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Will the EETS be a Game Changer?

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Abstract

Despite many efforts by many stakeholders, the European Electronic Tolling Service (EETS) did not get off the ground at the time of introducing it in 2004. However, with the recent Directive (EU) 2019/520, more clarity on the interoperability of electronic road toll systems by means of the EETS has been provided. This paper presents an update of our 2016 study on the EETS, focussing on the new regulatory framework, the competitive environment and the market potential, to assess whether the EETS will now finally get off the ground and become a game changer in the world of ITS and tolling.

Keywords:

EETS, toll collection, market potential

Introduction

According to Directive 2004/52/EC, the European Electronic Toll Service (EETS) should have been offered at the latest from October 2012 onwards for heavy commercial vehicles and October 2014 for all other vehicle classes. Despite many efforts by many stakeholders, the EETS did not get off the ground at that time. In parallel to the evaluation and revision of the EETS legislation, Rapp Trans analysed in 2016 various legal, economic and technical issues related to the EETS [1]. With the recent Directive (EU) 2019/520, more clarity on the interoperability of electronic road toll systems by means of the EETS has been provided. Now it is time for an update of our study to assess whether the EETS will finally get off the ground and become a game changer in the world of ITS and tolling.

New regulatory framework

First EETS legislation

The European Electronic Toll Service (EETS) was first introduced in Directive 2004/52/EC. In short, a single contract with one EETS provider should allow EETS Users to pay their tolls in all EETS domains of the European road network by means of a single on-board equipment (OBE). The EETS should have been offered at the latest from October 2012 onwards for heavy commercial vehicles and October 2014 for all other vehicle classes. The definition of the EETS and the necessary technical specifications and contractual rules relating to EETS provision were set out in Decision 2009/750/EC.

Despite many efforts by many stakeholders, the EETS did not get off the ground for a long time. In 2015, the Commission launched a comprehensive ex-post evaluation to assess the implementation and effects of the EETS in all 28 Member States in the period 2004-2014 [2]. The results showed that the objectives of the existing legislation have been too narrow or too far-reaching at certain points, for example regarding the Europe-wide coverage of EETS domains within 24 months after registration, the business model (in particular remuneration) for EETS providers and incomplete/missing standards, especially for GNSS systems. It was clear that the EETS legislation needed to be revised in order to achieve the establishment of the EETS.

Revision of the EETS legislation

On 31 May 2017, the Commission adopted a proposal for a directive on the interoperability of electronic road toll systems and facilitating cross-border exchange of information on the failure to pay road fees in the Union. It was presented within the context of the Commission's first "Europe on the Move" package that seeks to modernise mobility and transport. The revision of the EETS was presented together with the revision of the directive on the charging of heavy goods vehicles for the use of certain infrastructures (the Eurovignette Directive). After comprehensive negotiations, the final act, Directive (EU) 2019/520 on the interoperability of electronic road toll systems and facilitating cross-border exchange of information on the failure to pay road fees in the Union, entered into force on 18 April 2019. It recasts and repeals Directive 2004/52/EC from 20 October 2021. Member States have until 19 October 2021 to apply the new measures in their national laws.

Based on the analysis of shortcomings identified in earlier legislation, the directive substantially amends Directive 2004/52/EC while adding new elements in order to make it more effective. By making electronic tolls easier to deploy and apply, it would facilitate the wider application of the "user pays" and "polluter pays" principles.

It is clearly stated, that the EETS is a market-based service and therefore EETS providers should not be obliged to provide their services across the Union. Instead, Member States shall take the measures necessary to ensure that EETS providers whom they have registered conclude EETS contracts covering all EETS domains on the territories of at least four Member States within 36 months following their registration (Article 5(1)).

Also, EETS providers are not compelled to supply EETS to all types of vehicles; they may choose to provide a service for heavy- or light-duty vehicles[1] only. EETS providers may until 31 December

[1] According to the Directive, a light-duty vehicle' is a vehicle having a maximum permissible mass not exceeding 3.5 tonnes. Although leaving some room for interpretation, it is our understanding that this includes passenger cars.

