



## “Flexible and Complete Digital Radio for Europe”

DRM European Workshop  
In conjunction with the DRM General Assembly  
6th - 7th April 2016 - Erlangen, Germany



### DRM+

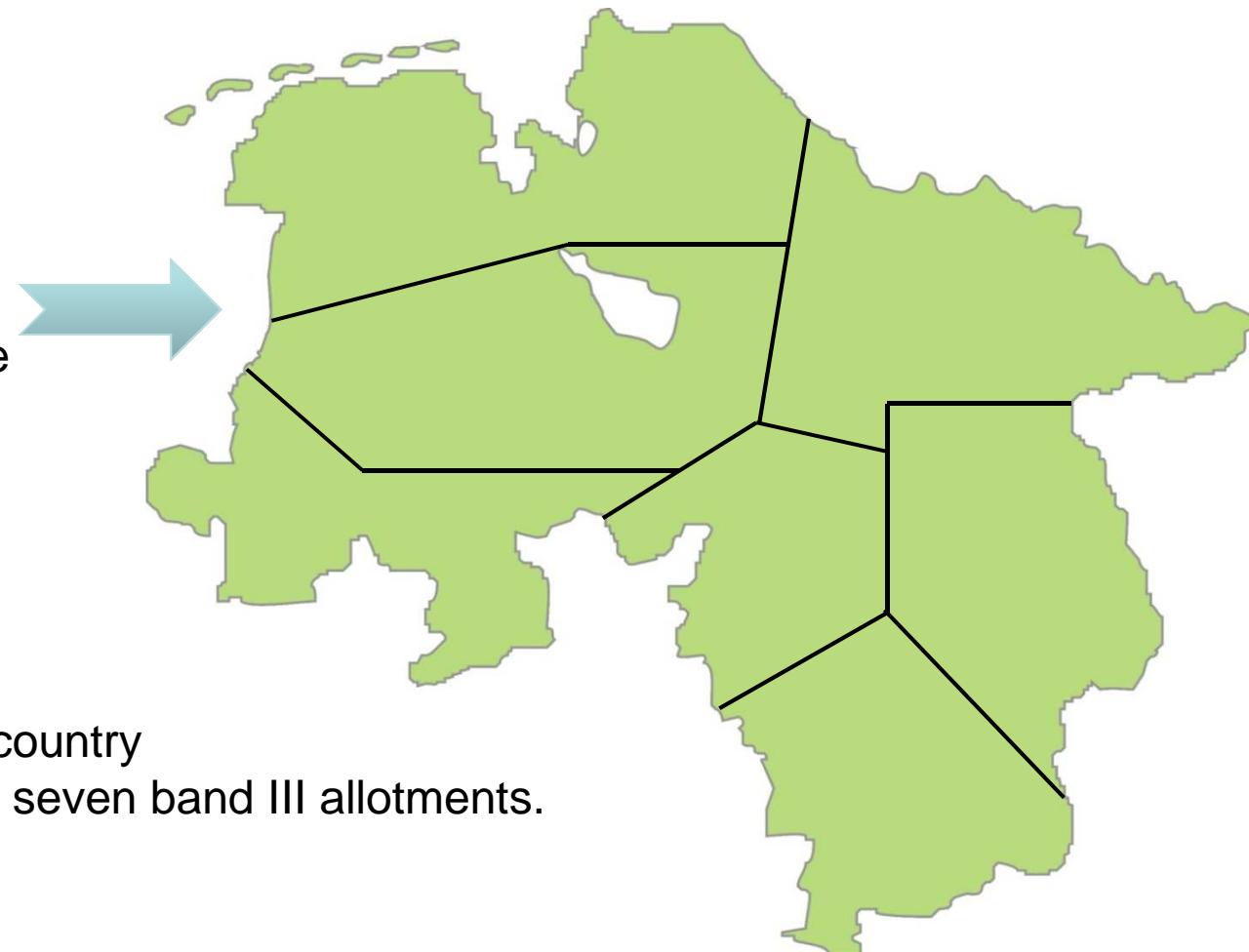
The most suitable digital system for local  
and regional sound broadcasters

