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report

D 3.2

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A stylized map of Europe in light blue, overlaid with numerous curved blue lines that sweep across the continent from the bottom right towards the top left.

A Roadmap for EETS Interoperability Management Implementation

Table of contents

EXECUTIVE SUMMARY	4
1. INTRODUCTION	6
1.1. Background	6
1.2. Purpose of this document	7
1.3. Methodology	7
2. ESTABLISHING EETS INTEROPERABILITY MANAGEMENT	8
2.1. CESARE IV implementation approach	8
2.2. Understanding EETS Certification	9
2.3. Clustering Toll Chargers	11
2.4. EETS Specifications	12
2.5. Business models for EETS IM	12
3. INTEROPERABILITY MANAGEMENT PROCESSES	14
3.1. Functions and processes in Interoperability Management and their Roadmap position	14
3.1.1. EETS Regulation	14
3.1.2. Monitoring	14
3.1.3. Procedures leading to EETS Status	15
3.1.4. Settlement of disputes	15
3.1.5. Conclusion	15
3.2. Process structure	16

3.3. Main processes	17
3.3.1. Develop standards required for EETS IM	17
3.3.2. Develop specifications required for EETS IM	17
3.3.3. Develop a framework for EETS Domain Statements	17
3.3.4. Develop mechanisms for certification	18
3.3.5. Develop EETS regulatory framework	18
3.4. Sub-processes	19
4. THE ROADMAP – EETS IMPLEMENTATION CRITICAL TIMELINE	21
5. STAKEHOLDERS IN ESTABLISHING EETS IM	23
5.1. Identifying the stakeholders	23
5.2. Summary of stakeholders roles in the realization of EETS Interoperability Management	24
6. CONCLUSIONS – ACTIONS AHEAD	25
6.1. The roadmap context	25
6.2. Summary of stakeholders key short term actions (now)	25
6.3. Measures outside EETS IM that will speed up and facilitate EETS implementation	26
ANNEX 1: SUB-PROCESS DESCRIPTION	27
ANNEX 2: GLOSSARY AND ABBREVIATIONS	37
ANNEX 3: STANDARDISATION STATUS OVERVIEW	39

Executive summary

The overall purpose of CESARE IV - Work Package 3 is to develop proposals for Interoperability Management for the European Electronic Tolling Service (EETS).

Report D 3.2 aims to:

- detail European processes required to enable the implementation of EETS Interoperability Management
- develop a proposal for a way forward for each of these processes (the roadmap)

The implementation roadmap is dependent on the environment in which EETS implementation takes place. The roadmap reflects an EETS IM implementation scenario where interoperability gradually grows from local systems and regional co-operations into Europe-wide coverage. It is likely that groups of stakeholders will develop their own pan-European forums. Toll Chargers, with their practical experience of running tolling systems, are already represented through ASECAP, and EETS Providers may wish to develop their own international bodies. In general, already existing international organizations (e.g. ASECAP and the Stockholm Group) are expected to play important roles in EETS IM implementation and operation.

Interoperability Management procedures will be distributed between European, national and local stakeholders following the responsibility for the execution and operation of different elements of the service: While definition of the EETS regulation is a procedure on the European level, procedures for monitoring adherence to the EETS specification needs to be established on the local level as part of stakeholders' QA systems.

This puts high requirements on availability to agreed specifications and procedures. In fact, the distribution of EETS Interoperability Management brings higher requirements on European regulations concerning specifications, procedures etc. than with a centralized organization, as e.g. certification and conflict resolution will have to be handled by organisations that are not necessarily experts in EETS.

The critical timeline in EETS IM implementation

The EETS decision states that EETS Providers need access to certified interoperability constituents before they can perform MS registration. Following that, "*Suitability for use*"- examination has to be carried out before the EETS Provider can sign a contract with Toll Chargers concerned.

Both these steps will require access to agreed specifications and procedures, which is also concluded in the EETS decision.

The roadmap presented in this document details this dependency further and defines a critical timeline including the processes "*Develop standards for EETS Security*", "*Develop and agree on specification for security mechanism*" and "*Establish EETS Regulatory Framework*" which would in a very optimistic case conclude the process by 2012-06.

If an EETS specification could be established without a more detailed security framework, or if the security standardisation could be speeded up, the critical timeline could be shifted to "*Develop standards for Interoperability interfaces*", "*Develop and agree on specifications for interoperability interfaces*", "*Develop and agree on a format for and contents of EETS Domain Statements*" and "*Establish EETS Regulatory Framework*" which could be concluded by 2011-09.

An agreement within the Comité Télépéage should be sought to allow for e.g. certification to commence. A “*technical starting point*” for EETS IM could then be in the beginning of 2012 when the work on the required certification mechanisms has been concluded.

Need for stakeholders actions

In the concluding list of required short term actions to enable EETS IM implementation in accordance with the roadmap, ASECAP is considered to represent Toll Chargers and the Stockholm Group to represent Member States and act on their behalf. As this representation is not fully coherent with the actual roles of these organisations, the allocation of tasks below shall be seen as indicative:

- CEN should proceed with the work on the relevant standards for electronic fee collection. This includes in particular the security framework and conclusion of the work item on “Secure Monitoring” to allow for standardisation work on this important subject to commence
- The EC needs to coordinate and finance project teams to carry out standardisation related to EETS security and related test procedures
- The EC needs to develop and finance platforms to ensure that all stakeholders are able to contribute to the development of EETS specifications
- The Stockholm Group, ASECAP and potential EETS Providers should engage (i.e. try to find all possible measures to support) in the completion of the interface standardisation work and take the initiative to the development of specifications and profiles related to (among others) the ISO 12855 standard
- The Stockholm Group, ASECAP, potential EETS Providers and other necessary stakeholders should identify and proceed with those elements of the EETS specification that are required for getting EETS IM in place but not dependant on standards
- The EC should support the creation of the EETS specification by financing expert groups or projects where necessary
- ASECAP and the Stockholm Group, supported by technical expertise, should develop and agree on a format for and contents of EETS Domain Statements. The first step to be concluded in a few months
- The European Commission should proceed with the establishment of the Coordination Group of notified bodies as this group has a key task in the preparation of the certification process

Following these immediate actions, the roadmap identifies follow up actions and additional actions to be taken in the next two years in order to enable the proper implementation of EETS Interoperability Management.

1. Introduction

1.1. Background

CESARE is a suite of projects promoted by ASECAP, the ASECAP associated organizations and the road administrations of several European countries known as “the Stockholm Group” (SG). CESARE is supported by the European Commission, with the objective of specifying, designing, developing, promoting and implementing a common Interoperable European Electronic Tolling Service (EETS) on the European road network. CESARE has been divided into several phases, whereby the previous phase called CESARE III has been completed in October 2006. The results of CESARE III showed that there was a need for further actions in a next project phase (CESARE IV) in order to realize the interoperability objectives. The main goal of CESARE IV is to define a framework for establishing an interoperable European Electronic Tolling Service functioning in a coordinated way at the European level, while allowing the Member States to fasten the pace of their national implementation plans for EETS. In this way CESARE IV will contribute to the implementation of the Directive 2004/52/EC.

It is important to note that the CESARE IV project has proceeded in parallel with the development of the draft EETS Decision agreed on 27 March 2009. Work on this report has throughout been able to reflect that draft in full, while earlier parts of the project were not able to work against a stable document. It is important to note that the draft EETS Decision changed substantially in the final weeks before agreement was reached on the final version. It is therefore inevitable that there are some inconsistencies in terminology and in substance between this report and those produced earlier in the process.