2027 provide users of light-duty vehicles with OBE suitable for use with 5,8 GHz microwave technology only, to be used in EETS domains which do not require satellite positioning or mobile communications technologies (Article 3(6)).

Regarding technological solutions, the OBE may use elements of other hardware and software, and communicate with other hardware systems present in the vehicle (e.g. satellite navigation systems, smartphones), provided that security, quality of service and privacy are ensured (Article 3(5)). Moreover, the OBE is allowed to facilitate services other than tolling, provided that the operation of such services does not interfere with the toll services in any EETS domain.

Remuneration of EETS providers is covered in a new, separate Article 7. Member States shall take the measures necessary to ensure that EETS providers are entitled to be remunerated by the toll charger (Article 7(1)). More details are given under “Market potential” in this paper.

On top of ensuring the interoperability of electronic road toll systems, the directive also aims to make the EU electronic road toll rules more effective by establishing a legal basis for the cross-border exchange of vehicle registration data for the purpose of toll enforcement.

Draft versions of delegated acts and implementing regulations have been prepared recently to be adopted by the Commission to further define obligations of the EETS providers and the EETS users, to lay down the requirements for interoperability constituents, the minimum content of the EETS domain statement and the details for the classification of vehicles, etc.

Competitive Environment

Tasks of an EETS provider

An EETS provider is an entity which, under a separate contract, grants access to EETS to an EETS user, transfers the tolls to the relevant toll charger, and which is registered by its Member State of establishment. The rights and obligations of an EETS provider are laid down in Directive (EU) 2019/520 (esp. Article 5) and its delegated acts and implementing regulations (esp. Article 2 of the Draft Commission Implementing Regulation on detailed obligations of European Electronic Toll Service providers, etc.). Table 1 summarises the main tasks of an EETS provider.

Overall, it can be stated that the tasks of an EETS provider are diverse and comprehensive. Except for a few actors, who can do all activities “in-house”, most actors are expected to bundle their competences in order to be able to carry out all tasks of an EETS provider, to realise synergy potentials and to achieve savings.

Table 1 – Main tasks of an EETS provider

Tasks of an EETS provider
• Legal and contractual issues o Preparation, implementation and maintenance of the status of an EETS Provider (registration conditions) o Negotiation with toll chargers and other relevant stakeholders, permanent contract management o Financing and bank guarantee
• Organisational processes and customer management o Customer Relationship Management, e.g. ▪ Management of customer accounts ▪ Helpdesk o Payment processing, e.g. ▪ Invoicing of EETS users* ▪ Clearing with fleet card issuers and payment means providers ▪ Clearing with toll chargers
• Technical processes and systems o Suitability for use testing o Comprehensive safety concept o OBE/user management (e.g. distribution and personalisation of OBE) o Toll collection/support for enforcement activities of toll chargers ▪ OBE, e.g. HMI and interfaces ▪ Central system, e.g. interfaces for toll context data, user lists, black lists, etc.

* In addition to the direct business model, where the EETS provider has direct contracts with the EETS user, there is the white-label (re-sell) business model [3]. Under this latter model, the EETS provider provides white-labelled services to a fleet service provider (e.g. fuel card issuer, OEM, etc.), who in turn has direct contracts with the EETS user. In Germany, under this model a contractual relationship between EETS provider and EETS user is still required, since this legal relationship is defined by the Directive.

Future tolling technologies

The competitive environment of the EETS is strongly influenced by the (revised) EETS legislation, but also by technological developments. Although CEN DSRC will be provisionally available, the general trend towards GNSS and smartphone technologies is emerging. Being recognised in the new EETS legislation, it is expected that tolling applications will increasingly be integrated into other existing devices (e.g. fleet management devices, tachographs, board computers). Overall, the market for special toll collection devices is increasingly moving towards “tolling as a service” with electronic tolling being one of the connected vehicle services (see Figure 1) [4].

Especially the value of movement data is high and brings new participants into the market, such as vehicle manufacturers. In the long term, it is to be expected that toll chargers will increasingly receive

the data relevant to the toll collection from the vehicle manufacturers, being the ones having first access to all vehicle-related and positioning data in view of connected and automated driving.