**Detlef Pagel - RFmondial Hanover**

# Local radio via DRM+ in band III



Band III  
allotments  
in accordance  
to Geneva 06



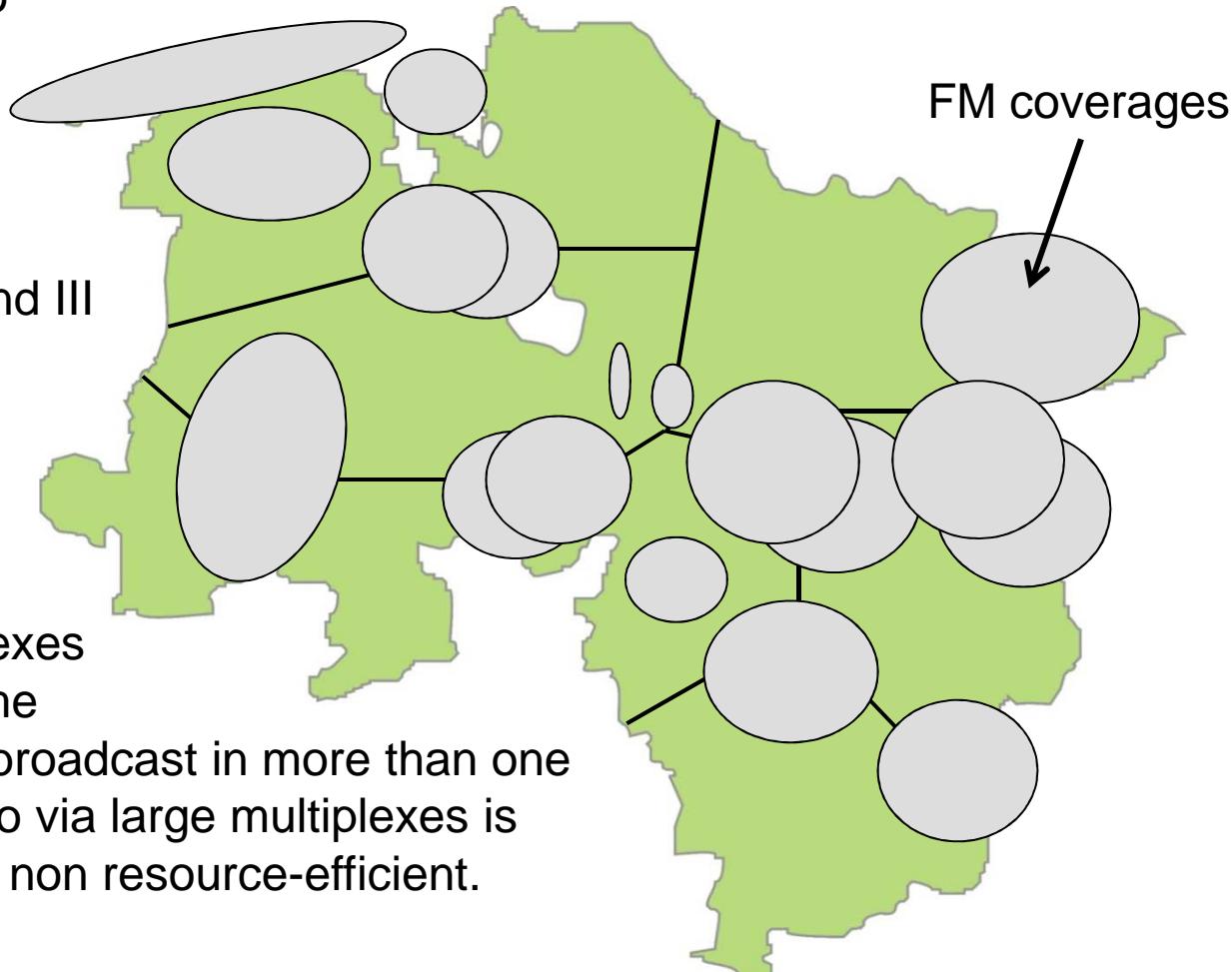
# Local radio stations



Today 18 local radio stations are in operation on FM frequencies.