This has led to the following significant changes in the CESARE IV working assumptions from 2007 that have had an impact on the work done by WP3:

- The IM was supposed to be one entity on an international level. This assumption is no longer valid and the original IM role and responsibilities defined in CESARE III are distributed on several actors both on international and national levels.
- The original project definition was based on the understanding that there would be a much greater degree of conformity in the implementation of EETS in member states with a much greater degree of centralisation of Interoperability Management. The framework eventually agreed in the Decision envisages a much greater degree of freedom for Member States in choosing how to implement EETS and manage interoperability compared to what was assumed in the CESARE IV project definition. Thus the original intention that CESARE IV should describe detailed processes has been modified and instead WP03 seeks to focus on more general and high-level principles of Interoperability Management and actions required to facilitate the required development.

1.2. Purpose of this document

The overall purpose of WP3 is to develop proposals for Interoperability Management.

Report D 3.1 has provided an outline description of the processes and structures that are needed to make European interoperability work. It lists the stakeholders and their interests and obligations in the processes identified. From this, Report D 3.2 develops a work plan and timeline (identifying what shall be done, by whom and when) for the implementation of interoperability management – a roadmap.

As the Directive and its subsequent Decision details a number of regulatory responsibilities laid on e.g. Member States, the roadmap will focus on enabling actions, i.e. creating the framework required to allow Member States and their institutions to fulfil their obligations during the implementation period. The roadmap will not elaborate on how the MS shall organise their work in order to meet legal requirements on e.g. the establishment of the requested organisation. Each member state has to find a structure that fits its governance structure.

This document aims to:

- detail European processes required to enable the implementation of EETS Interoperability Management
- develop a proposal for a way forward for each of these processes (the Roadmap)

1.3. Methodology

In order to develop a feasible roadmap for the implementation of EETS Interoperability Management, the report takes its starting point in the review of the current situation as regards processes and stakeholders in European toll collection that was identified in Reports D 2.2 and D 3.1, in order to respond to the question: How do we proceed from where we are today to EETS IM operation? What tools are required to enable this process and which stakeholders are in command of which process?

The methodological approach taken includes the following steps:

- Identification of all processes required for EETS implementation in D 2.2 and D 3.1
- CESARE IV workshop on the relevance of each of these processes for EETS Interoperability Management implementation and for the roadmap
- A review of the legal and business context in which EETS will be implemented
- Detailed analysis of priority processes and identification of critical timeline
- Follow-up workshop on conclusions and proposals

2. Establishing EETS Interoperability Management

2.1. CESARE IV implementation approach

As stated in the introduction, two important working assumptions have been significantly changed in the course of CESARE IV:

- The IM was supposed to be a single entity on an international level; in the current approach the IM functions and responsibilities are distributed on national and international actors
- Also, and following from this, EETS implementation and operation will be a more diversified and less homogenous process with few centralized procedures

The implementation roadmap is dependent on the environment in which EETS implementation takes place. A more distributed role model and operation brings changes to the anticipated business models to be found and implementation process that will be seen. Hence, the EETS IM implementation roadmap that is presented in this report is based on certain assumptions:

- EETS will gradually emerge as toll collection networks are extended and more and more stakeholders get associated with the service.
- It is likely that groups of stakeholders will develop their own pan-European forums. Toll Chargers, with their practical experience of running tolling systems, are already represented through ASECAP, and EETS Providers may wish to develop their own international bodies. In general, already existing international organizations (e.g. ASECAP, the Stockholm Group) are expected to play important roles in EETS IM implementation and operation.
- However, it is important to note that generally the relations between individual parties will be contractual and governed by national law, rather than being based on agreements between Europe-wide bodies.
- We expect existing regional and national co-operations between EFC stakeholders to play an important role in EETS IM implementation and operation. Clusters of Toll Chargers will facilitate implementation as they can appear as a single body in contractual relations and share resources for Interoperability Management tasks to be carried out. This will lead to quicker Europe-wide service coverage. Clusters of Toll Chargers will have the same obligation as individual Toll Chargers to complete a European-wide service as required by the Decision and the Directive on Interoperability.
- From a Service User and Toll Charger perspective important parts of EETS will be implemented as an adaptation to existing systems and services, rather than require replacement of systems and services. Hence, the Toll Charger shall not be expected to build a separate system for EETS Service Users but rather extend the capacity of existing systems to encompass EETS Service Users together with local users.
- There will however be new elements added to existing systems and services in order to manage interoperability processes. These new elements will follow from agreements between stakeholders in EETS, and subject to conditions as agreed to between the parties concerned. A typical example is the need for exchange of black-lists in a commonly agreed format.
- Stakeholders in EETS will base their operation on sound and viable business conditions, where contracts established between parties reflect these conditions as regards risk, liabilities, remuneration etc.

- Standards will play an important role as they will be the basis for the EETS Specifications that will be the core of EETS interoperability.
- There can only be one valid set of European specifications related to the EETS service at a specific time (the “EETS Specification”) and these are compulsory for use in the provision of EETS.

Following from these assumptions, the roadmap reflects an EETS IM implementation scenario where interoperability gradually grows from local systems and regional co-operations into Europe-wide coverage. As Toll Domains emerge, and eventually enters into cluster cooperation with other Toll Domains, and EETS Providers are established and withdrawn from the market, the EETS shall be seen as a dynamic service with a dynamic organization. This dynamic service is provided through organisations cooperating on bilateral contract agreements, in accordance with agreed specifications and legal framework, on mutually beneficial terms.

Interoperability Management procedures will be distributed between European, national and local stakeholders following the responsibility for the execution and operation of different elements of the service: While definition of the EETS regulation is a procedure on the European level, procedures for monitoring adherence to the EETS specification needs to be established on the local level as part of stakeholders’ QA systems.

This puts high requirements on availability of agreed specifications and procedures. In fact, the distribution of EETS Interoperability Management brings higher requirements on European regulations concerning specifications, procedures etc. than with a centralized organization, as e.g. certification and conflict resolution will have to be handled by organisations that are not necessarily experts in EETS.

2.2. Understanding EETS Certification

Article 3 of the EETS Decision describes the requirements that must be met by an EETS Provider who wants to become registered in a Member State. Article 3b sets out that in order to demonstrate their technical compliance, EETS Providers must meet the conformity to specifications procedure as described in Annex IV.1 of the decision. As the registration procedure is done independently from a specific Toll Domain, this means that the conformance procedure can only provide tests in a test environment against certain test equipment.

The EETS Decision has been understood to describe the EETS certification process to include two elements of specific relevance to the roadmap definition:

- The conformity of technical systems and service processes to specifications which will be checked by a Notified Body or by self-assessment. This is a prerequisite for registration as an EETS Provider and gains him the right to enter into contract negotiations with Toll Chargers.
- The suitability for use testing between EETS Providers and Toll Chargers performed by Notified Bodies to ensure that the systems meet the requirements of the EETS Domain Statement for each Toll Charger in operational conditions.

