5G & Broadcasting

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Rai CAN BROADCAST NETWORKS MAKE MOBILE TV MORE EFFECTIVE?

Broadcast networks (HPHT) with sites 50-60 km apart, may cover:

- rural & suburban areas,
- Urban areas near to transmitters (10-15 km)

ADVANTAGES:

Much less transmitting sites compared to mobile network (LPLT) infrastructures to cover the same area (70-225 factor)

BUT

LPLT are needed to ensure coverage of remaining urban areas or indoor





COOPERATION SCENARIOS

TOWER OVERLAY: LPLT networks complement **area coverage** of the **BNO network** in urban areas more distant from **HPHT towers**

- Cooperation at network level: 1 single broadcast signal – transparent for the user
- Agreements on network between BNO/MNO

SERVICE OVERLAY: MNO network

complements broadcast services with additional **Unicast/Multicast services** :

- Possible coverage extension Gradual introduction of the broadcast profile on MNO network
- Agreements between Service providers and MNO for usage of the monthly data plan





ETWOR



WHICH FREQUENCIES FOR 5G-BROADCAST?

- **700 MHz** band: after June 2022
 - SDL band (Supplementary Down Link) not assigned (channel raster 5/10 MHz)

Ch.54 Ch.55 Ch.56 ex- canali TV 742-748-753-718-728 728. 738 758-103 368-7.73 788 733 773 778 748 758 763 Banda Banda Uplink Gap Downlink guardia guardia 5 2011/0652 20 Millin (15 blocelah da. 5 Millio) DD billis (6 bloacht do 5 billis) 3.MEbz 9 Mills MORE (fino a 4 blocchi da 5 MHz)

- "Sub700" band: can be considered for refarming?
 - Reserved to DTT broadcast until to 2030
 - Technological neutrality principle
 - 8 MHz channel raster desirable (at present not available in 5G standard) to avoid complexity in coexistence with DTT services





WHICH TERMINALS?

- Today terminals supporting **5G broadcast** are not commercially available (waiting for real services and relevant business model?)
- There are however many trials ongoing:
 - Europe: Germany (5GToday, 5GMedia2Go), UK (BBC, 5G Rural First), Austria (ORF/ORS), Italy (RAI)
 - Rest of the world: China (ABS, CBN, **ZTE**, **Huawei**), Brazil (Grupo Globo)



can this be a good sign??



USE CASES FOR BROADCAST-TO-MOBILE

- TV with dedicated schedule: 8-10 services (per UHF channel):
 - HIGH AUDIENCE contents
 - To be seen LIVE, anywhere on any device and condition
 - Broadcast is efficient when many users are getting involved
 - Sport events, concerts, prime TV, news
 - **PUSH** services
 - SW updates (car), VoD contents, ...

- **PUBLIC UTILITY Services**

- School Video-lessons, support to distance learning
- Meteo/traffic updates, emergency warning





NUMERO MONOGRAFICO DEDICATO AL 5G



Rai CRITS

http://www.crit.rai.it/eletel/2019-1/191.pdf

Thank you for your attention!

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