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The French highway radio : a model for tomorrow's digital information and service radio? ¹

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Abstract:

I am going to tell you about a radio which is totally original in France, in Europe and, as far as I know, in the world. This radio is just celebrating its twentieth anniversary and it can still be considered as innovative. It is a unique high-tech and segment-specific radio, the uniqueness of which lies in every aspect of a radio project: legal, technical and program.

Keywords: highway radio; frequency; technology

I.

This paper is on the French drivers' radio, which now covers the whole French toll motorway network, that is to say almost 9000 km.

Its first specific character is the most apparent: it is broadcasting by means of isofrequency that is to say along distances which can be as long as needed on the same frequency. This was possible on AM with short waves (intercontinental), or medium or long waves (which can cover a country like Portugal or half of France), but with a quality of sound that we consider to-day as fairly bad. On the contrary, the classical FM techniques do not allow to broadcast at a distance longer than more or less 100 kilometres, even when using powerful stations. To go on broadcasting you have to change the frequency, or accept an intermediate area which does not receive the program: either there is a hole between the two reception zones, or the two overlap and jumble up one another. The innovation which has been set up in France in the late eighties has allowed to synchronize successive broadcasting stations: this is made possible with stations very close one from another (every 7 to 8 kilometres), each one with a very low power, a strong directivity and synchronized with the following one. This technique does not allow to cover broad areas, but only linear ones: it is consequently perfectly adapted to cover roads and broadcast road information. This innovation played a determinant role in the decision of the French Regulation Authority to attribute and reserve one common frequency to highway radios all over the country. This was a legal innovation since in France, the Authority only allocates frequencies according to two different procedures :

- direct reservation and allocation to state owned radios,
- public regional tenders for the attribution of the rest of the spectrum to privately owned radios, according to different categories : commercial, non-profit, part of a region or nationwide network...).

¹ This presentation is based on Dargent (2011).

In this case, the Authority reserved a dedicated frequency for the whole country : 107.7 MHz, and organized a tender for every motorway or motorway section. At that time, RDS-AF technique was not yet fully developed, so that it was very important for safety reasons that the frequency would be the same all along the journey: drivers would not have to manipulate their receiver while driving.

A complementary innovation consists in localizing relevant information, by way of local decoupling, what was a world premiere. This is very convenient for drivers, who are not overwhelmed by useless information, which would surely discourage them from keeping listening.

These two innovations totally distinguish French highway radios from American highway advisory radios, which are broadcast locally on frequencies which are every time different and need to be announced by specific information road signs.

French highway radios make use of RDS-TA and EON-TA: this is a first generation digital technology, derived from the ARI system, which was set up in Germany in the seventies. Almost all radio receivers include this function nowadays. It allows to automatically interrupt a magnetic recording or a CD (or another radio channel in the case of RDS-EON-TA), to broadcast urgent traffic updates produced by a highway studio.

Traffic information is essential to the project: it is offered round the clock seven days a week by specialised journalists. An exceptional level of rigour is required to do this job for at least two reasons. One is that their role takes place in the road safety chain: not many journalists interfere in such a way in people safety. The other reason is that, although they speak from a remote studio, they address listeners who are on the field, precisely "where the action is". Again, this is not very often the case among the profession.

Radio studios are located close to highway companies traffic control centres. So that journalists continuously benefit from the rich database that highway operators keep collecting in order to face their own responsibilities of maintenance and emergency intervention (planned road works, preventive and curative operations to match bad weather effects or any other dangerous event on the route). We must keep in mind that the mission of highway operators is to guaranty safe and fast journeys as far as possible. Information sources include emergency phone calls (from a dedicated phone booth network addressing directly to control centres, or, more and more from mobile phones); reports from company patrols and road police; data from automatic sensors, pictures from video cameras; data and forecasts from weather stations: all these data get to the control centre monitors. Radio speakers continuously receive all those informations and keep in close and constant contact with the operating officers, who are experts and can estimate the duration of any event or action they initiate to reset the traffic.

The evidences given by telephone to the traffic control centres or directly to the studios by witnesses, are especially profitable when the victim cannot talk, when the place of the event is unreachable, or when the traffic is deviated on a route about which there is no available data.

Broadcasting real time information is the first reason to be of these radios, and programs are organized to make that possible at any time. This is the source of constraints, which have been overcome according to the methods used by the continuous information dedicated channels, the model of which is the American television channel CNN. Unlike the American and German models, the programs of French highway radios are not limited to traffic information: real time traffic information takes place in a full radio program, what constitutes the other important innovation of the model: a program globally designed to match the expectations of the audience: drivers and more generally speaking, people travelling on the motorway network.