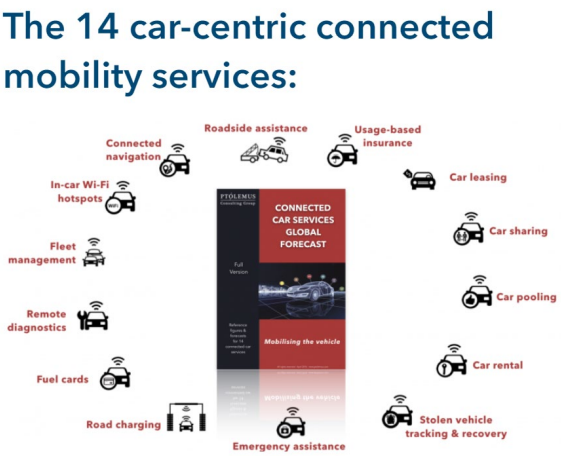

Figure 1 – Electronic tolling (road charging) as part of the connected vehicle [4]

Current and future EETS providers

There are currently nine registered EETS providers in Europe (see Table 2).

Table 2 – Registered EETS providers (Status: 28 November 2019)

EETS provider	Country	Since
Axxès	France	Dec 2015
Total Marketing Services	France	Feb 2016
Telepass	Italy	March 2016
eurotoll	France	June 2016
BroBizz	Denmark	Sept 2016
Eurowag (WAG)	Czech Republic	Jan 2017
Toll4Europe[2]	Germany	Feb 2017
tolltickets[3]	Germany	Feb 2018
Multi Service Tolls (MSTS Tolls)	Netherlands	Jan 2019

Potential EETS providers can be found among the members of AETIS, Association of Electronic Toll and Interoperable Services, but also "new" players might enter the EETS provider market. Due to the complexity of the tasks of an EETS provider, it is assumed that different actors will bundle their competences in order to be more successful in the long term. The most important "actor groups" are

[2] Previously T-Systems EETS GmbH, now cooperation between T-Systems, Daimler, DKV, euroShell

[3] Majority stakeholder of tolltickets is Kapsch TrafficCom

shortly described below.

An important role is reserved for payment providers and fuel card providers, as they have currently the best access to EETS users.

Although the current EETS legislation particularly focuses on the role of new toll service providers, the EETS providers, it allows today's national toll operators, in their role as main service provider, to act as an EETS provider as well. However, especially in the case of public tenders, the question arises whether the contracts between the state and the toll operator will permit this. In particular difficulties may arise regarding the delimitation to the national toll system and the remuneration of an EETS provider. For example, some Member States prefer the same company to be in charge of the operation of the toll system, the toll collection and the enforcement. In this situation, it is difficult to determine which part of the company's remuneration is equivalent to the toll collection – an activity in competition with EETS providers – and whether the EETS providers would be discriminated against.

The development of (in-vehicle) tolling technology may introduce new players on the EETS provider market. For example, since 2018 one of the main OBE manufacturers, Kapsch, acts as EETS provider through its involvement in tolltickets. Instead of OBE as separate device, it is expected that OBE more and more will be embedded in the vehicle – with a growing role for vehicle manufacturers and manufacturers of existing in-vehicle devices (e.g. fleet telematics), who may want to act as EETS provider – with EETS being a service within their "total care" service concept. In this respect, the involvement of Daimler in Toll4Europe is a good example.

Suppliers of IT and telecommunication services will also increasingly want to appear as system providers, for example as partner of an EETS provider (see e.g. T-Systems in Toll4Europe). The emerging trend to smartphone technologies may strengthen this.

Overall, potential new providers, such as OEMs or fleet telematics providers, are likely to develop their own EETS platform when mature white-label models exist. It is expected, that eventually all EETS providers will have a white-label model option in place, which may grow the market for EETS services, but at the same time may shrink the market for EETS providers [3].

Market potential

Remuneration of an EETS provider

One of the keys to the creation of an EETS market is seen in an appropriate regulation of the remuneration of EETS Providers. Since the EETS shall be complementary to the national electronic toll services of the Member States, the starting point for the non-discriminatory contractual conditions

should be the already existing conditions of the national toll operators (main service providers) in order to be able to compare the services rendered and risks assumed and to integrate them into a consistent remuneration system.