The roadmap presented in this document is based on a specific sequential understanding of this process. The figure below describes the order in which processes have to be carried out. This is essential to the definition of dependencies in the roadmap:

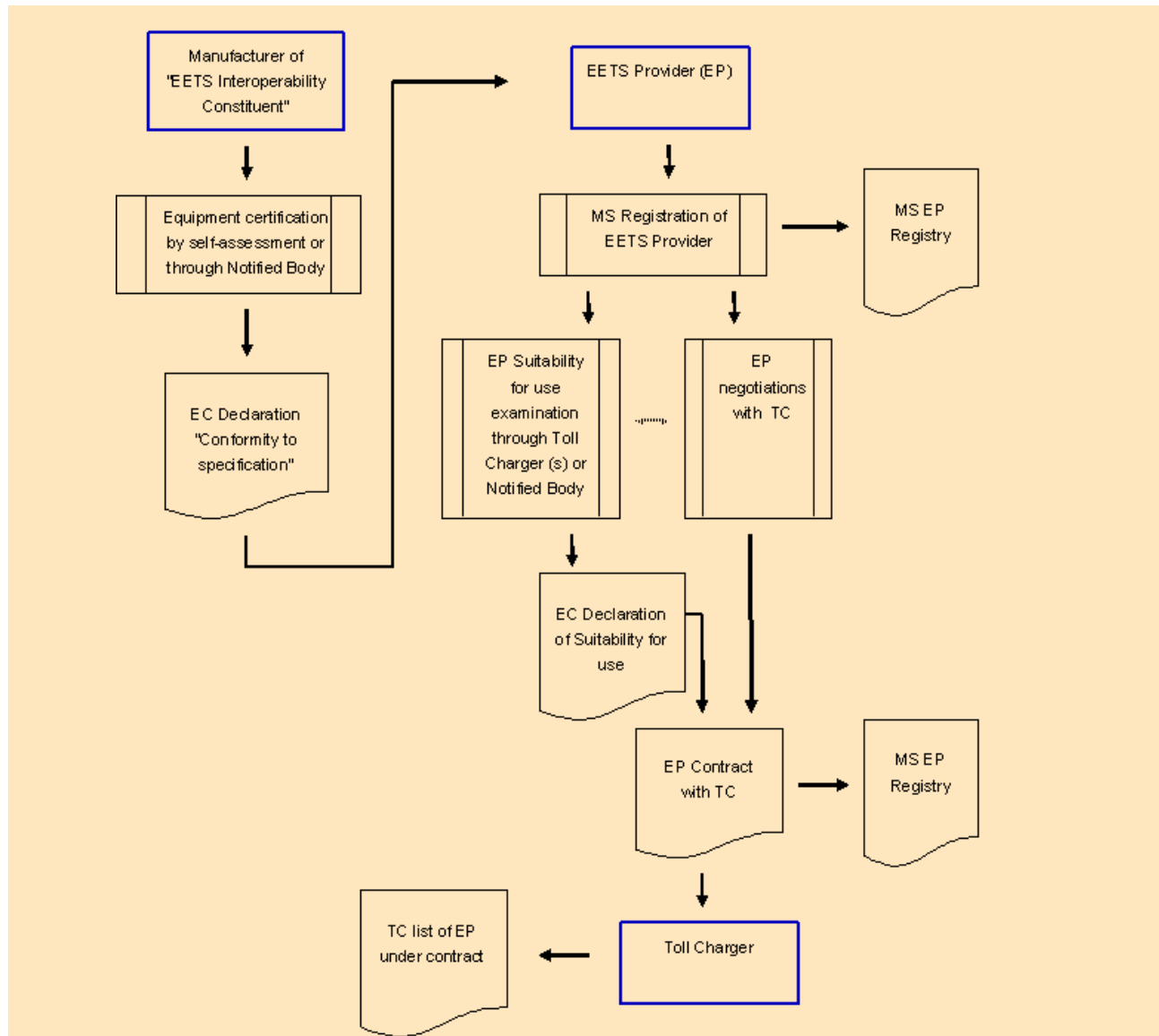


Figure 1 Schematic description of sequences in EETS Certification of equipment and EETS Providers vs. MS and TC

The figure shows that EETS Providers need access to certified interoperability constituents before they can perform MS registration. Following that, Suitability for Use examination has to be carried out before the EETS Provider can enter into a contract with Toll Chargers concerned. Concluded contracts are listed in as well MS national electronic register, as in the Toll Chargers public list of EETS Providers under contract.

2.3. Clustering Toll Chargers

Implementation of EETS will follow from EETS Providers entering into contractual relations with Toll Chargers¹ on the conditions that shall rule their cooperation. Such contracts follow from Suitability for Use testing of the EETS Provider equipment and interfaces in the Toll Charger environment concerned.

The business model approach taken by CESARE IV is based on an expected gradual implementation of EETS through (regional) co-operations between clusters of Toll Chargers that enter into interoperability schemes. The cluster approach is intended to be a step towards full coverage of all EETS domains as required by the Decision. For the EETS implementation such cluster may appear as a single contractual partner in the relation with EETS Providers. Several clusters of this character are already in operation and will form an important starting point for Europe-wide interoperability. Clusters of Toll Chargers may facilitate the development of Europe-wide EETS as compared to all Toll Chargers acting as individual organisations. As such clusters may gain a considerable influence on the EETS development it is paramount that they respect the basic principles of transparency and non-discrimination towards EETS Providers, thus ensuring free access to the EETS market and compliance with European and national competition principles.

Furthermore, cooperation between Toll Chargers may play an important role in the establishment of the processes required for e.g. Suitability for Use Declaration testing, and for manufacturer certification of equipment (as test beds). Instead of each Toll Charger providing an environment for such testing, clusters of Toll Chargers can agree on a common facility / location for such tests.

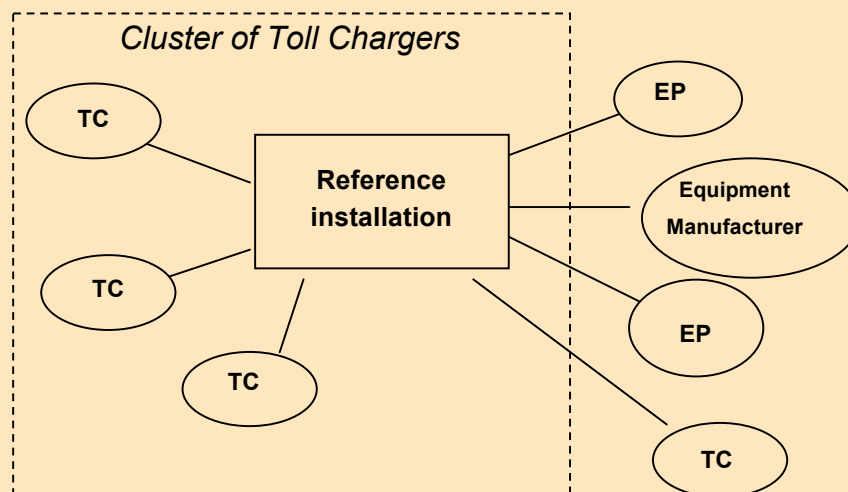


Figure 2 TC cooperation on facilities for e.g. Suitability for Use tests

¹ E.g. the Nordic EasyGo service (SE, NO, DK) and the French TIS-PL

2.4. EETS Specifications

EETS is expected to emerge “bottom-up” rather than “top-down” following the approach taken. Hence availability to a common set of specifications that are compulsory to use is a prerequisite for achieving interoperability. If this can not be achieved, this would lead to the necessity for each contractual relation to define its specific set of specifications to be applied, which would result in un-harmonised interfaces and increased costs for interoperability.

EETS Specifications will not only define technical elements (e.g. interfaces) but also aspects of relevance for the contractual agreements and the EETS Domain Statements such as Key Performance Indicators to be applied in the service.

The relevant contents of the EETS Specifications and their application in EETS are described in-depth in Report D 3.1².

