



AUTOMOTIVE WORKSHOP VI

Please find a summary of the 7th Automotive Workshop below.

If you would like more detail on any of the subjects covered, you can find the full minutes from page 4 onwards.

On 14th October 2020, over 80 people from the radio and automotive industries globally had a frank and open conversation about the progression of radio, and particularly hybrid radio, in cars.

Real-time metadata

Briefly introduced by Frank Nowack from Ford, he highlighted the importance of providing the right metadata in the correct way, not just so the right information is displayed, but also for less interaction time with the driver.

There is a specific user layout for DL+ in the ETSI standard but many broadcasters send DL+ tags that differ from those suggested and many radios have different levels of displays. Manufacturers have created a few work-arounds to make sure something is displayed, but it is better if broadcasters send their data with DL+ tags. There needs to be better co-ordination as one of the frustrations from the broadcaster's side is some of the information doesn't always fit into the tags, the example of classical music was given when an artist isn't as important as a composer.

Further discussion needs to happen in order to decide on which tags are the most used and the most useful. There is frustration on both sides, as broadcasters and manufacturers feel there isn't enough implementation of DL+ on both sides.

Slideshow

An informative and useful discussion on Slideshow concluded that at this time there is a lack of guidance on what is a 'good' slide. Slides which are too busy with too much text or small graphics could be considered a driver distraction. This could lead to the removal of the Slideshow function as a whole in the car.

It was discussed that broadcasters need to understand the value of the slide they are providing; how clear the slide is, how big the display screen is etc. The resolution and suggested slide sizes for Slideshow should also be reviewed and updated.

As mentioned by Frank from Ford, there needs to be a clearly written and communicated refresh rate for slides. Presently, there is an industry recognised refresh rate, a rate that has been agreed is safe for drivers. However this needs to also be clarified and written into a document on good slideshow practice.

It is hugely important that Slideshow is not seen as a driver distraction and the industry must work towards making it as safe as possible for the driver whilst at the same time educating broadcasters further, otherwise legislation could be brought in which may not suit the broadcasters.

It was agreed that work would be carried out on both DL+ tags and clearer guidance on Slideshow for release before the next Workshop.

Static metadata:

Update from Nick Piggott that RadioDNS has launched the Radio Metadata Terms of Use and added geofencing to SPI which better defines where drivers should and should not be using services. This helps if a station is only available in a certain area (ie sports rights).

Simon Tuff introduced the topic by explaining the signaling added to part-time services and how this benefits the broadcaster and makes for a better in-car experience if supported by the manufacturer.

It was agreed that knowing how many vehicles signaling and geofencing was implemented in would be valuable. Also, before the next workshop we need more information on geofencing in an area where there is patchy over-air reception, and what the expectation might be for IP.

Analytics

Background from Ben Poor that the RadioDNS Technical Group was tasked by the RadioDNS Steering Board to look at analytics using hybrid radio and how some of the standards could be useful to broadcasters to get insight. This in turn could be used to shape content for broadcasters or drive investment back into radio.

The main discussion by the Technical Group involved making the insights valuable enough whilst still maintaining the listeners privacy, plus it needs to be realistic and easily implementable.

It was decided to clearly define the minimum analytics and standardise how it is discovered and transported to the broadcaster. After much thought and discussion around handling the information including how and when to transport it and what metrics should be measured, the RadioDNS Technical Group decided the best way forward was a 'fire and forget' analytics ping. There will be further discussion on, amongst other things, how we authenticate the source and information.

There was discussion within the Workshop on data privacy and restriction laws in different countries, increasing the cost of the radios as well as the issue of pre-roll.

Soft linking

Nick Piggott introduced soft linking, he said that this is about making the experience of listening 'right' for the driver and should provide a way for listeners to continue listening to the station. Hybrid radio offers drivers the choice of either continuing with the same service being provided over IP, or switching to service that the broadcaster says is similar and continuing with broadcast.

The specification for soft linking was changed in 2015 and most cars are not supporting it. Nick said *"We haven't given any guidance re expectation and we've learnt if we don't get the details right, implementations will either not be done, or incorrect"*.