But the shape of band III allotments and the coverage of local stations are not equal.

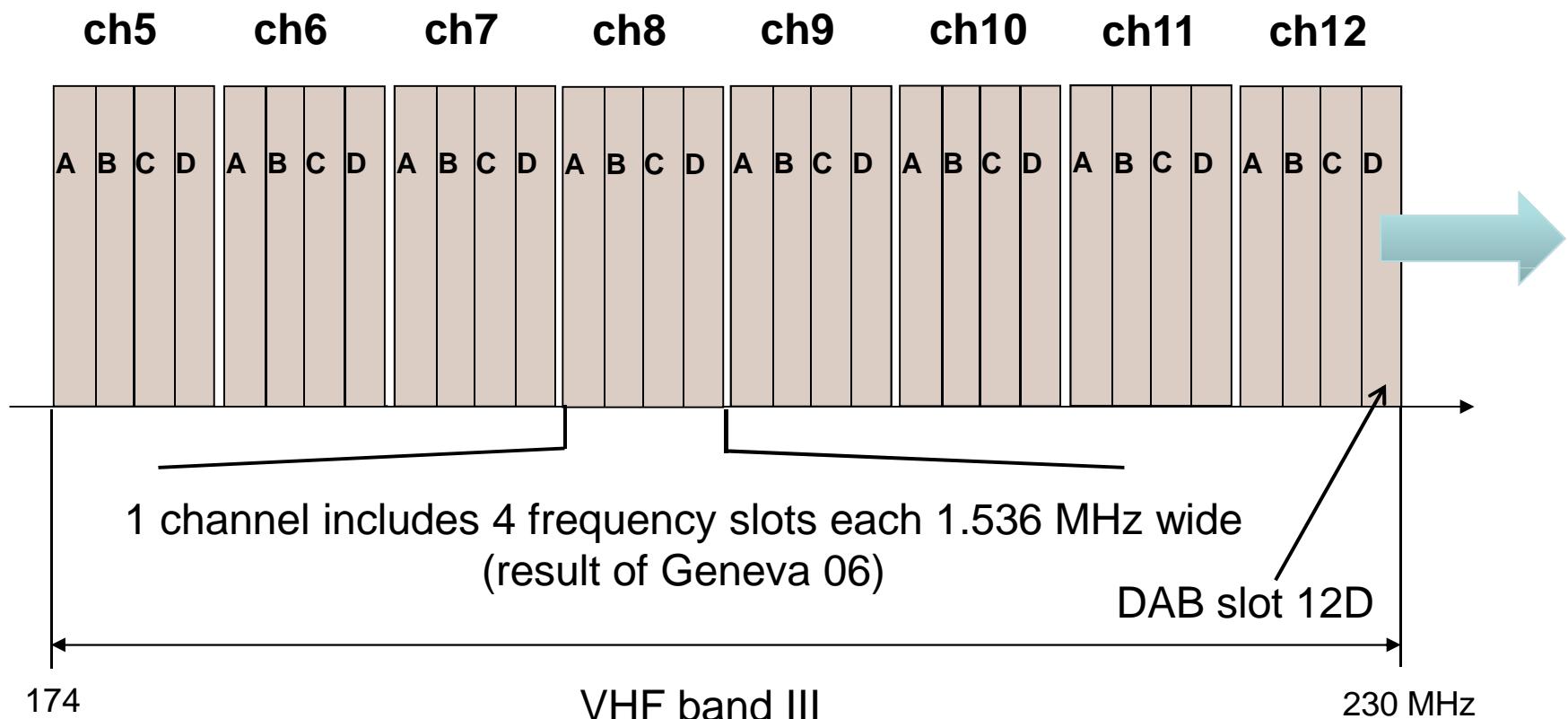
Large digital multiplexes cannot be filled, some radio stations must broadcast in more than one multiplex. Local radio via large multiplexes is uneconomically and non resource-efficient.