2.5. Business models for EETS IM

A business model describes the way in which an organisation or network of organisations wants to create a service using some kind of technology. The term business case mostly refers to a financial analysis which can be considered to be a more extensive elaboration of the financial domain of the service. A business plan is a plan to convince decision makers and investors.

A business model contains four domains: A service domain (describing the goods to be provided), an organisation domain (describing the roles, activities and required parties to create value for a customer), a financial domain (describing the way an organisation wants to generate business for a specific service) and a technical domain (describing the technical architecture and functionalities that are required to realise the service).

The EETS Directive and Decision include elements of all these domains, focusing on the service, technology and organisation. In order to provide a business case the organisational and financial domains need to be filled out more in detail. Both Toll Chargers and EETS Providers will experience potential costs and benefits as a result of EETS, which will need to be reflected in the structure of interoperability management. The business case for EETS will be determined by the balance of the costs and benefits for each of the actors. However, Interoperability Management will need to be sufficiently flexible to deal with a wide range of business and functional models, while acting in a way that does not impose unnecessary costs on the participants in the service.

Considering a decentralised approach to Interoperability Management, the associated costs need to be balanced by the benefits from EETS perceived by each actor in the system. A thorough report on this has been provided in report D 3.1. As the benefits from interoperability are not dependent on the organisation of interoperability management, limiting the cost for IM will improve the EETS business case for all actors.

2 CESARE IV Deliverable 3.1 sections 3.2 and 3.3

The CESARE IV approach to this includes the following elements:

Compulsory use of defined specifications

EETS specifications should be given regulatory status in order to minimize sources of conflicts and facilitate “built-in interoperability” at all levels of the system. EETS IM requires a second EC Decision where the appropriate specifications and procedures are lifted to regulatory status.

Clusters of stakeholders

By forming clusters of Toll Chargers, fewer contractual relations will be required, and a majority of transactions will be handled in the regional environment³. This will facilitate EETS Providers relations with Toll Chargers as the number of agreements required to achieve pan-European EETS coverage will be limited.

Distribution of costs

The main principle stated in report D2.2 is that any IM service provided or any IM regulatory task performed during IM operation shall be paid either by the entity providing the service (as part of its obligations), the entity benefiting from the IM service or by a third party financing the cost of the regulatory task, e.g. funding by a Member State via a public authority.

The development and implementation of Interoperability Management will bring costs. The roadmap identifies processes that are required in the development phase (specifications etc.) and points at the stakeholders that need to engage in the process. Costs will be associated with this engagement, and it is assumed that Member States, the European Commission and other stakeholders will participate in cost-sharing.

³ A good example is the hierarchical architecture of the EasyGo service

3. Interoperability Management Processes

3.1. Functions and processes in Interoperability Management and their Roadmap position

Report D 2.2 defines four main IM functions with associated procedures (as identified in report D 2.1) which are listed below together with a description of how these are accounted for in the roadmap processes:

3.1.1. EETS Regulation

1. Develop and maintain the core service definition and the procedures for technical, functional and contractual interoperability, the quality of service, the adhesion and withdrawal of TC⁴ and EP and handling of complaints.
2. Develop/maintain a forum for EPs and TCs involvement in the definition of EETS core rules and regulations
3. Develop/maintain the procedures for monitoring the operation of the TC and EP and for registration of EETS stakeholders
4. Develop and update an EETS security policy framework⁵
5. Management of security protocols

The Roadmap points at the need for an action towards further specification of the service, and this specification to be included in an extended regulation. Also procedures for certification of technical, functional and contractual interoperability need to be developed and established.

3.1.2. Monitoring

1. Monitor security lists
2. Monitor that the security policy is properly implemented and adhered to by EPs and TCs
3. Monitor and audit the operation of the TC and EP
4. Monitor the adhesion and withdrawal of EP and TC to the service (list-keeping)

The roadmap includes the proper implementation of the security policy by EPs and TCs. It is an important aspect of the EETS Providers certification and Suitability for Use declaration and also TC's compliance to the security policy needs to be confirmed in their qualification⁶.

⁴ Example for withdrawal of a TC: End of the concession, so that toll collection ceases

⁵ See CESARE IV D 2.2 section 1.4 for reference

⁶ Toll charger Qualification means that the TC back-office and road side systems are ensured to be compliant with the EETS specifications

3.1.3. Procedures leading to EETS Status

1. Notified Body appointment
2. Equipments certification
3. Toll Charger qualification
4. EETS Provider approval

The roadmap details several processes for the establishment of this function. These are mainly relating to the availability of the required technical specifications to allow for certification of equipment and EP approval as well as for the qualification⁷ of Toll Chargers.

3.1.4. Settlement of disputes

1. Investigation in case of dispute or risk of dispute (requested by a single party)
2. Existing schemes for judicial settlement of disputes (requested by a single party)
3. Existing schemes for arbitration in case of amicable settlement of dispute (requested by both parties)
4. Clarification of the EETS rules (on request of the parties or a jurisdiction or an arbitrator)

EETS conflict resolution will remain with National Conciliation Bodies in the Country of the TC, appointed by MS and governed by European and national legislation. The roadmap does not further require any procedures in this area.

3.1.5. Conclusion

To conclude, the roadmap will develop further processes relating to functions *EETS regulations, Monitoring and Procedures leading to EETS Status*, while procedures for Settlement of disputes has to be catered for by national authorities.

A detailed mapping between IM functions and procedures and the processes defined in the roadmap is provided in section 3.4 below.

⁷ Toll charger Qualification means that the TC back-office and road side systems are ensured to be compliant with the EETS specifications

3.2. Process structure

The roadmap defines processes with a sequential approach to implementation:

Enabling processes are preparing the foundation on which EETS stakeholders can establish and operate Interoperability Management. Such processes relate to standardisation and specification work, and the establishment of procedures for certification etc.

Establishing processes are carried out in order to set up the organisation that is required to operate the Interoperability Management. These processes include support to MS registration of stakeholders, certification of equipment and organisations etc.

Operational processes are conducting the EETS operation upon the framework provided by the Interoperability Management. These operational processes include monitoring, conflict resolution etc.

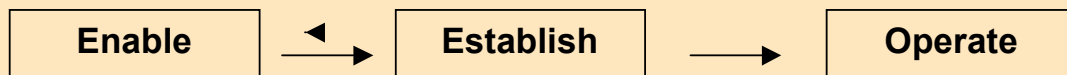


Figure 3 Phasing of roadmap processes

The roadmap will further detail processes that are **required to enable EETS Interoperability Management**. The specific actions required by Member States and other stakeholders to establish the required organisation and enter into operation will follow from their legal responsibilities, as defined in the Directive and the Decision, and from the contractual agreements that will be established during the implementation process.

Enabling processes are defined at two levels:

- Main processes
- Sub-processes

CESARE IV has defined five main processes related to the implementation of EETS IM, where each main process may contain one or more sub-processes required to establish EETS IM:

1. Develop standards required for EETS IM
2. Develop specifications required for EETS IM
3. Develop a template for EETS Domain Statements
4. Develop mechanisms for certification
5. Develop EETS regulatory framework

Each process will terminate in establishment of the required organisation (under MS legislation) and in operation of Interoperability Management using this organisation. The detailed relation between main- and sub-processes of the roadmap and the functions and procedures of IM is provided in section 3.4 below.

3.3. Main processes

3.3.1. Develop standards required for EETS IM

The view of CESARE IV is that standards provide a necessary toolbox for specifications. Hence EETS specifications will be developed as specific parametric implementations of the standards concerned.

