

Att. Hal Worrall

European ETC state of the art

### Part A : European ETC before the Directive

#### 1 – Standardization Level : CEN

CEN has worked for ten years to reach a DSRC standard for ETC. Strong difficulties ; an agreement was reached in January 2003, since this time in the voting process. The standard should be voted in June. This standard has two specificities :

- It covers two apparently non-interoperable techniques, one used in southern Europe, the other one in Norway. Nobody knows, actually, if they are really non interoperable ; it is a question of power and range of the beacons and antennas, quite too complicated to be understood by non engineers.

- It allows what is called a “deviation”, which covers the Italian DSRC. This deviation is clearly non interoperable with others DSRC ; as you may understand, it is a “political deviation”, which has nothing to do with technique or interoperability.

Anyway, the CEN standard, if voted, will clear the situation in Europe : even if there are some problems between Norway and the rest of Europe (except Italy), it seems that the standard will be working. The only problem, and it's a big problem, is that standard excludes, *de facto*, Italy, since a “deviation” remains ... deviant.

#### 2 – Historical toll-operators : state of the art

**France** : 13 operators have implemented since December 2000 a common ETC, based on the future CEN standard. It is called Liber-t. 800.000 transponders sold in two years ; 3 Million transactions per year. Investment over 100 Million €.

**Italy** : The whole of the operators have implemented for 10 years a “proprietary” DSRC system, based on the transponders and beacons developed by Autostrade. It is called Telepass. More than 2 Million transponders in use since 1993. This technique is, unfortunately, non compliant with the CEN standard.

**Spain** : The spanish operators are very much involved in a common project, aiming, like the french operators five years ago, to reach interoperability between each other, on the basis of the CEN standard. There is a project of DSRC interoperability between the spanish operators and the french ones, called PISTA, subsidized by the European Commission.

**Portugal** : The portugieses operators are developing at present time a renovation of their ETC collection, based on the DSRC CEN standards to be accepted.

### 3 – The new projects

There are, at present time, three new projects within Europe, very different from the previous ETC philosophies of the “historical” concessionaires. These three projects, one in operation in Switzerland, the two others in development in Germany and Austria, are based on the concept of trucks charging.

**Switzerland** : Trucks are charged for the distance traveled. The electronic device is connected to the odometer-tachymeter, which counts the kilometers driven ; it contains also a GPS device, and a DSRC link. These two links are only used for the enforcement of the system, knowing that all the charges are calculated by the OBU. The payment of the fees is done by sending the datas included in the OBU to the Ministry of Finances, through the mailing of electronic cards.

The philosophy, in Switzerland, is to charge for each kilometer driven in the country, whatever the road.

**Austria** : Trucks are charged on the motorway network. The system is DSRC based, without barriers. There are gantries over the roads (400) equipped with DSRC beacons ; the trucks are obliged, by the law, to be equipped with DSRC transponders.

This DSRC equipment is compliant with the CEN standards, and with the protocols defined in the European projects.

**Germany** : As in Austria, trucks are charged on the motorway network. The system is based on GPS for the location, and GSM for the data's transmission to back office. It needs a numeric cartography located in the OBU ; it needs also an enforcement by external means.

At present time, the german system seems to use infra-red DSRC for the enforcement, implemented on 300 gantries.

The German government required the suppliers to implement also a micro-wave DSRC link : nobody knows if it will be really implemented, at least in the first months of operation.

## Part B : The Directive on Interoperability

### 1 – An European legislation : why ?

The Commission has in mind, since three years, to reequilibrate the traffics between road and rail, and to force the freight to use the rail. A common meaning, in the European spheres, is that road freight traffic doesn't pay its external costs (noise, pollution, wear and tear, and whatsoever) ; so it is politically correct to say that trucks are to be charged on the whole of the European primary network.

Then, if trucks are to be charged everywhere in Europe, it is obvious that the means of charging are to be united within Europe. From this point, it is compulsory to get an European legislation defining the common means of tolling trucks.

The only thing is that, at present time, the political decision to charge trucks allover Europe is not already taken ; so the Directive on ETC interoperability is coming now without any political context, as if it were easier to decide on technical matters than on political ones. It is, actually ; but the operators can't admit such a procedure.

### 2 – An European legislation : how and when ?

The Commission has published a project, which is quite revolutionary. Let's look quickly in it :

- 2005 : The Commission wants all the operators to be able to accept and proceed the whole of the systems in use in Europe. It means that all operators must be able to handle with all the techniques developped in Europe – DSRC techniques (at least three of them), but also GPS-GSM/GPRS techniques.

- 2008 : The Commission wants all the new toll-operated sections to use only GPS-GSM (or Galileo-GSM/GPRS).

- 2012 : The Commission wants all the operators only dealing with Galileo-GSM/GPRS, forbidding all other techniques.

### 3 – This European legislation : why and why ?

A lot of people could be upset, looking at this project, and knowing that the Commission has subsidized for at least five years projects dealing with DSRC interoperability. Even if the standardization process didn't succeed easily, it is difficult to understand why there is a such dramatic change of trend. Obviously, the development of the project Galileo has to be taken in account ; it is an explanation, maybe the wisest.

The Commission seems to remove any mention of the standardization process : I am afraid to say that's it's the result of the very strong lobbying of Italian companies. We don't mind... but, nevertheless, this lobbying against the standard in order to keep the italian system certainly harms the concept of maintaining DSRC in the future in Europe. It is'nt reasonable to think that, in 2005, industrial companies will be able to provide a DSRC device compliant with CEN standard and with the Italian specifications.

Anyway, it is unacceptable to think that, because a huge project as Galileo is in process, European legislation has to oblige the operators to use the tools developped by this project, and to remove all others techniques.

### Part C : Is there a counter proposal ?

We think, within ASFA, that legislation has not to replace the usual market laws. In other terms, an European legislation which would try to replace the market regulations is a non-sense.

Interoperability is indeed a big deal. The operators are trying to show they are able to manage this interoperability, in a bilateral way, step after step. We think the Commission is totally right in trying to get this interoperability ; but we think the legislative way is not the best. Surely, the contractual way is better.

## Creating Practical Solutions Through Innovation

The satellite solution is, certainly, a good one ; it is not the only one, and the Commission is not in its job imposing this technique. We think, within ASFA, that the satellite solution has to be connected with other techniques, for several reasons developed below.