

Position paper for the REETS project

Introduction:

AETIS has proposed during the last Steering Committee of the REETS project to draft a global view on interoperability issues resulting from the first developments of the project and AETIS members' experience. The target of the present document is to provide the REETS project management with this global approach and raise some of the fundamental questions which could hinder the successful introduction of EETS.

According to the Consortium Agreement the REETS Project aims to deploy EETS compliant services provided by TCHs and EETS Providers in a cross-border regional project (REETS) and therefore to develop recommendations and solutions that can facilitate the introduction of EETS.

More specifically the project aims to (see REETS Project definition, annex 2 of the consortium agreement):

- Reducing barriers for EETS deployment by reducing business uncertainty for EETS providers and creating a basis for easing the bilateral negotiations between Toll Chargers and EETS-Providers
- Developing a common understanding of the service components provided by the different roles and demonstrating in practice how EETS can be deployed and operated
- Finding risk management rules mutually acceptable by the parties
- Carrying out a cost-benefit analysis before testing / implementation as a basis to decide on investments.

The project is divided in several work packages each of them aiming to analyse and propose answers, within their domain of competence, in line with the objectives of the Project.

However, AETIS believes that the project deliverables will be of practical value only if the following is achieved:

- Cut horizontally through all work packages, consolidating recommendations into a coherent set of global recommendations;
- Stay free of national/local considerations, acknowledging that EETS is based on a European directive and therefore is, binding for all involved stakeholders (Member States, TCs and EETS Providers).

The purpose of this document is to present the structure and key elements of such a proposal, offering it to the Consortium as input to the project.

1. European dimension of EETS

EETS Providers are expected to offer the service of collecting tolls in all European toll domains. This means in particular that their equipment (Front-End and back-office

interfaces) should be compliant with common standards and specifications applicable on all European toll domains. For the TC side that requirement means that **no Toll Domain may have local specificities which would compromise or prevent using the EETS Providers' equipment following such standards and common specifications without major modifications.** The REETS project aims to identify the standards and common specifications which would be necessary to cover the all European Toll Domains in order to allow future EETS Providers to have a clear view on their investments and on the acceptance procedures and costs for operating their equipment. Consequently Member States need to contractually commit Toll Chargers to use these standards and common specification in order to enable EETS.

Additionally realising EETS will need to establish a trustful and long term relation between the EETS Providers and the European Toll Chargers.

The establishment of this trustful relationship is based on the Registration Process of an EETS Provider in the country (= Member State) of residence. The Registration Process in a member state must therefore include the evaluation of the company registering as EETS Provider with regard to its financial, technical and operational ability to fulfil the requirements as set out in the EETS Directive.

The Member State accepting the Registration of a company in its role as EETS Provider needs to consider warranties concerning the regular (min. yearly) re-evaluation of the above mentioned basic requirements with regard to any TC requiring such warranties. Member States accepting a registration should also take into consideration that they may be kept liable for any damage occurring to a TC due to the non-compliance of an EETS Provider.

2. Risk management and guarantees

The major risk of EETS is the consequence of severe financial losses or even bankruptcy of an EETS Provider which would affect the Toll collection processes and would lead to the service disruption for a significant number of end users as their OBE provided by such EETS Provider would suddenly no more be valid. This situation would probably last for several weeks until all the users may have found an alternative solution.

The registration process instructed by Member States is the key process to give trust to all involved stakeholders in the evaluation of the financial situation of the EETS Provider.

The Member State of registration has the initial responsibility to check the different criteria to become an EETS Provider and to evaluate on a yearly basis the financial capability of the EETS Provider.

Taking into account the potential consequence of bankruptcy a process needs to be defined at a European level in order to manage such a situation. REETS should make proposals on the way such financial risks should be handled and consequently it would appear that the mitigation by a mere bank guarantee as set in the Decision is definitely not the right solution.

On the EP and the manufacturer side, major investments need to be made in order to comply with EETS requirements in all Europe: manufacturers need to be enabled to

provide equipment which would be accepted all over Europe and EP need to get equipment that would work and collect toll in all European toll domains. In addition the EETS framework should also allow new technologies or new processes to be experimented without major barriers. The environment for such investments to be made needs to be clear, in order to have a full knowledge of the costs and risks taken by the manufacturers and the EP's. This would also apply to some TC's when their equipment is not fully compliant to EETS.

The REETS Project should define such environment and how it should be managed at a European level.

The EETS Provider, together with the equipment's manufacturer, has to assure to be able to deal with significant number of users as well as a number of individual contract partners on the TC side. Any unsuccessful or wrong data communication between the EP and the TC would impact very strongly the EETS provider business and reputation.

Especially in the first years of the introduction of EETS it may be expected that additional risk appears to the EETS Providers business case due to unexpected / uncalculated additional risks arising from typical implementation errors.

The above should underline that the role of the Member States instructing the national TCs as well as implementing and conducting the rules for the registration process of a future EETS Provider from the key process to give trust to all involved stakeholders in the operational quality of EETS.