Standards are developed by CEN/ISO (and other relevant standardisation organisations) through technical committees, working groups and sub-groups addressing specific work items. If resources are made available (e.g. by the EC) project teams can be established to develop proposals for standards, in particular in the final stages of the process. Otherwise, standardisation is conducted by representatives of the stakeholders involved in the technical committees and working groups concerned. As concerns EETS, and EFC in general, a lot of standardisation work is ongoing with good results. It is however obvious that standardisation related to EETS security lags behind. A work item for this has recently been defined but no project team has been established, among others due to lack of financial support.

3.3.2. Develop specifications required for EETS IM

Specifications are, amongst others, specifically agreed implementations of standards. As EETS IM face implementation and operation where responsibilities for monitoring of operation and conflict resolution are delegated to Member States and stakeholders in EETS operation through their contractual agreements, there is an obvious need for undisputable specifications as the basis for interoperability. Furthermore, without an EETS specification, there is nothing to certify EETS Interoperability Constituents or EETS Providers against. So far, no EETS specifications are available and no stakeholder has taken or been given the responsibility for their development.

3.3.3. Develop a template for EETS Domain Statements

The EETS Domain Statement is a Toll Chargers expression of (among others) the conditions under which the EETS Providers are expected to gain access to the Toll Charger's system. The Decision includes a general description of the expected content of a generic EETS Domain Statement, and a further elaboration of this has been provided by CESARE IV as annex to D 3.1. Work on this issue has also been initiated to be included in the EETS Application Guide.

It has been concluded in CESARE IV that in order to facilitate interoperability and minimize future conflicts between stakeholders, an agreed framework providing the appropriate degrees of freedom in the EETS Domain Statements should be developed. Experience from the implementation process will show whether a framework for the EETS Domain Statement will need a stronger regulative base and needs to be included in a future EC Decision.

3.3.4. Develop mechanisms for certification

Certification of equipment and organisations will play an important role for EETS implementation, and guidelines for the appropriate procedures are central in EETS Interoperability Management. Certification will be made through Notified Bodies and/or Toll Chargers alone or in clusters, or through self-assessment. Different methods apply to different certifications (ref Deliverable 3.1⁸). In all situations, certification needs to be based on a set of common and harmonised specifications and requirements.

3.3.5. Develop EETS regulatory framework

Processes above will result in specifications and procedures that are essential to establish and operate EETS IM. As a decentralised organisation of EETS IM is expected, there must be only one set of such specifications and definition of procedures that are common to all stakeholders in EETS and compulsory for use. This process aims at bringing the relevant specifications and procedures to this status.

8 CESARE IV Deliverable 3.1 sections 3.3 and 3.4

3.4. Sub-processes

Each of the sub-processes listed below are detailed in Annex 1 to this report. The list below provides the hierarchical overview and backwards reference to D 2.2, and clarifies also which Interoperability Management Functions and Procedures that are supported. The right column defines whether the concluding result of the process should be included in the regulatory framework for EETS.

Main process	Sub process	D 2.2 functional reference	Facilitator for	Output compulsory for EETS to be included in a future EC Decision
1. Develop standards required for EETS IM				
	1.1. Develop standards for interoperability interfaces		EETS Specifications	
	1.2. Develop standards for EETS security		EETS Security Specifications	
	1.3 Develop standard test specifications for interoperability interfaces	3.2	Certification of EETS Providers and TC qualification	
	1.4 Develop standard test specifications for EETS security	3.2	Certification of equipment and EETS Providers and TC qualification	
2. Develop specifications required for EETS IM				
	2.1 Develop and agree on specification for interoperability interfaces	1.1	Certification of EETS Providers and for TC qualification	Yes
	2.2 Develop and agree on specification for security mechanism	1.4, 1.5	Certification of equipment and EETS Providers and for TC qualification	Yes

Main process	Sub process	D 2.2 functional reference	Facilitator for	Output compulsory for EETS to be included in a future EC Decision
3. Develop a framework for EETS Domain Statements				
	3.1 Develop a format for and contents of EETS Domain Statements	3.3	EETS Specification, Qualification of TC, Contractual agreements	To be decided
4. Develop mechanisms for certification				
	4.1 Develop a mechanism for manufacturers "Conformity to specification" Declaration	3.2	Certification of equipment	Yes, should be included as part of EETS specification
	4.2 Develop a mechanism for EETS Providers Suitability for use certification	1.3, 3.4	Certification of EETS Providers, Contractual agreements	To be decided
	4.3 Develop mechanisms for TC qualification	1.3, 3.3	Toll Chargers qualification	
5. Develop EETS regulatory framework				
	5.1 Develop EETS Regulatory Framework	1.1, 1.2, 1.3, 1.4, 1.5	Future EC decisions	(This process defines the decision process in itself)

4. The Roadmap – EETS implementation critical timeline

The CESARE IV Roadmap aims at supporting the implementation of EETS Interoperability Management in accordance with the Member States and EC Decision on EETS. This process prescribes end users availability to EETS in 2012 (expected). Following the work in CESARE IV, it has come clear that access to agreed specifications is time critical, and the following roadmap has been designed to minimize the time needed for putting EETS IM in operation.

The detailed analysis of the timing of the above processes, interdependencies and the critical timeline in the EETS IM implementation is provided in Annex 1.

The GANNT chart on the following page illustrates the sequence of processes and the interdependencies between processes. Each line of action will terminate in the establishment of an EETS IM procedure which is ready to be put into operation by the stakeholders concerned.

The GANNT scheme clearly defines a critical timeline including the processes 1.2 (Develop standards for EETS Security), 2.2 (Develop and agree on specification for security mechanism) and 5.1 (Establish EETS Regulatory Framework) which would in a very optimistic case conclude the process by 2012-06.

If an EETS specification could be established without a more detailed security framework, or if the security standardisation could be speeded up, the critical timeline could be shifted to 1.1 (Develop standards for Interoperability interfaces), 2.1 (Develop and agree on specifications for interoperability interfaces), 3.1 (Develop and agree on a format for and contents of EETS Domain Statements) and 5.1 (Establish EETS Regulatory Framework) which could be concluded by 2011-09.

Both these timelines are based on a 10 month period to achieve a regulatory status for the specifications concerned. This 10 month time period is divided into two activities, where the first 4 months aims at compiling the decision text and at achieving agreement within the Toll Committee, and the last 6 months follow from the formal EC decision process (which may be shortened to 4 months). This means that already late in 2011 there could be an agreement among the MS and a Toll Committee decision which should be strong enough to allow for e.g. certification to commence. This would create a “technical starting point” for EETS IM in the beginning of 2012 when the processes 4.1 and 4.2 have finalized their work on the certification mechanism.