The Workshop participants discussed what is making implementing soft linking confusing for manufacturers. One point made was that manufacturers do not like this feature enabled explicitly as this could mean more interruptions for the listener, however there is no guidance on how to indicate this to the user.

Questions discussed included: Would there be some reassurance on this if the broadcasters were better regulated? Is this a problem because customers don't understand it? It was agreed that if there was a better description of this functionality for drivers it would remove some of the anxieties about how well it is going to be used and how it is going to be configured.

More work will be done in this area to move this topic forward and help resolve some of the issues discussed.

Android Automotive

Nick Piggott updated the Workshop on the subject of Android Automotive. Presently there isn't a 'one radio app' for Android Automotive, and radio isn't being given any prominence on the Android Automotive platform, instead each manufacturer has to implement its own app. We know if two groups currently looking at creating a solution for manufacturers and broadcasters to use.

It was discussed that this is causing concern for many due to the fragmented approach. We were told that one of the groups creating an app for radio on Android Automotive will be in a situation to demo it imminently.

If you would like to add anything to the discussion or would like anything to be discussed in the next Automotive Workshop which will take place in February 2021, please email feedback@radiodns.org

Please find a more detailed summary of the workshop on the following pages.



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Please find a more in-depth summary of the Automotive Workshop discussions below.

Laurence thanked everyone for joining this session!

Rosie introduced the Metadata animation -
<https://www.youtube.com/watch?v=f7BqIC2NGLU&feature=youtu.be>

Laurence ran through the agenda and the speakers –

Real-time Metadata

Nick started off by saying, real time metadata includes the provision of information to drivers as what they are listening to right now - text. The more advanced and comprehensive approach is visuals. This session will also look at what the expectation from VMs is and what is the actuality that is sent from the broadcaster. And touch on legibility problems in Slideshow and where there needs to be clarity here for all involved.

Frank Nowack took the first topic and spoke about DL vs. DL+. He said, it's important to have metadata but also to present it in a good way. If you are a driver you don't have the time to read a lot of text. If you have a lot of content you need something which is easy to understand. Frank showed the screen, which is seen in a Ford Fiesta and Focus, this is the lowest level display in the Focus – Slideshow is also available on this model. Frank said this is the smallest size screen they use. Frank is happy that the size of text and layout, he displayed in the [presentation here](#) is easy for the driver to read without driver distraction.

Hanns Wolter asked who supports DL+. Frank said it depends on the country, Germany is supporting this but UK is not. Christian Winter said Audi uses DL+ for artist title but many markets and big markets don't use this functionality and the text in many cases can be very long. Audi also uses DL+ for phone numbers and locations – the customer can then link and call the radio station for example. DL+ has specific tags and layouts for this function, Audi however has a different layout

than Ford for example no weather, this is because no one is using it. The handbook for Audi however covers the whole of Europe so they won't put anything in this that isn't available across markets.

Frank said that the usage is limited mainly to artist title, playing next and news. He said that if you don't send DL+, plain text is shown (as it is shown on the second slide of his presentation) as plain text they only use tags if there are tags from the broadcaster.

He said it is possible for radio stations to update text messages quickly, they can change between just text stream and DL+ stream, which will change the display. He confirmed this was done well by several stations during for example News plain text was used and then DL+ was used for other information. No additional data is needed and it's simple to do.

Nick asked if this is seen by the vehicle manufacturers as an essential service for broadcasters to implement for drivers. Rudiger said he thought was a good service to have but and, this was pointed out by Frank, there has to be thought about driver restrictions, broadcasters need to be careful with long text and a 'no go' is scrolling text which is a prolonged disturbance of the driver. Rudiger said that within Harman 100% of vehicle manufacturers are using DL+, some units can switch from standard radio text to DL+ if it is on-air and available. They prefer DL+ due to driver restrictions.

Lindsay Cornell said he has been discussing DL+ and how it works outside of Germany. Switzerland and Norway are currently doing trials using this; one thing is that there are only a few tags implemented and so for example in the Classical case: Composer tags need to be used, the info is therefore not appearing.

There also needs to be better coordination of which tags should be used. There seems to be in some cases where vehicles have a hierarchy of tags to substitute on the display. Broadcasters, he noted, are trying different options and when it doesn't work they stop using DL+. It was agreed that there needs to be more work on deciding common tags.