# VHF band III raster (ch5 to ch12)



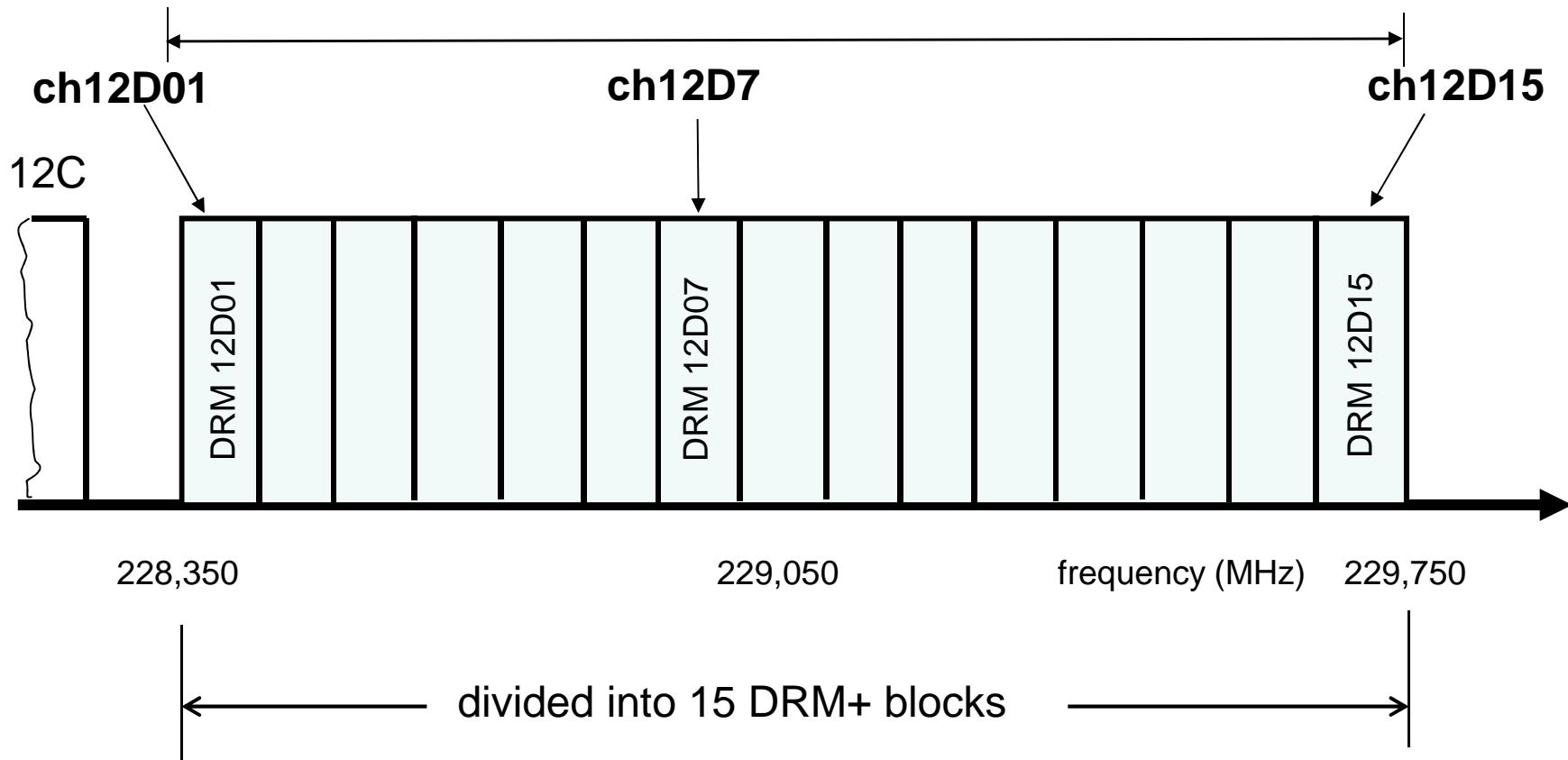
VHF band III is divided into 8 channels each 7 MHz wide