Remuneration of EETS providers is covered in the new EETS legislation (Article 7), in which it is stated, among others, that Member States shall take the measures necessary to ensure that in EETS domains with a main service provider, the methodology for calculating the remuneration of EETS providers follows the same structure as the remuneration of comparable services provided by the main service provider. Specific requirements and obligations of the main service provider may justify any differences in the remuneration of the main service provider compared to that of the EETS providers.

Annex II of the Draft Commission Implementing Regulation on detailed obligations of European Electronic Toll Service providers, etc. states that the commercial conditions shall also include, as a minimum, a description of the elements used to define the fixed and/or variable remuneration paid by the toll charger to the EETS provider. The remuneration may vary according to several elements, for example, the amount of toll collected, the number of active pieces of OBE, the number of toll transactions.

Austria and Hungary, for example, defined a remuneration of 2% of the toll revenues paid by the EETS provider to the toll charger [5]. Germany started with 2,9% of the toll revenues plus EUR 1.00 per active OBU per month–, a new remuneration model is under consideration at the moment.

Demand for the EETS

The electronic toll market is very dynamic: new tolling schemes are implemented, existing toll networks are expanded, operator contracts are expiring, new vehicle classes are defined, additional tariff schemes are introduced, etc. Hence, through EETS, synergy effects could be created in the introduction of new and the extension of existing electronic toll systems with benefits for all stakeholders (see Table 3).

Table 3 – Expected benefits of the EETS for the main stakeholders

EETS provider	Toll charger	EETS user
Increasing the attractiveness of the market for potential EETS providers, e.g. through the recurring process flows and streamlined system architectures	Medium- and long-term relief for national toll operators, in particular with respect to the administrative/technical effort	Choice between national toll operators or international EETS providers Reduction of administrative costs in transit traffic Possibly increased service or value-added services

From the point of view of the European Commission, there is no doubt that the demand for the EETS exists [6]. The number of electronic toll collection systems in the European Union is increasing constantly, and while a few existing systems offer cross-border interoperability, most do not. Interoperability could bring costs of electronic tolling significantly down, reduce costs of compliance for the users and enhance users' experience and their level of acceptance of road use charging [7].

Additionally, the ongoing growing number of electronic tolling subscribers – currently over 51 million in ASECAP member countries [8] – shows that the introduction of an EETS is a relevant and attractive option.

But who are "the EETS users"?

For the moment, (potential) EETS users can particularly be found in cross-border road freight transport in at least two countries with an electronic truck toll system. In general, the more tolling countries being passed through, the higher the interest in EETS will be.

Overall, there is a lack of data to get a better picture of the EETS market. For example, data on the number of vehicles and their mileage that actually travel in several toll countries, which are equipped with different OBEs and would be helped with one EETS OBE, are to a large extent missing or not publicly available. However, with the expected wider use of distance-based road charges in the future, for both heavy and light vehicles, it is to be assumed that the demand for the EETS among potential EETS users will be growing.

Estimates of the EETS market

It appears quite difficult to estimate the EETS market potential in Europe due to the scarcely available public information, which often comes from different sources and is sometimes contradictory. In 2016 we expected an EETS market volume of €1.5 to 3.0 billion for Europe, stating that previous estimates by EY [9] and BearingPoint [10] appear relatively high [11].

With its central location, Germany is one of the most important transit countries in Europe. Six of the nine corridors of the core network of the trans-European network (TEN-T) lead through Germany. Based on its relatively large toll road network and high toll revenues, Germany is one of the major tolling countries in Europe.

An update of our estimates for the market potential of EETS in Germany and other main transit countries in Europe, which have an electronic truck toll system, can be found below (see Table 4). The estimation is made based on public information on the respective annual toll revenues in these countries.