Do you know that more than half the highway users in France only drive on highway once a year (for summer vacation), and they feel it as a hostile and stressful environment? Highway radios not only provide them with an information service designed to make their trip more secure (no delay, no accident) but also bring psychological comfort and safety: this is very important. The programs do feature content about safety and driving rules, explanations about the infrastructure and road equipments, automotive systems, availability of food

and catering services (including temporary shortage). It also offers experts' editorials and cultural and tourist programs in relation to driven-by regions; and driving-adapted music. Thus the program plays a role of informing, but also teaching and securing: in one word it coaches the drivers.

II.

I mentioned at the beginning of my presentation the important debt the French highway radios owed to recent technical developments, especially in the digital field. The fast pace of change in these technologies is affecting them directly and will do it further on in the next decade.

As I recalled, first RDS generation allowed to broadcast digital codes, which give instructions to receivers (AF: search the best available frequency for a definite program; TA: switch to the frequency currently broadcasting traffic information update).

A second generation of RDS opened the way to TMC (*traffic message channel*), which directly allows broadcasting the very traffic information messages. These messages have to be fairly simple and designed in a specific structure. They are received and translated by dedicated smart receivers, which can deliver them as graphics, or as text or audio messages, in the language chosen by the user. TMC information now comes more and more often with GPS guidance on new cars and receivers. Thus the language barrier has been overcome and a harmonized service of traffic information, although simplified but fairly homogeneous, has been extended in Europe through borders (as a matter of fact, I was myself in charge of the French part of the experiment in the nineties).

In the field of radio, when one mentions digital broadcasting, one usually forgets about the RDS technique and immediately thinks of digital terrestrial broadcasting. If it becomes effective, transferring Hertzian broadcasting mode from analogical to digital will allow carrying together highway radio programs and TMC-like messages, and even more multimedia data (like video sessions). However, one cannot be sure that digital terrestrial broadcasting will reach a commercial phase of development: for instance, in France, the project is currently facing a real opposition from field majors for reasons which are mainly economical, since transferring would mean creating new broadcasting infrastructures and more programs, financed by the same source of advertising.

Besides the Hertzian mode of broadcasting, there is of course the internet technique (IP, internet protocol).

As a complementary service to drivers, motorways companies and highway radio stations have developed websites that offer, among other types of data, real time traffic information such as coloured traffic maps, quantitative data, as well as additional data, such as webcam videos and updated traffic forecasts.

These websites were developed in order to help drivers to prepare their journey. And anyway I think that, whatever the technical evolution, the complementarity of the information which is useful to prepare the journey before departure, on the one hand, and mobile information needed during the journey, on the other, will remain typical of road information.

New bidirectional telecommunication channels are lately bringing an interesting way of pulling the data from the field. Thus *Google* announced in summer 2009 the launch in the US of the collection and compilation of vehicle speed and location data, through in-car mobile phones and GPS devices using *Google* maps, in order to continuously feed these maps with dynamic data. Such a principle of user community is rapidly developing. In France, for instance, one can mention the *Coyotte* network, which became famous by advertising police speed control devices, and is currently extending its user community to traffic information exchanges. I already mentioned how highway traffic control centres and studios rely on users for live updates: truck drivers frequently volunteer to become regular informers and give their personal mobile phone numbers to be reached by the studios when needed: a way of doing which probably comes from the CB tradition and is meeting the new community philosophy which is developing among young internet fans.

Nowadays, the capacity of telecommunication networks and of smartphones allows all mobile phone operators to deliver maps as well as qualitative and quantitative data through IP, but not (yet) live audio programs with acceptable levels of cost and quality. The information delivered is similar to enriched TMC messages or to some of the data you can get on websites. But it is clear that they are unable to do the job of professional journalists as far as safety and psychological coaching are concerned. Here is the deep difference between *delivering traffic data* and *offering a true and full driver oriented service program*.

On top of that, you have to keep in mind that every program designed for car drivers, whatever the technique and the theme (and not only programs dedicated to traffic information and safety), must absolutely think of safety first, and prefer voice and sound to text and graphics!

So that I believe that digital broadcasting modes should not cause the replacement of French highway radio programs with data bank, but on the contrary will enrich programs with complementary data. These radio programs will master the transfer to digital mode, be it through digital terrestrial broadcasting in an intermediary phase, or directly through IP.

As a conclusion, I would like to go further and ask the question: cannot this experiment even be considered as a model for tomorrow's service radios in Europe?

References

Dargent, Charles (2011). *Un ovni dans le paf: la radio autoroutière 107.7*. Lormont: Editions Le Bord de l'Eau.