# One band III block replaced with 15 DRM+ blocks



For example:  
**DAB block ch12D**



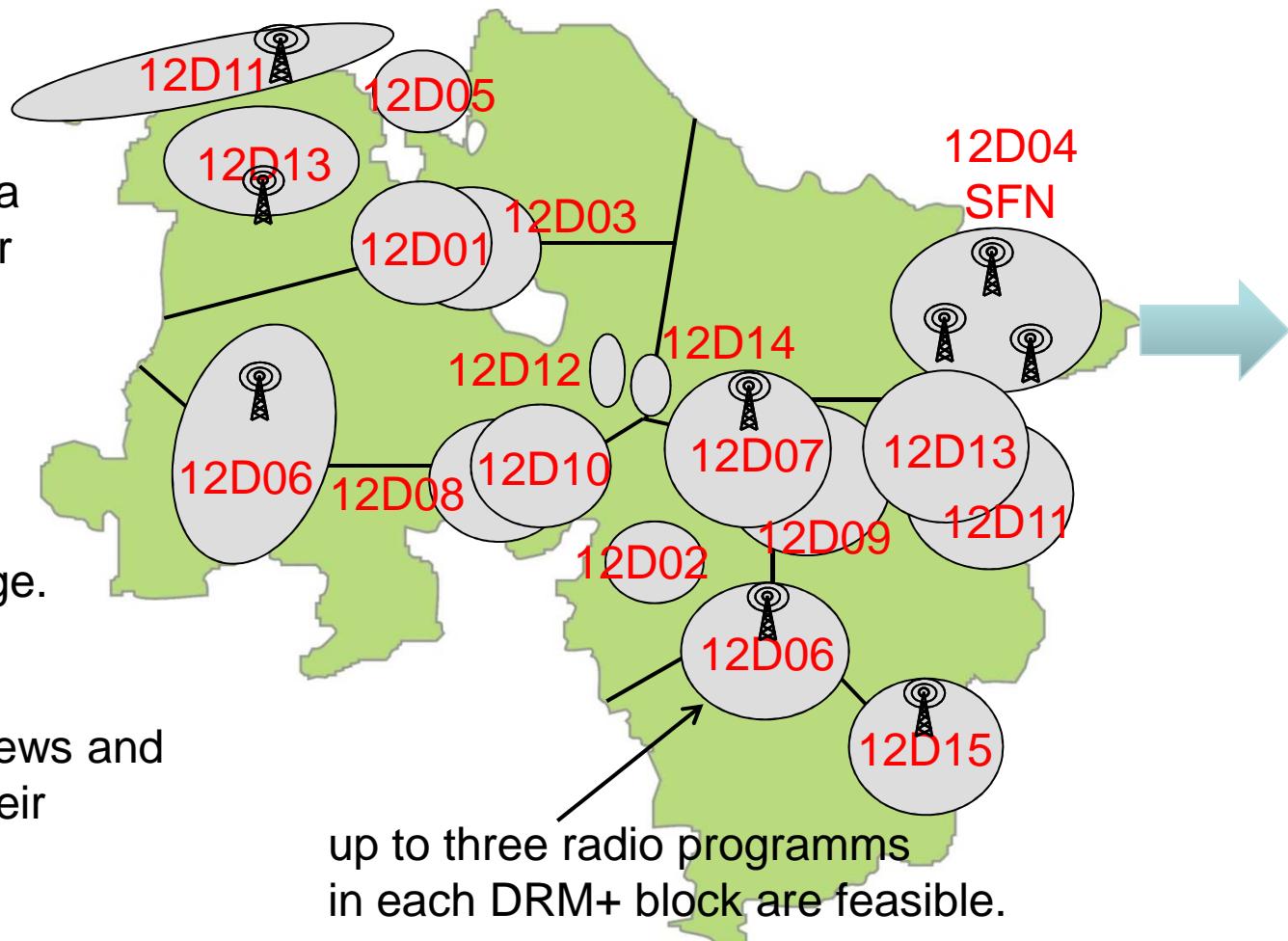
# Local radio stations broadcast via DRM+