Table 4 – Estimation of annual EETS market potential in Europe

Country	Toll revenues (per year in €)	Source	EETS-relevant toll revenues (per year in €)	Share of EETS
Austria	1.46 billion (2018)	ASFINAG	438 million	30%
Belgium	713 million (2018)	Viapass	250 million	35%
Czech Republic	400 million (2018)[4]	[12]	80 million	20%
France	10.2 billion total[5] (2018) 1.5 billion HGV	[8] estimation	300 million	20%
Germany	5.1 billion (2018) >2019: 7.2 billion expected	BMVI	1.0-1.4 billion	20%
Hungary	500 million (2018)	[12]	150 million	30%
Italy	8.3 billion total[5] (2018) 1.66 billion HGV	AISCAT estimation	166 million	10%
Poland	430 million (2017)	viaTOLL	86 million	20%
Slovakia	213 million (2018) 201 million (2017)	Financial Observer NDS	70-75 million	35%
Slovenia	250 million (2017)	DARS	50 million	20%
Spain	1.83 billion total[5] (2018) 275 million HGV	[8] estimation	28 million	10%
Switzerland	1.4 billion (2018)	[12]	70 million	5%
Total	**up to 16.0 billion**		**up to 3.1 billion**	**20%**

On the basis of generally scarce and sometimes contradictory publicly available information, rough estimates were made of the current EETS market volume. For France, Italy and Spain, only very speculative estimates could be made, since there is only published information on the total toll revenues for light and heavy vehicles in these countries. The EETS share of Switzerland is expected to increase up to 35% after having integrated EETS into the existing Swiss toll system (LSVA); this is currently being implemented and is due to go live in 2020. The resulting tolling income of the above countries amounts up to €16.0 billion with an estimated EETS-share of €3.1 billion.

[4] CzechToll: With new system (since 01.12.19) increase of 100 million € (2.5 billion CZK) expected

[5] Total = light + heavy vehicles

However, it is important to take into account the duplications in the estimates. For example, there is an overlap in the EETS market potential of "foreign" users in Germany with the EETS market potential of "domestic" users in Austria, Switzerland, etc. Assuming a doubling of revenues of at least 15%, this would result in an estimated EETS market volume of ca. €2.6 billion. To account for the suboptimal data situation, a relatively large fluctuation range is assumed: today an EETS market volume of €2.0 to 3.5 billion is expected for Europe.

Outlook

Already now the EETS may be regarded a game changer, especially for the road user, for whom costs and administrative burdens are being reduced when travelling across electronic tolling countries in the Union. With the recent Directive (EU) 2019/520 providing more clarity on the interoperability of electronic road toll systems by means of the EETS, it is expected that the EETS will further act as a game changer in the world of ITS and tolling.

Especially for political and strategical reasons, the EETS is considered important, since electronic tolling is a key enabler for the wide application of the "user pays" and "polluter pays" principles. The latest assessment of the state-of-play of internalisation shows that there is room for improvement with respect to the internalisation of external and infrastructure costs of transport in the EU28 (today EU27) [13]. One option might be to enlarge the use of distance-based road charges differentiated to vehicle characteristics, location and/or time to improve the extent of internalisation for road transport. Also the latest discussions on the proposal amending the Eurovignette Directive stipulate progress in the application of the "user pays" and "polluter pays" principles, for example by extending the scope of vehicles covered and introducing a variation of charges according to CO_2 emissions. All perfectly fits with the Commission's mid- to long-term objective to make it possible to travel across the Union with only one piece of OBE [6].

In conclusion, after many years of struggling, it now seems that the EETS will finally get off the ground and all stakeholders are expected to benefit from it.

Further Steps to make EETS a real game changer

A lot has changed with respect to the HGV-tolling and it looks as EETS is already an accepted and used service in the tolling market. An important step with respect to a game changer for truck drivers and owners would be that the different member states could agree on the same classification schemes and toll-tariff variation. The change to CO_2-emission-based charges could be the chance for easy declaration without the risk of false vehicle class declaration in case of border crossings. This would be a big support for the goods transport industry.

In most member states light vehicle tolling based on the user and polluter pays principle is still a taboo. First steps for the interoperability of closed tolling systems have been taken on national but as well on international levels (e.g. France, Spain and Portugal). It would be necessary to start the discussions on a European level involving all member states about Europe-wide distance-based tolling for light vehicles like including full interoperability of all schemes. Without EETS for light vehicles, no country will risk introducing a light vehicle tolling scheme based on the user and polluter pays principle. This would however be a real game changer for the protection of the climate.

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