

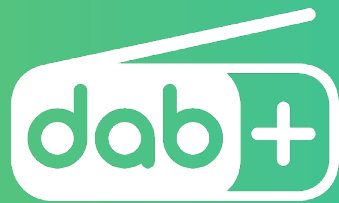


The importance of traffic and travel information via DAB

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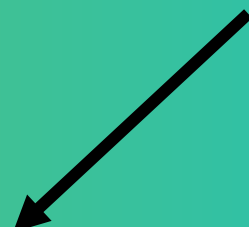
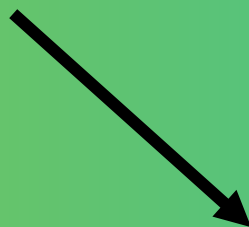
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Born from a partnership between **RTL 102.5** and **Autostrade per l'italia**, from the ASPI multimedia center in Rome.

LIVE h24 | 365

Traffic update each 2 songs

DLS & SLS with traffic information



The TPEG service is active on the Eurodab Italia ensemble, in partnership with InfoBlu.

Through TPEG on DAB+, it is possible to obtain "dynamic programming" of routes, allowing those travelling to receive all the necessary information in real time and possibly avoid traffic by receiving directions for the fastest route along with a precise estimate of the arrival time.



To date, the Infoblu service is available on enabled GARMIN navigators.



Tunnel coverage In Italy

Hanns Wolter

DAB Italia scpa

World DAB Automotive 2019, Turin





- 1st national DAB network operator → consortium of radio stations
- DAB+ since 2007
- Over 100 active sites...and counting!
- Broadcasting 18 stations, 8 national simulcast service, 7 new stations and 3 test channels
- National SFN!

Territory

- Italy has a very complex landscape
 - We have...
 - Very large flat areas surrounded by high mountains
 - Lots and lots of hilly terrain
 - Lots of real mountains and deep valleys
- ▲ — 2 really big islands: Sardinia and Sicily
- ▲ — Lots of smaller islands too...
- ▲ — High mountains next to the sea
- ▲ — An endless coastline
- ▲ — Lots of warm water supporting great propagation effects
- ▲ — Many many neighbors!



Highways in Italy



- Over 6500 Kms of highways in Italy – most of them already covered by DAB+
- On the 3020 Kms managed by ASPI there are 634 tunnels (422 Kms!), of which 254 with a length of over 500 meters
- In Liguria only, there are 150 highway tunnels
- ...this makes the coverage of tunnels a priority for security reasons and for preserving the excellent user experience DAB+ gives

Tunnel coverage for national operators

- First tests have been done by Rai and ASPI both in Emilia Romagna and in the Aosta Valley
- They have been functional for the evaluation of 2 different technical approaches
 - Transmitters at the beginning and the end of the tunnels
 - Leaking cable in the whole tunnel
- Results for both tests have been positive and a more comprehensive and realistic test will start during the summer with all 3 national operators on air in the Monte Mario tunnel for the BO-FI highway.

General experiences made during the tests

- Polarisation
 - H propagates better inside tunnels than V
- Curves, number of lanes and materials used for the interior coating influence significantly the propagation
- Also, traffic does influence the propagation
 - The presence of heavy traffic reduces the signal propagation by nearly 30%
- Each antenna covers about 700 meters of tunnel using approximately 10W of tx power output
- TXs need to be in sync with the external DAB network!

Test setup for 2019



- 2 multiband DAB transmitters, one at each end of the tunnel, able to deliver three adjacent DAB blocks
 - compact formfactor, which is necessary for the installation in the shelters outside the tunnel
- Satellite reception at both ends of the tunnel
- Antenna system inside the tunnels using Logarithmic antennas
- Remote control via ip

Future steps

- Start the trial ASAP (thanks also to the CRIT)
- Extend the trial to longer tunnels, like the “Galleria di Base”, which is 8700 meters long
- Develop a cost efficient set up which can be replicated nationwide
- Extend tunnel coverage to local multiplexes
- Test break-in systems
- Get funding....

Thank you very much!

We are happy to answer your questions