



Government Radio Consultation

Norway

Dear Sirs,

January 9<sup>th</sup> 2015

Following the request for feedback to your consultation

<http://www.regjeringen.no/nb/dep/kud/dok/hoeringer/hoeringsdok/2014/Horing---Rammevilkar-for-lokalradio-i-forbindelse-med-digitaliseringen-av-radiomediet/Horingsbrev.html?id=773929>

the DRM Consortium, an international not for profit organization whose aim is to promote the only digital audio broadcasting sound system for all bands above and below 30 MHz, would like to address a few of your questions and submit the following viewpoints.

**What kind of local radio stations should continue on the FM band after national switch off in 2017/2019?**

If Norway is embracing digital audio broadcasting by maintaining some stations on FM and migrating others to digital this will inevitably create first-class and second-class stations with a clear advantage given to the bigger, richer stations.

A holistic solution for the whole industry, even with different transition speeds for different kinds and levels of stations, is preferable. At the end of the day the objective is to offer an equal experience to all listeners, irrespective of where they live. This is not about stations big or small but about the listening experience and equal access to information education and entertainment.

**How can we digitalize the local radio sector?**

The obvious way is to go for a DAB+/DRM+ solution. One key advantage of the DRM+ platform is that it occupies much less bandwidth (100 kHz which offers the possibility of carrying up to 4 programmes, while now you can only carry one FM programme. In other words DRM+ is four times more spectrum efficient than FM). DRM+ and can be accommodated in any empty part of the VHF spectrum.

The EBU recommendation 138, which sets out to provide guidance on the successful planning of digital radio, makes the point that DAB and DRM share many commonalities: they are openly specified, complementary, digital radio standards that meet the needs of European radio broadcasters. There are many commonalities in the design of DRM and DAB which lead to an equal consumer experience: in short, selection by name, clean audio, text messages, SlideShow, EPG, emergency warning feature etc. The commonalities between DRM and DAB have led technology providers to develop multi-standard chips for powering the next generation of receivers, and the SDR concept already allows the NOXON-DAB USB stick (price 30 euros) to be upgraded with software that allows it to decode DRM+ and DAB, DAB+.

Though there might be the perception that DAB+ will eventually deal with all situations and all stations wherever they are in Norway, one key issue that does not seem to be addressed is

**DIGITAL** radio mondiale

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whether there is sufficient spectrum available to accommodate all the smaller radio stations through DAB multiplexes. These are sometimes completely unnecessary and wasteful in smaller places where there are only a handful of stations, if that. DAB multiplexes always require 1.5 MHz of spectrum, regardless of the number of services carried. Whilst some smaller radio stations may be able to join together onto a single multiplex, many will not be able to do so. Therefore, the number of multiplexes to accommodate may be quite high. There is also the question of receiver selectivity: in some areas the main national and local multiplexes will interfere down the local multiplexes, whilst in areas in the immediate vicinity of the small scale multiplex, the reverse can be true, making holes in the coverage of larger stations.

DRM+, with its spectrum occupancy of only 96 kHz (100 is used for simplicity), is likely to be more easily accommodated, and where smaller radio stations can join together, the mini-multiplex of up to four services can be utilised. It is also the case that a narrower bandwidth signal is more energy efficient.

The effectiveness of DRM+ and its compatibility with FM broadcasting in the same frequency band, have been confirmed in the DRM+ test transmissions carried out in Edinburgh by the BBC in 2011. In this trial, DRM+ coverage exceeded FM coverage using only 10% of the radiated power and providing two audio channels. Similar results have been obtained in other European countries (i.e. Italy, the Vatican, France, Norway, Germany, and Slovakia currently on air). The success of these trials led to the inclusion of DRM+ into the ITU-R Rec. BS.1114.

We therefore feel that an important part of judging the success of facilitating the move of smaller stations to digital radio is the question of available spectrum. Assuming the successful switchover of large stations, considerable band II spectrum will be released: this spectrum cannot be used by DAB, but DRM+ would provide a very cost effective and consumer compatible experience for smaller stations that wished to digitise. This would really lead to a workable and lasting solution for digitising smaller stations in Norway which would be leading the way in Europe.

#### **What kind of framework should be valid for the stations that can continue on the FM band?**

DRM+ is a perfect standard for digitising FM services, keeping broadcasters in full control of their transmission infrastructure and being perfectly optimised for the broadcaster's individual coverage needs. DRM's advanced features revolutionise the radio experience for listeners, allowing broadcasters to develop new revenue streams and to intensify listener engagement. DRM+ for individual stations in the FM band is a complementary or lower-cost alternative solution to DAB(+) multiplex networks, including full service linking. Receiver and chipset manufacturers are ready with combined multi-standard receiver solutions. A DRM+/DAB+ receiver should currently be only very fractionally more expensive than a DAB+ receiver. Its beauty would be that it would allow a true and fair digitisation of radio in Norway.

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