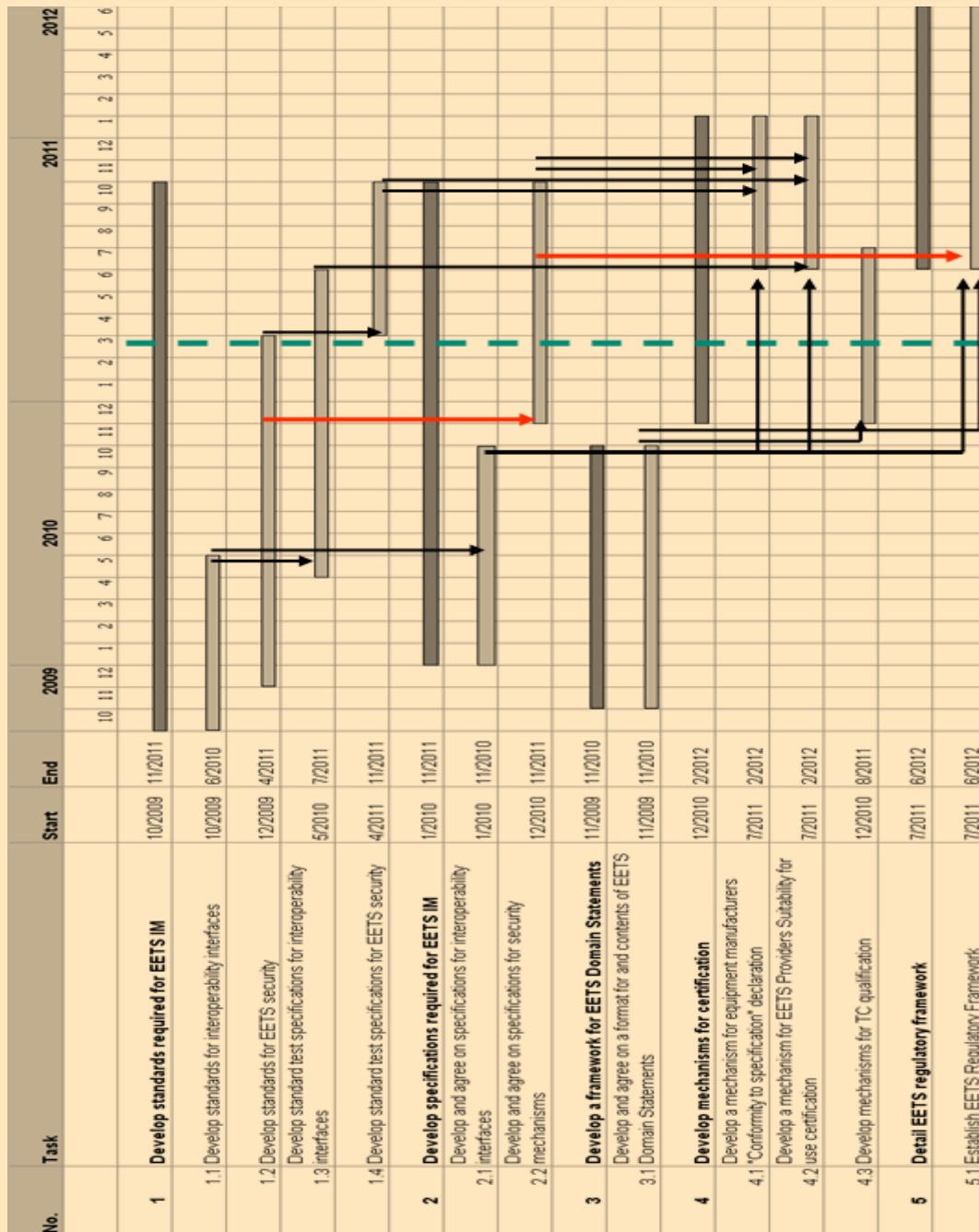


Figure 4 EETS IM Implementation GANNT

Legend

Red arrows indicate dependencies and critical timeline

Black arrows indicate dependencies

Dotted line indicate EC 18 months review

5. Stakeholders in establishing EETS IM

5.1. Identifying the stakeholders

Based on CESARE IV report D 2.1, report D 3.1 has provided a thorough analysis of existing and future stakeholders and their roles in EETS Interoperability Management. When mapping these stakeholders with the processes defined for the roadmap (see annex), the required actions presented in the table on the next page are found. Where an action is required, details on the requested engagement are presented in the following section. Where no action is expected, a short motivation is provided, please note that the table does not describe the stakeholder's relevance to EETS, but to the specific actions defined in the roadmap. As described in report D 3.1 all stakeholders listed are relevant for EETS operation.

Stakeholder	Existing	Roadmap action required	Motivation
Toll Chargers (TC)	Yes	Yes	
EETS Providers (EP)	No	No	No organisation available
Equipment manufacturers	Yes	Yes	
Service Users	(No)	No	No Service Users available
European Commission	Yes	Yes	
National Governments of Member States	Yes	Yes	
European and national courts of justice	Yes	No	Not involved in roadmap processes
Standardization Bodies	Yes	Yes	
Comité Télépéage (permanent version of the existing one)	(Yes)	Yes	
National Regulatory Authorities	Yes	No	Not involved in roadmap processes
Conciliation Bodies (where separate from National Regulatory Authorities)	No	No	No CBs yet appointed for EETS and it is not expected that EETS will require a specific conciliation mechanism.
Coordination Group of EETS National Regulatory Authorities/ Conciliation Bodies	No	No	No organisation available
TC Advisory Forum	No	(No)	Their organisation is yet to be decided
EP Advisory Forum	No	(Yes)	Organisation not established
Notified Bodies (NB) for EETS	No	No	Only Coordination Group of Notified Bodies relevant
Coordination Group of Notified Bodies	No	Yes	

5.2. Summary of stakeholders roles in the realization of EETS Interoperability Management

Considering the detailed process descriptions (Annex 1), the processes have been allocated to stakeholders according to the table below:

Stakeholder	Process id	Content
National Governments	All	Institutional support to roadmap processes
Comité Télépéage (CT)	5.1	Required participation in decision process
CEN	1.1, 1.2, 1.3, 1.4	Proceed with and finalize standardisation work
Coordination Group of Notified Bodies, in cooperation with EC and CT	4.1	Develop a mechanism for manufacturers "Conformity to Specification" declaration
EC	1.2, 1.3, 1.4, 2.1, 2.2	Finance Project Teams for standardisation work, and support by contracting experts team for developing the EETS specification
	5.1	Manage the formal processes for a second Decision
Member States	2.1, 2.2	Initiate and coordinate work on EETS Specifications (together with Toll Chargers and potential EETS Providers)
	3.1	Develop a framework for EETS Domain Statements (shared with Toll Chargers and potential EETS Providers)
	4.2	Develop a mechanism for EETS Providers Suitability for Use declarations (shared with TC and potential EETS Providers)
	4.3	Develop a mechanism for Toll Charger qualification (shared with Toll Chargers)
Toll Chargers	2.1, 2.2	Develop EETS Specifications (shared with Member States and potential EETS Providers)
	3.1	Develop a framework for EETS Domain Statements (shared with Member States and potential EETS Providers)
	4.2	Develop a mechanism for EETS Providers Suitability for Use declarations (shared with potential EETS Providers)
	4.3	Develop a mechanism for Toll Charger qualification (shared with Member States)
EP Advisory Forum (potential EETS Providers)	2.1, 2.2	Contribute to EETS Specifications (shared with MS and TC)
	3.1	Contribute to a framework for EETS Domain Statements (shared with MS and TC)
	4.2	Develop a mechanism for EETS Providers Suitability for Use declarations (shared with TC)
Equipment Manufacturers	2.1, 2.2	Contribute to EETS Specifications
	4.1	Contribute to manufacturers "Conformity to specification" declaration

Additional stakeholders (listed or not listed) can also be included in the work. The table above indicates key participants.

6. Conclusions – Actions ahead

6.1. The roadmap context

The EETS IM Roadmap presented in this report defines a series of inter-dependant processes that will enable the foundation for EETS IM to be available by mid 2012.

The roadmap is based on a set of important prerequisites:

EETS specifications and key procedures are confirmed through binding agreements and regulations. It is compulsory for EETS stakeholder to adhere to agreed specifications. Legal action can be sought against a stakeholder that does not comply. CESARE IV sees the need for a second EU Decision to achieve this status of specifications as there are clear advantages with the required procedures and organisations already in place.