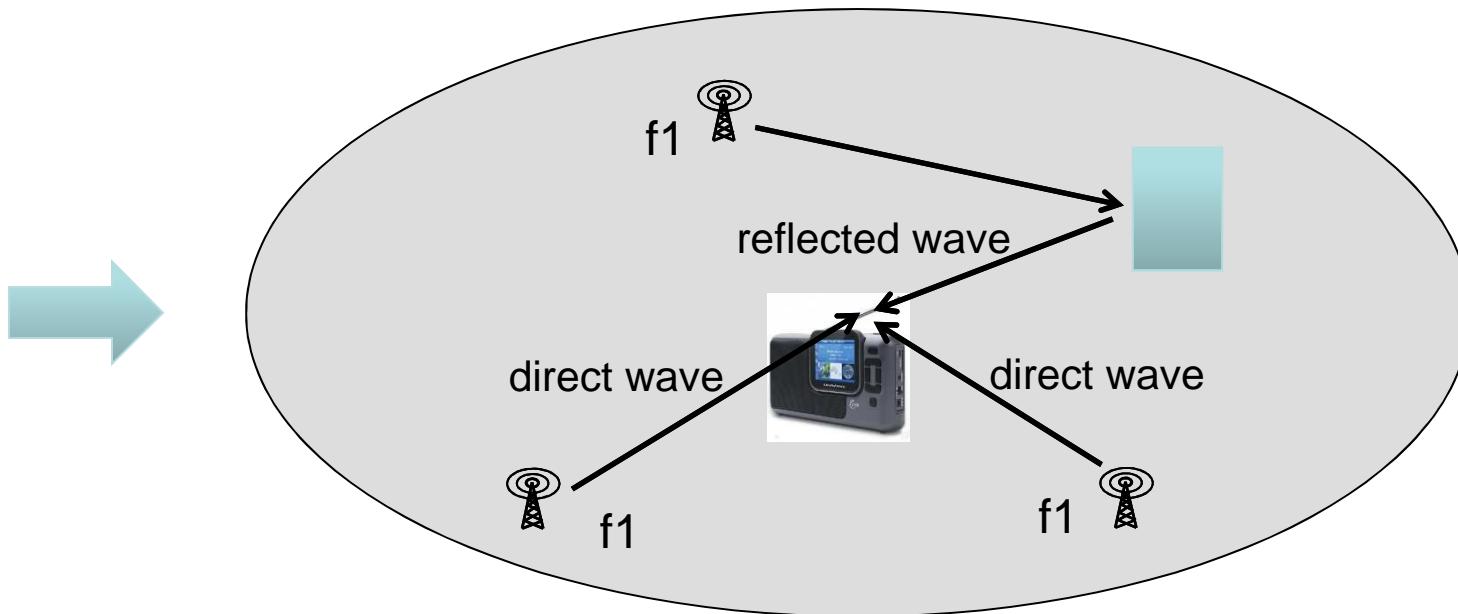
DRM+ in band III offers the possibility for each broadcaster to have his own coverage area independently of other broadcasters.

They can realize their own strategies and design of coverage.

Local radio stations can broadcast local news and advertising only for their own region.