Nick asked would it be helpful to look at what tags are implemented across vehicles. Lindsay said broadcasters also need a better understanding of the constraints of what vehicle manufacturers and drivers can see. Which tags do you see as valuable and if they want more which are useful and how can this be done? Artist and title are the base plus others which are valuable?

Mathias sees from the point of view of a Mux operator that programme originators don't often understand what the DAB standard offers are. It would be really helpful to have a summary of what else they could do on the DAB standard.

Nick said also there is no support for DL+ in the UK and that this is because some of the equipment doesn't support DL+.

Walter said DL+ has just gone live on Pluxbox, but there was a lot of difficulty with this. Now they see very few cars which can receive DL+. Nick explained that in a previous piece of work carried out by WorldDAB in the area of logos to break the chicken and egg situation the WorldDAB UX Group has started to measure how many cars on the road have logo capabilities and it may be interesting to see something similar for DL+.

Laurence Harrison asked what was the user experience for DL+, is this a by default function that is switched on? Frank said that this is a default on, if the user chooses radio text. Rudiger said it depends on the vehicle manufacturer, some have it on by default, others have an on/off button, there is also an option of having standard text and also DL+. The driver really has to have an interest in the text to turn it on midstream however and again this goes to driver distraction.

Slideshow

There have been some specific concerns about stations producing slideshow content. What do broadcasters need to understand about how to get images right in the vehicle? Nick framed the situation; broadcasters haven't used this as much as would be liked as they don't feel the vehicle manufacturers are supporting this.

It was noted that slides sizes and images are not always the best. Nick said 320x240 is the current industry standard for Slides. Christian Winter said the problem with this is not just the resolution, but also the value of what is on the slideshow. Some stations only show a logo in a carousel, which is pretty bad. Audi would like to see higher value slides with more information and useful information. Nick asked how easy is it for drivers to find the content? Christian said they can switch between static images and the cover art, it depends on what the driver selects – often they select cover art as SLS isn't on in all areas.

Frank said he has a 4inch screens which shows Slideshow, sometimes stations use this as a PPT with small character sizes, it makes more sense to have two slides than one in this case. He also confirmed that some stations only have 2 -3 slides for a whole day.

Frank said the distraction and how often the slide changes are the main issue, currently three slides per minute is the agreed and best case. There are right now no restrictions in Europe on the frequency of slides being sent, this is good news and the industry has been self-monitoring this so that it isn't a driver distraction, Rudiger gave the example however, if this changed there could be a restrictions like Korea and in the USA.

Nick summarised by saying that we don't have enough information, we need to do research on DLS and DL+; what tags, is it switched-on by default, what are the best resolutions, text size, screen size etc. Vehicles who don't support DL+ and Muxes which don't support this.

Static Metadata

Nick introduced the four topics to be covered in this section. He explained that Geo-fencing was added to the specification, indicating where drivers should and shouldn't be using services. For example sports rights issues or a stream is not available in this area because there is a good broadcast signal.

Radio device metadata terms of use can be found [here](#) and is important to have this written down. If a broadcaster is putting out their logo the broadcaster has the right to come and ask you to stop and penalties will be levied.

Simon Tuff, introduced further use of Service Component Information. He said this allows the advertisement of new services before they go on-air and also pop up services.

He said the Use Cases for this are that; not only can they be advertised before they go on air, they can also be removed when they are no longer relevant and can be removed from the service list and also redirect listeners to other services. It's useful to better manage services for a better user experience. It's useful now as broadcasters are not investing in new capacity but the broadcast side is heavily used and is a great shop window – the capacity the broadcasters have they really want use. It also allows broadcasters to give exposure to broadcast platforms, and from a regulatory side of things this is helpful due to the light touch for part time services in terms of regulation. This kind of technology allows the BBC to do this.

He confirmed from a technical perspective this is done through the FIG 0/20. The standards were shown in the presentation [here](#) ETSI 103 176. The BBC said they are clearer about the business needs and makes for a better in car user experience.

