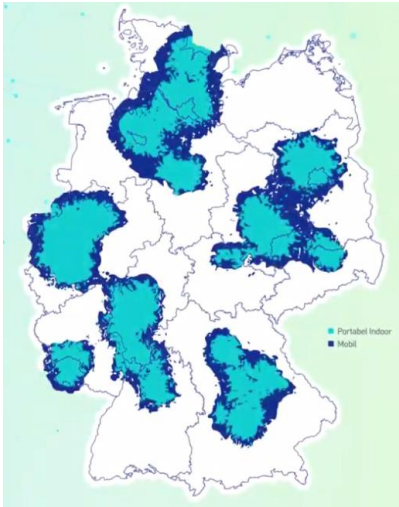
We are responsible for the design, setup and operation of one of the largest DAB+ networks worldwide

1st national multiplex in Germany
+100 sites (mostly high-power) in 8 years

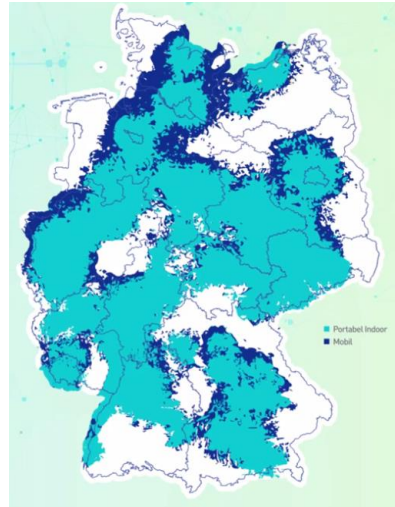


Today, the first national multiplex covers up to 85 % of Germany (indoor coverage) - close to 100% for mobile coverage

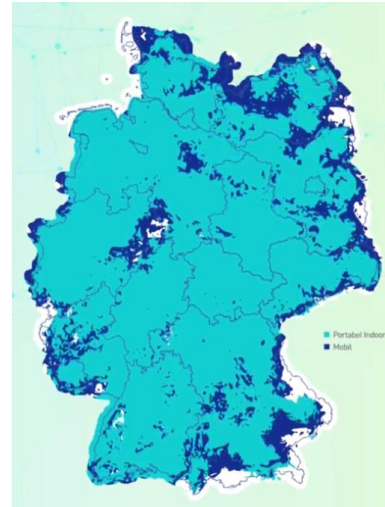
2011 - 45%



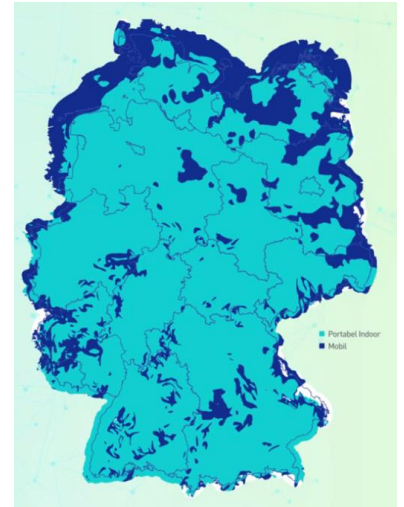
2015 - 72%



2017 - 80%



2019 - 85%



indoor coverage; mobile coverage

Looking back at more than 10 years with DAB+, we are happy to share a number of key learnings



Network
rollout



Customer
experience



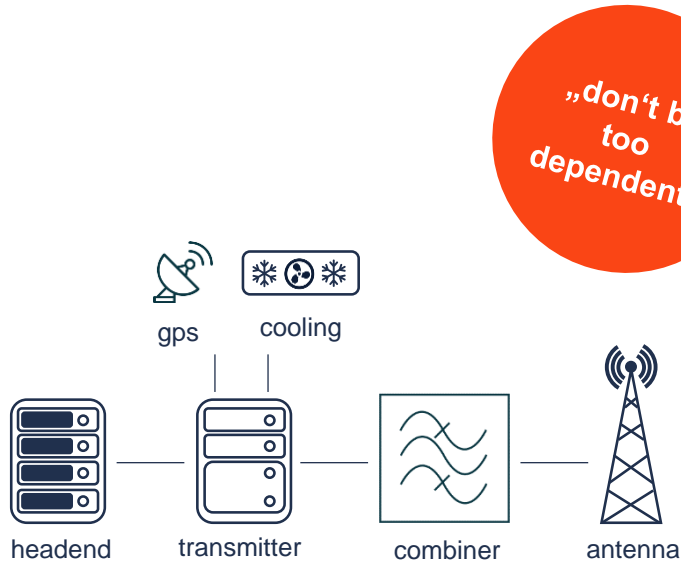
Frequency
management

„Keep it simple, stupid“ – we enforced one standardized technical infrastructure design for all our sites