# Single frequency network (SFN)

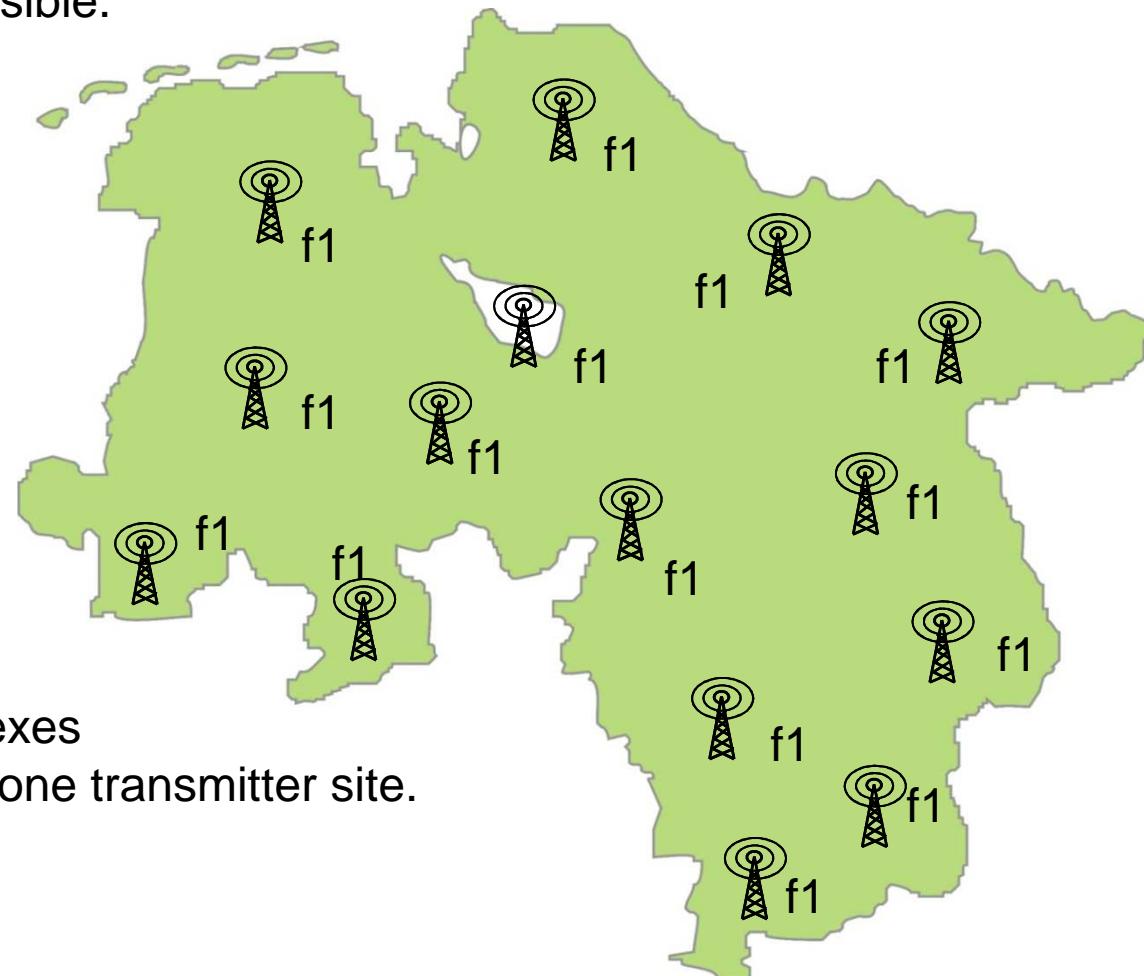


- All transmitters in the covered area works on the same frequency.
- Better reception of the signal in multi-path environment.
- At the point of reception the direct and reflected waves sums to a higher signal (max. 3 dB – SFN gain).

# National services via DRM+ in SFN



By using single frequency networks national services are also feasible.



One or more multiplexes can be emitted from one transmitter site.

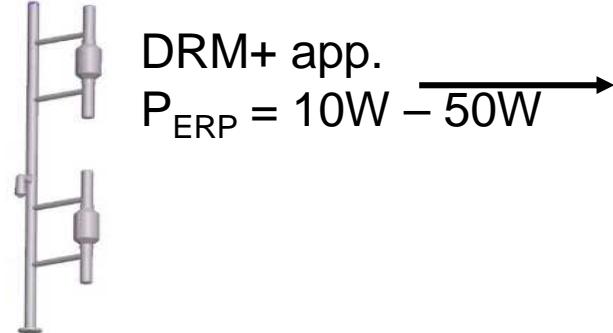
# DRM+ Transmitter-sites (1)



Stand alone  
transmitter-sites.

Aerial mounted on the  
rooftop of the Radiostation.