Member States and the EC adhere to legislation without further arrangements

We must expect that MS and the EC adhere to the decisions taken without further arrangements needed. This concern e.g.:

- appointment of Notified Bodies and setup of their coordination mechanism
- management of conflict resolution from EETS operation

Responsibilities relating to EETS IM are defined in regulations

This means that there is no need for supervision from stakeholders outside established contracts to monitor compliance with specifications etc. Such monitoring falls into the legal responsibilities of authorities concerned.

6.2. Summary of stakeholders key short term actions (now)

In the following summary, ASECAP is considered to represent Toll Chargers and the Stockholm Group to represent Member States. As this representation is not fully coherent with the actual roles of these organisations, the allocation of tasks below shall be seen as indicative. The following actions have been identified as necessary in the very short term in order to enable EETS IM implementation in accordance with the roadmap:

- CEN should proceed with the definition of the concluding work item on “Secure Monitoring” to allow for standardisation work on this important subject to commence
- The EC needs to coordinate and finance project teams to carry out standardisation related to EETS security and related test procedures
- The EC needs to develop and finance platforms to ensure that all stakeholders are able to contribute to the development of EETS specifications
- The Stockholm Group, ASECAP and potential EETS Providers should engage (i.e. try to find all possible measures to support) in the completion of the interface standardisation work and take the initiative to the development of specifications and profiles related to (among others) the ISO 12855 standard

- The Stockholm Group, ASECAP, potential EETS Providers and other relevant stakeholders should identify and proceed with those elements of the EETS specification that are required for getting EETS IM in place but not dependant on standards.
- ASECAP and the Stockholm Group, supported by technical expertise, should develop and agree on a format for and contents of EETS Domain Statements. The first step to be concluded in a few months
- The European Commission should proceed with the establishment of the Coordination Group of Notified Bodies as this group has a key task in the preparation of the certification process

Following these immediate actions, the roadmap identifies follow up actions and additional actions to be taken in the next two years.

6.3. Measures outside EETS IM that will speed up and facilitate EETS implementation

Besides the measures described above which are considered elements in the implementation of Interoperability Management, additional measures should be taken to facilitate the implementation of EETS:

Support establishment of TC clusters

Examples from DSRC based systems indicate that EETS Europe-wide implementation will be facilitated by clusters of cooperating Toll Chargers. Existing clusters could be put forward as “Best Practise” and outreach efforts made, through e.g. ASECAP and the Stockholm Group, to support extension of existing clusters and the establishment of new.

Outreach activities on Best Practise

EETS implementation is hampered by the absence of good examples and best practise on interoperability agreements. ASECAP and the Stockholm Group together with potential EETS Providers should take the initiative to the development of “example agreements” that can function as starting point for contractual discussions to follow. Such examples could demonstrate different approaches and support in finding suitable business models for EETS.

Preparation of the 18 months review

The 18 month review will constitute an important milestone in the implementation of EETS as it will provide an opportunity for correctional and supporting activities to be identified and initiated. The EC should early in this process liaise with Toll Chargers (through ASECAP and the Stockholm Group) in order to outline and plan the 18 month review to ensure its proper execution with an as early delivery as possible.

Annex 1: Sub-process description

Details of the sub-processes defined for IM implementation are identified in the following pages. Each sub-process is described by the following characteristics:

Description

This field provides an overview of the content of the activity: Its current status, its dependencies and what needs to be done.

Start

This field indicates a tentative starting time for the process. See below!

End

This field indicates when results are available that will allow for dependant processes to start. The process as such may require additional time to be formally concluded, but the assumption is that (provided good faith) activities can start when good-enough results from previous processes are available.

Required Process Input

A process may be dependant on input from activities also outside the roadmap. Such dependencies are indicated in this field together with intra-roadmap dependencies.

Process Output

What the process will deliver.

Dependencies

This field describes how the process is dependent on output from other processes to start, and whether the process will generate output that is critical for following processes.

Governance

Governance identifies the key stakeholder in the process. This stakeholder should carry the responsibility to initiate and govern the work needed in the process.

Priority

Priority 1 indicates that the process is included in the primary critical timeline. Priority 2 indicates that the process is included in the secondary critical timeline. Priority 3 indicates that the process does not appear in a critical timeline.

1.1	Develop standards for interoperability interfaces
Description and methodology <p>This process includes the actions required to finalise the standards that are needed for development of the EETS specifications.</p> <p>ISO 12855, Electronic fee collection - Information exchange between EETS Providers and Toll Chargers, is a key standard for interoperability. It includes the messages and attributes to be used in the back office communication between Toll Chargers and EETS Providers.</p> <p>Standard 12855 is currently being reviewed which is expected to last until February 2010. The finalisation of the standard can be expected somewhere in mid 2010.</p> <p>Parallel to ISO 12855, ISO is currently working on 13141, Localization Augmentation, and 12813, Compliance check for Satellite Systems. These two standards relate to the DSRC air interface between OBUs and roadside equipment using DSRC communication.</p> <p>Also these standards have reached a review stage and can be expected to be finalised within the time frame of the more critical ISO 12855.</p> <p>EN15509 is a stable standard defining the DSRC communication between OBE and RSE for charging transactions in DSRC-based systems. It must be ensured that all EETS domains which use 5,8 GHz technology are fully compliant with this standard.</p> <p>As regards ISO 17575, this standard defines an internal interface for the EETS Provider's equipment, namely the interface between his front-end and back-end equipment, and is not vital for the establishment of EETS IM. It is however of high importance for the manufacturers (e.g. OBU) which will rely on this standard for systems design and it may provide valuable elements for the ISO 12855 interface definitions.</p> <p>For all standards, appropriate test standards need to be developed. Work on this is ongoing in CEN TC 278 WG1.</p>	
Start:	Work is ongoing.
End:	If an EETS specification could be established without a more detailed security framework, or if the security standardisation could be speeded up, this process will be time critical. Availability to a stable draft of ISO 12855 / 13141 / 12813 should be targeted for 2010-06-01.
Required process input:	Benefits from finalisation of ISO 17575, but is not dependent.
Process output:	A stable draft of 12855 / 13141 / 12813, which is a prerequisite for EETS specifications.
Dependencies:	Backwards: None Forwards: Prerequisite for 1.3 and 2.1
Governance:	CEN
Priority:	2

1.2	Develop standards for EETS security
Description and methodology <p>The task to develop a Security Framework standard has been accepted as a provisional work item by TC 278. No project team has yet been established (or financed), which means that the standard may take considerable time.</p> <p>An additional work item on “Secure Monitoring”, currently postponed by CEN, aims at defining:</p> <ul style="list-style-type: none"> a) how to make use of a tamper proof hardware device (e.g. smart card) and freezing of records in the OBU for the purpose of compliance checking. b) how to check after receiving a toll declaration whether or not the (unobtrusive) observed presence of a vehicle in a toll domain has been correctly accounted for in the declaration. <p>This standard (or rather its security specification) is critical to certification of equipment and organisations for EETS. The work item has been proposed but not yet adopted by TC 278.</p> <p>The security mechanisms in EETS may seem to be critical for EETS, but can be looked upon as subject to an evolutionary process. As threats evolve, counter-mechanisms will always need to be established. Hence, early implementations of EETS may be considered with less security than later implementations, which have to be accounted for in the development. Nevertheless, even the first versions of the proposed standards should deal already adequately with currently known threats and measures.</p> <p>Security aspects will also have to be accounted for in EETS specification task which can work in parallel.</p>	
Start:	For the Security Framework 2009-09-11 (work item adopted) For Secure Monitoring 2010-03 at the earliest (the next CEN meeting)
End:	Early draft available 2010-07-01, mature draft 2010-12-01, stable draft 2011-04-01, very sensitive to EC funding of project teams. Estimated time schedule is based on this, as voluntary work will take much more time.
Required process input:	Security considerations from EETS specification work
Process output:	Security standards required for EETS security specification
Dependencies:	Backwards: None Forwards: Prerequisite for 1.4 and 2.2
Governance:	CEN
Priority:	1