Nick said all things add value to the broadcasters but this must be matched by the vehicle manufacturers. There needs to be confirmation that this is implemented in the Mux and in the receivers. Simon said that the BBC could implement this next year but this is not confirmed is there an element of should this be added to the Tick Mark? Knowing how vehicle manufacturers support Georestrictions?

Kirk asked was the interest in geofencing to exclude service following and what are the possible implications in areas of spotty reception also what are the expectation would be in these areas?

David Layer confirmed on the chat that US broadcasters are very interested in working with manufacturers to get geofencing implemented.

Ben Poor also said on the chat, - 'Would it also be worth taking a survey of: a) which encoding platforms support some of this new functionality, b) which broadcasters would want to implement this in their services?'

Nick said that this is another question that needs to go into the survey. Laurence said we should return to Kirk's question at a future Workshop.

Analytics

Ben Poor, EBU, presented this section and said that RadioDNS was tasked by their SB to look into the topic of analytics and how this could be used by broadcasters. Originally they thought they could use the Http server logs however it was decided that these were not as useful or as simple as it was first thought.

David Layer suggested on the chat [this article](#) on radio analytics in Inside Radio.

The motivations have been the guide to this work. There were some questions posed; What metrics should be measured? Who is responsible for handling the data? Broadcasters, service providers and or collection agencies. How and when to transport activity? Discovery is included here so "Fire and Forget" an acceptable consequence. How to create a 'unique identifier' but without identifiable data and connection to user accounts and how to authenticate the source of the information so verifying the thing that has been recorded.

Ben suggested some possible scenarios for information gathering for example Switching, User behavior, Switch bearers, On-demand content, User has a login and consent for the information can be used across devices. Ben said that this is Open Standard for discovery and transport of analytics for Hybrid. Ben also said important to create a Proof of concept for real-life situations.

Nick said if we can show the value of supporting broadcast this is helpful for broadcasters, this also has a net effect value for vehicle manufacturers as it will encourage investment from broadcasters in getting better quality information into the car. This addresses some of the problems previously spoken about in terms of support from the broadcast industry.

David Layer said he was just going to chime in to say he's really happy that this is being worked on, US broadcasters are interesting in analytics and is the biggest important factor to get them interested in connected cars.

Christian said that GDPR is a very delicate topic which is something that really needs to be discussed. What is possible and what is over the top in terms of analytics. How much detail do we need and can be supplied, Nick confirmed is something that will be taken into consideration during this work. Laurence said that from the Radioplayer side he is interested in if there are any 'red lines' which

shouldn't be crossed or is this a brand by brand basis? Individual listening sessions are of interest; also the hierarchy of the base line analytics, for example choosing to understand what is of interest.

Caroline said that they get enquires about issues with switching between systems and the annoying pre-roll, it would be useful to have a capping of the pre-roll a reference would be great and broadcasters want any information they can get.

Nick referenced the support added by Google and Apple for Covid exposure tracking, and how that framework handles IDs in a way that is in line with privacy. Can broadcasters learn from this, do we need to know who a specific listener is or do we just need a sufficient identity to look at someone's sessions in a day or consistently over a period of time. Is this something that is better for the OEMs that could sit comfortably with them? Nichols Pujol said it's very difficult to implement in the vehicle manufacturer system as there is no clear view of who wants what.

Rudiger said he has some doubts about analytics, radio is a simple one way solution currently without any identification of the driver. If we start now looking at what is the driver really doing, the simple radio goes into data critical status and this runs into specific laws in the country and in the EU.

How can you protect the data in the radio, for example garages could have access to this data. It's never quite as simple as things seem, the station list in the radio cannot be used but the history of the driver can if we start looking at analytics and so like Google we would need to have an acceptance policy of collecting the data and also what about rental cars and how do you delete data from a rental car. The car industry wants to save money not add more security software and this increases the cost of the radio receiver which is not acceptable.

Frank said data protection becomes more complicated if you cross borders and suddenly the vehicle manufacturer has to handle this and they do not want to.

Beatrice Lethiellux said on the chat that it depends if you are collecting anonymised data then agreement is not necessary for each connexion.

Dave Walters asked if we know what persistent identifier a connected radio maintains... presumably the IP address will be dynamic via the SIM card, but probably has a mac-address? So when we serve streams/enhanced metadata, can we (or should we) trade that data for the Mac-address?