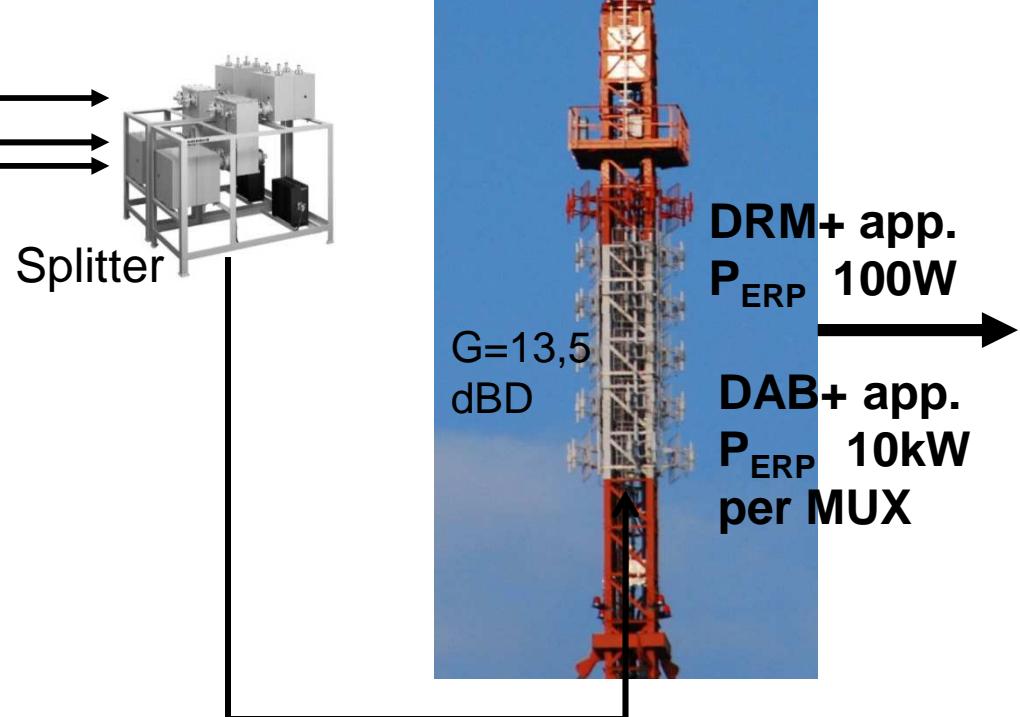
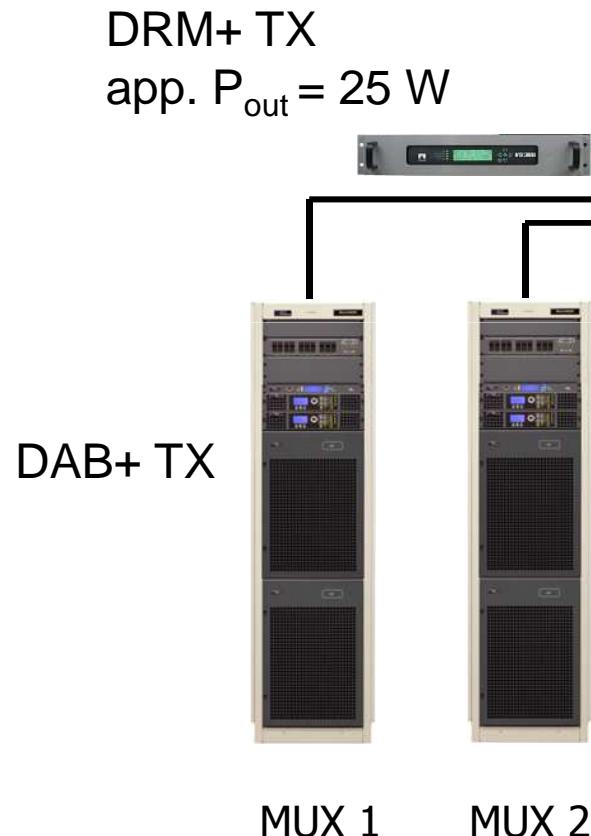
DRM+ Transmitter  
 $P_{out} = 5-25 \text{ W}$



## DRM+ Transmitter-sites (2)



Co-using of band III transmitting aerials



# Conclusions / Benefits

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No need for large multiplexes, so the broadcaster remain in full control of infrastructure.

Broadcasters can design their own strategies and coverage modes and can broadcast local news and advertising only in their own region.

DRM+ and DAB+ can both coexist parallel in band III.

- Only one band III block allows local radio over DRM+
- The other useable band III blocks allows state or nationwide radio transmissions over DAB+.

So DRM is the most suitable digital system for local and regional sound broadcasters.

## Thank you for your attention



**RFmondial**

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