It is expected that the Project will also concentrate on the role of Member States and that it will make proposals to deal with all risks and the mitigation of such risks on TC and EETS Provider's side.

Technical risks and losses of performance are also important risks at the operational level of both, the TC and the EETS Provider, and the certification process of interoperability constituents (for EETS Providers as well as for TCs) should include sufficient tests to satisfy the common requirements of all stakeholders, performed by the Member State. Standardisation of specifications and implementation rules are also means of mitigating such risk.

However Member States have the responsibility for the choice of the technical solution for toll collection, its implementation (including the toll domain definition in satellite tolling systems) and their effort in enforcement and control equipment.

AETIS has drafted a list of risks which have been identified in WP1. Each identified risk needs to be evaluated in terms of importance, occurrence and possible mitigation.

3. EP acceptance process in the EETS toll domain

The acceptance process of an EETS to operate for collecting tolls in a toll domain is derived from the Decision 2009/750/EC provision 3 and its annexes III and IV. According to provision 5 of the Decision, the TCs which are included in the EETS toll domain has the obligation to accept without discrimination any registered EP and any interoperability constituent fulfilling the conditions set in the annexes of the Decision.

However the Decision does not clearly indicate which the interoperability constituents are, and does not explicitly describe the full process that would allow such interoperability constituent to be accepted to operate within the EETS toll domain.

Therefore AETIS considers that there should be a common understanding on the consistency of the so called interoperability constituents and for the acceptance process and the goals for each step of the process from the registration down to suitability for use and entering into service. In addition AETIS considers that TCs' interoperability constituents are also concerned by the certification process to guarantee compliance to the standards and the common requirement for European interoperability.

In addition the process should be facilitated as much as possible in order to reduce costs by non-repetitive tests and allow technical innovations and new developments without creating major barriers for their acceptance. Notified bodies should play a role to guarantee that the testing process has been correctly followed by all stakeholders.

3.1. Interoperability constituents

Interoperability constituents means any elementary component, group of components, applications, subassembly or complete assembly of equipment incorporated or intended to be incorporated into EETS upon which the interoperability of the service depends directly or indirectly, including both tangible objects and intangible objects such as software. Interoperability Constituents are involved in all interfaces between a Toll Charger and an EETS Provider and include security mechanism and performance checks in order to guarantee the rightness of the toll charges.

This concept concerns all interfaces and equipment used for EETS which would include DSRC-CEN and DSRC-ETSI parts of the OBE and the TC RSE (including their running application), the Front-End for satellite tolling, and the back-office to back-office interfaces.

3.2. EP registration

Registration is the responsibility of the member state of residence of the company which applies for being EETS Provider. It is necessary to make the distinction between:

- the initial registration which aims both to check the technical capability of the applicant company to operate the EETS and the financial sustainability of the company and its capability of managing and mitigating the risks of its activity (regarding tolls and other provided activities). It should be noted that for the initial registration application, the Decision does not require that the technical investments for EETS are deployed within the applicant company, however complete indication and according commitments have to be given by the applicant company to implement EETS compliant constituents.
- and the yearly update of the registration, which, in principle would no more need to justify the technical capability of the EP (especially if the EETS compliant constituents have been deployed), but would focus on the financial trust that could be given to the EP in keeping its registration.

Therefore **registration aims principally to seek for financial sustainability** of the EP and guarantees given to all stakeholders by the member state of registration that he has done his best efforts in order to get a fair and transparent financial evaluation and trust

that could be given, on a yearly basis, to the registered EP. The project need to define a common understanding by member states of the criteria that need to be checked.

What happens if an already registered EP is not able to reach the requested quality anymore and what would be the consequences for all stakeholders if such situation occurs needs to be addressed during the project as a process for mitigating EP failure risks, performed by the Member State of Registration.

In addition, AETIS considers that the obligation of covering all the EETS toll domain within 24 months is not reasonable and in addition the full coverage of EETS should be left to the rules of the market and allow EETS providers to cooperate in order to fulfil such requirement in the most efficient way.

3.3. Accreditation of interoperability constituents

The Decision sets in its provision 14, the principle of acceptance of any interoperability constituent satisfying the requirements set in the annex IV.

At the registration stage, the EP has to provide information on the interoperability constituents he intends to implement and use and show certificates of compliance to the Decision (Conformity to Specifications). However this is not sufficient to allow operating such interoperability constituents in the EETS toll domain and additional tests should be made by the EP and its manufacturers to assess their conformity and to be “accredited” using them in the EETS toll domain. The term accreditation has been used to clearly make the distinction with the term certification used in the Decision which is related to the manufacturer internal tests to issue

This accreditation process for the OBE’s used and the Front-End for satellite tolling, should be made, on AETIS point of view, **only once for all EETS toll domains**.

The REETS project should define the set of tests which would be needed and define which tests would have to be made through the control of notified bodies.

This would also apply for TC RSE and RSE running application.