Nick summarized this discussion and Laurence said that this is an on-going question that needs to be policy tech and security collide, this could be a separate session.

Kirk Nesbitt added some information for reference on the chat - Here is an article re addressable advertising initiative for

TV;<https://www.tvtechnology.com/news/project-oar-created-to-establish-addressable-ad-standard>

Soft Linking

Nick Piggott gave an update on soft linking. He said that one of the problems with this is that there is no detail on how to do this right. Nick gave a visual example; there are a lot of IDs for the NDR region. The question to the group was; What is making soft linking confusing?

Rudiger said soft linking was a surprise and the behavior of car radios turned this into a nightmare. The specification for soft linking changed in 2015 but most of the cars in the field support this feature 70-80% do not support, it is independent of the car or brand.

Matthias Braendli said on the chat “Yes, I also understood that soft linking should offer suggestions for alternate programmes, but never automatically switch. That's different from how it was initially understood/defined”.

Rudiger said for soft linking there needs to be time to replace the car park of old cars for this to work properly.

Furhad Jidda said on the chat – “It seems like some OEM's does not want this feature because users would be confused why they are listening to audio that is different. Also there is no uniform guidance on how to indicate this on UX”.

He elaborated on the call that either there needs to be an implicit indication or have a pop up so the user decides. This is something the OEMs don't like, as users don't understand what has happened and a pop up is an additional interruption with no guidance on how to indicate this on the UX. There are no guidelines on how to tell the user what happens. People don't relate soft linking with regional radio differences, a DAB user might get confused.

Nick noted there is a perception that this is something different to RDS codes which are widely used. Nick asked if regulation would help solve this issue? Frank said that Ford does do this and he said there is one setting for the customer for FM/DAB – the customer knows it is switching for local news etc, however he is getting more complaints from regions with hard links and several of the regional links, the driver is asking why they are getting all of the services in some places and 50/50 in other places. For example, NDR is mixing hard links and soft linking which is confusing the customers. Nick said broadcasters are tempted because hard linking is used everywhere.

Christian Winter said on the chat, ‘the problem is that everyone understands something else. you have a) A station with 95% of the time the same b) a station

which is half of the time regional and c) a different station from the same radio network’.

Christian said that in the discussion of seamless linking in the past, if someone turns this on they make the decision to listen to a specific station not to another station in soft linking. People don’t understand this - neither customers nor technical people. There is now only one switch for soft linking and also on the selection menu this needs to be easy.

Furhad said having things disabled and enabled in the menus, the language is very complicated. It’s a question of making this available for the users.

Nick also said that this is part of the automotive work and we need to come up with a better description of functionality for users. It was agreed that there needs to be better clarity in the area of Service Following / Linking from both sides.

Android Automotive

Radio API is very basic, each vehicle manufacturer has to build around the radio hardware so around the route that protects apps, Android Automotive can’t offer access to radio. There are two groups looking at this issue – EBU, Radioplayer, iHeartMedia, NPR, DR, SR, CRA and then Xperi, NAB PILOT and US Broadcasters.

Ben Poor, EBU said there is a collaboration to look at broadcast radio. He felt this is like going back to the early days of mobile. Therefore it is imperative to do something here and there is a grave danger that if the right things aren’t done then broadcast radio will not be a prominent part of Android Automotive. First they are doing a feasibility study. There is the OMRI project so there are some templates on how to control radio using JAVA. There is a large concern from the EBU of what needs to be done and how this is done. There needs to be a single voice from the global radio industry.

Joe D’Angelo said that the NAB PILOT work is a transition of work that has been going on for eight months. What they have decided to do is bring this effort into the NAB programme, supported by 11 broadcasters from around the world. More details and demos will be available as early as next week for the WorldDAB GA with Google and a 29th for the IBC. More information will be released at these events.

Xavier Filliol said they already have a solution for hybrid working with Panasonic and would like to be added to this document as they have been working in this complicated area.

The Workshop came to an end after this discussion however it was confirmed that the next Workshop will be planned for February 2021. The work suggested in this

Workshop will be carried out as a joint effort between the members of WorldDAB and RadioDNS.