- faster site infrastructure planning
- faster rollout execution
- easier maintenance work
- simpler and faster repairs

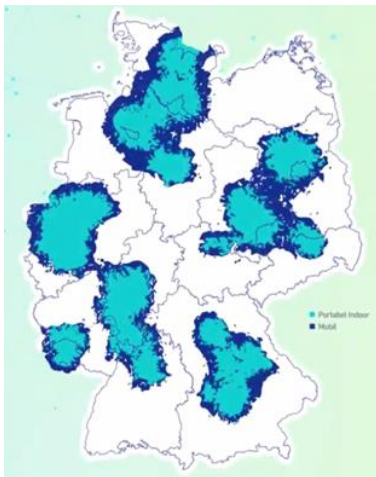
A single vendor strategy saves money, simplifies spare parts management and facilitates maintenance and repair tasks



- less internal functionality testing (single vendor / multiple vendors)
- less complex spare part management
- substantial economies of scale for hardware sourcing



„Start with a visible coverage“ and a strong backing from key customers – especially in early rollout phases



2011 – (re)start of DAB+ in Germany

- 27 Sites
- Population coverage
 - 58% indoor
 - 73% mobile cover

DAB+ Pionier Deutschlandradio



Deutschlandradio beginnt mit dem Ausstieg aus dem UKW-Zeitalter

Der Deutschlandfunk macht auf Helgoland und in Mittenwald Schritt hin zu DAB+ und weg von UKW.

Von dpa

„start of FM switch-off“





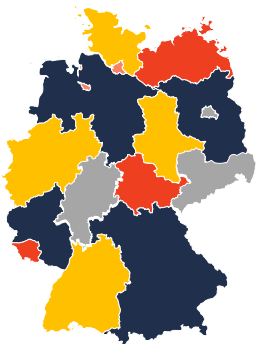
DAB+ additional services are nice to have – the implementation in „real live“ needs improvement / enforcement



- „enforce“ use of value added services by radio stations
- ensure consistent „audio quality“
- focus on consumers' key-priority: perfect coverage
- make reasonably priced receivers with high reception quality available
- involve the automotive industry (in-car reception!)



Germany's first national multiplex was planned as one single SFN from the start (channel 5C)

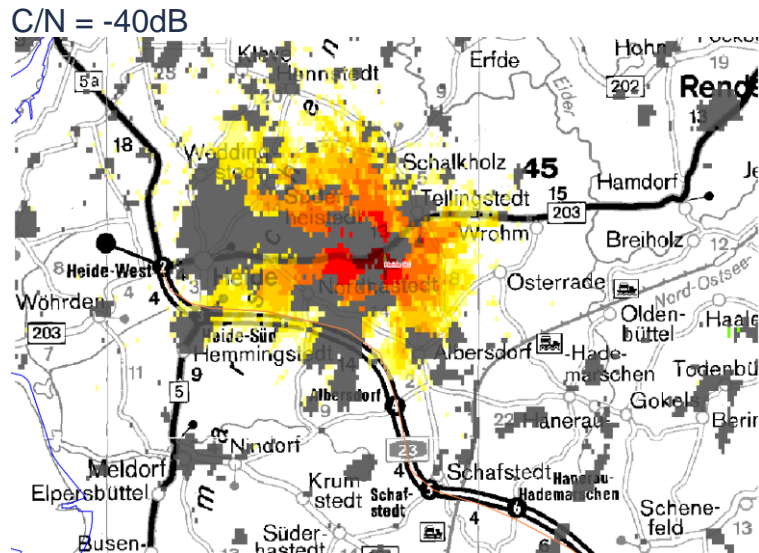


Illustrative sketch

- decision to use VHF band for DAB+ only – national re-planning and with neighboring countries
- true differentiation from FM – 16 nationwide radio stations; limited competitor to local radio stations
- receiver performance needs to be taken into account (planning parameters, incl. developments)



Moving to the second multiplex, we foresee critical „neighbouring channel“ interference issues – joint approach needed



Illustrative sketch: effects of neighbouring channel interference (two sites; two adjacent channels)

- address the topic proactively
- find joint solution among site operators for commercial terms
- design „easy to install“ low-cost solution

Thank you very much for your attention – I am happy to answer questions



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