Accreditation should consider specific interoperability constituents (such as ManufacturerID/EquipmentClass values in DSRC world) and should only be valid for such equipment. Conditions for accreditation renewal have to be detailed (interoperability constituent modification or new components).

Regarding back-offices, the idea of having on both sides TC and EP a test environment where both parties could make their own tests solely before starting operations, would be a good answer for back-office interfaces accreditation.

3.4. Security framework

For the DSRC part the security level defined in ISO 15509 should be implemented in all DSRC toll domains in order to get a prove of the transaction.

For satellite based tolling systems, the question of the security requirements needs to be defined at a European level in order to give manufacturers and EETS Providers clear specifications for implementing their OBE firmware and Proxy application.

3.5. Suitability for use

Suitability for use process involves end-to-end testing including the Front-End, the RSE and the respective back-offices: it can be progressive real go-live operations or a complete set of tests if the equipment are unknown and have never been used before.

Currently, on the EP side, the suitability for use process has to be undertaken in every single toll domain which could be dramatically time and money consuming as the process is led by each toll Charger. In addition, as the process involves satellite OBE's, there might be some requirements to be fulfilled by the EP in order to update its OBE firmware in a time frame incompatible with existing suitability for use processes defined by toll chargers.

Modifications made to interoperability constituents could be audited by Notified Bodies which would control the impact on toll collection. This could help the TC to keep compatible with EETS and EP to make choices of tests which would be necessary and in which location, before operating its modification in real live. It would also justify those choices against TC's.

In real live of EETS, most of the suitability for use processes would affect already existing and distributed OBE. AETIS recommends that the suitability for use procedure should be **left to the responsibility of the EP** and mentioned as such in the bilateral contract. In the eventuality, the real go-live first transactions are not giving satisfactory results the EP and the TC, with the eventual help of the Notified Body, may then decide additional tests to sort out where the problem is.

3.6. Role of the Notified Bodies

Notified Bodies could play an important role giving trust on the toll collection system by controlling the accreditation process and further modifications of interoperability constituents and by auditing the way the EP is using and monitoring its system.

3.7. User registration

Taking into consideration that the EP has an obligation of payment for liable tolls, the registration information should be left to the minimum required for determining the toll charges: most of the required information is set in the license plate document except in the case where euroclass or CO² class has not been filled in by the national authority.

Harmonization and simplification of users registration should be foreseen in respect to the contractual framework under which EETS is working.

4. Quality monitoring

The project is defining a toolbox of common KPI's for monitoring the whole operations of the EETS tolling system.

AETIS recommends using these KPI's where applicable in all toll domains to get comparisons at the whole EETS toll domain (and not only within each toll domains) and to use the KPI's for improving the quality of the service, trying to explain non-

conformities or discrepancies and **not linking them directly to a penalty scheme** (bonus or malus).

A penalty scheme should be applied if no action is taken by the parties (EP or TC) to solve identified problems in a reasonable timeframe. However the level of penalties should be affordable for the EP and lead at the extremity to a request to the member state of registration to retrieve its accreditation (with consequences to be identify and mitigated in the risk analysis).

5. Remuneration

EETS seeks to give added value in mutualizing customer care and equipment costs by the technical and contractual interoperability.

The remuneration scheme should take into account the services which are rendered by the EETS Provider to the Toll Charger. The services rendered by the EETS Provider may be identified as the services which the Toll Charger would have to support if the Toll Charger would have to render the services on its own without the presence of the EETS Provider. The following services have been identified by AETIS:

1. Providing to the users and personalizing the OBE for toll collection
2. Operating the Front-End for toll purposes and taking care of the aftersales service of the OBE (including OBE renewal and OBE failure process management)
3. Operating the back-office to back-office data exchange with the Toll Charger
4. Providing the toll declarations where applicable
5. Monitoring the whole system to comply with Toll Chargers requirements
6. Investing for permanently satisfy the Toll Charger requirements if there are evolutions required by the Toll Charger
7. Managing the risks related to the contract signed with the Toll Charger, especially with regard to the eventual penalty schemes which could be included in the contract or even loss of toll revenue that could be asked for to the EETS Provider
8. Managing the contractual relation with the users: signing the subscription contract, explaining the toll scheme, helping for registration where required, pre-instructing claims or question from the users...
9. Invoicing and collecting the toll fees from the users, paying back the Toll Chargers within a time frame compatible with the standard applicable toll recovery process from the users
10. Guaranteeing the payment of liable tolls due by customers and, if required, providing the Toll Charger with a one month bank guarantee
11. Taking into account the upfront payment that the EETS Provider would have to make to the Toll Charger if the terms of payment required by the Toll Charger are too short to recover the money from the user
12. Managing the subscription to the eventual discount schemes set in place by Toll Chargers

The remuneration scheme should fairly reflect the services which the Toll Charger requires from the EETS Provider and the price should take into account all the services mentioned above. The remuneration scheme should be sufficiently attractive to allow the EETS Provider to market the EETS contract to the customer in place of the national local non interoperable subscription.