1.3	Develop standard test specifications for interoperability interfaces
Description and methodology <p>Standard test specifications are required for the certification process within EETS, concerning as well EETS Providers Suitability for Use declarations as manufacturers Conformity to Specifications declarations.</p> <p>While test standards are already available for the DSRC interface through EN 15509, test standards related to ISO 12855 can start after availability to stable draft of this standard.</p>	
Start:	2010-05-01
End:	2011-07-01
Required process input:	Stable draft from ISO 12855
Process output:	Stable draft of standards, which will be available 2011-07-01
Dependencies:	Backwards: 1.1 Forwards: 4.2
Governance:	CEN
Priority:	3

1.4	Develop standard test specifications for EETS security
Description and methodology <p>Standard test specifications for EETS Security are required for the certification process within EETS, concerning as well EETS Providers Suitability for Use declarations as manufacturers Conformity to Specifications declarations.</p>	
Start:	2011-04-01
End:	2011-11-01 (stable draft)
Required process input:	Security standards
Process output:	Stable draft of test standards
Dependencies:	Backwards: 1.2 Forwards: 4.1, 4.2
Governance:	CEN
Priority:	3

2.1	Develop and agree on specifications for interoperability interfaces The EETS Specifications
Description and methodology <p>This process includes the definition of and agreement on an implementation of the necessary standards for EETS Interoperability interfaces into EETS specifications for back office communication between EETS Providers and Toll Chargers and for short-range communication between the OBU and roadside or mobile equipment.</p> <p>The process will also identify issues that are not covered by the standardisation work and need to be included in the EETS specifications.</p> <p>The development of these specifications is not expected to be a particularly complicated technical task. More complicated is the agreement procedure, where a number of options are available. Considering the need for agreed specifications, making them compulsory through a second EC Decision seems to be the most relevant. This will however require a rather time-consuming decision process.</p> <p>The work requires a task force with Member States and stakeholder partners (e.g. ASECAP, Stockholm Group), equipment manufacturers (e.g. RCI partners) and EETS Providers.</p> <p>Preparatory work to establish the required organisation, the financial support and an agreed work plan should be initiated as soon as possible. The first task would be to clarify whether harmonisation work additional to what is provided through CEN is required.</p>	
Start:	2010-01-01
End:	Draft final 2010-11-01
Required process input:	The work can start when mature results from process 1.1 (draft ISO 12855 standards) are available. Input from operational and planned systems are required in order to validate result.
Process output:	An EETS Interface Specification. Required for process 4.1 and 4.2 (certifications)
Dependencies:	Backwards: 1.1 Forwards: 4.1, 4.2, 5.1
Governance:	Stockholm Group (MS) should take the initiative.
Priority:	2

2.2	Develop and agree on specification for security mechanism
Description and methodology <p>This process includes the definition of and agreement on an implementation of the standards on an EETS security mechanism that follows from process 1.2</p> <p>This is a sub-task of 2.1 but separated due to different input dependencies. Organisations and work plans for processes 2.1 and 2.2 should be coordinated. Complementary expertise on EETS security has to be brought in, preferably also expertise from equipment manufacturers.</p> <p>The specification and agreement processes will be coordinated with 2.1, as the agreements on 2.1 and 2.2 need to be simultaneous.</p>	
Start:	2010-12-01 (work can start when a mature draft of the security standard is available)
End:	There will be a mature draft by 2011-07-01. End by 2011-11-01
Required process input:	Draft security standards, Equipment manufacturers view
Process output:	An EETS Security Specification. Required for process 4.1 and 4.2 (certifications)
Dependencies:	Backwards: 1.2 Forwards: 4.1, 4.2, 5.1
Governance:	Stockholm Group (MS) should take the initiative.
Priority:	1

3.1	Develop and agree on a format for and contents of EETS Domain Statements
Description and methodology <p>Work on the content of EETS Domain Statements (EETS DS), as drafted by the EC Decision, has been initiated through the Application Guide Working Group, and input has also been provided through CESARE IV (D 3.1).</p> <p>As the EETS DS must be subject to restrictions regarding contents to safeguard interoperability, the agreement on the content of the EETS DS should result in a model framework for the Statement.</p> <p>The process will require a task force consisting of representatives from Toll Chargers/MS and potential EETS Providers who shall detail the possible contents of an EETS Domain Statements.</p> <p>Taking into account the time available, two versions of the framework is expected to be published:</p> <p>A first version, based on the work on the Application Guide, to allow for TC and MS to respond within the 9 month period of the Decision coming into force, and a second version that is based on the EETS specifications. Whether the latter needs to be subject to regulation through a future EC/CT decision shall be decided upon experience from the implementation process. Hence it is not recommended to be included in a second decision together with the EETS specifications.</p> <p>The work should start as soon as possible to allow for an interaction between the EETS DS and the EETS specification to ensure that the necessary aspects of the EETS DS are included in the specification work.</p>	
Start:	2009-11-01 (i.e. now)
End:	Version 1 available 2010-05-01
Required process input:	Draft Application Guide, Decision
Process output:	Framework for EETS Domain Statements
Dependencies:	Backwards: Forwards: Conditionally 5.1 (if found needed, it shall be subject to a future regulative process)
Governance:	Stockholm Group (MS) together with ASECAP
Priority:	2

4.1	Develop a mechanism for equipment manufactures “Conformity to specification” Declaration
Description and methodology <p>Certification of Interoperability Constituents is a critical process in the EETS implementation. Certification is made by self-assessment or through Notified Bodies, and has to be based on a harmonised set of specifications and test procedures.</p> <p>This task will provide a comprehensive framework for the certification procedure to be applied by Notified Bodies and / or manufacturers of interoperability constituents.</p> <p>The work should be carried out by a task force with representatives of Notified Bodies concerned together with experts on test standards and specifications. Input and participation by manufacturers is recommended. It would be beneficial to have the mechanism included as part of the regulated specifications. As this process is in the end of the timeline, it would delay giving regulative force to the EETS specification which is time critical. Hence this mechanism could be subject to a future decision (e.g. together with the EETS Domain Statements) if found required.</p> <p>We have a good basis for writing specifications for the OBU. Test standards for this are almost ready, and manufacturers have mature development proposals.</p>	
Start:	Start 2011-07-01. Dependent on availability of Security test standard.
End:	2012-02-01
Required process input:	Security Framework, test standards for air interfaces and localization augmentation
Process output:	Toolbox for certification of EETS Interoperability Constituents
Dependencies:	Backwards: 1.3, 1.4, 2.1, 2.2 Certification, 5.1 (if found required, suitable for future regulation)
Governance:	Could be a subject for the Coordination Group of NB. Development can be made by stakeholders e.g. through a RCI 2-project
Priority:	3

4.2	Develop a mechanism for EETS Providers Suitability for Use certification
Description and methodology <p>The EETS Providers could either turn to a TC (or a cluster of TCs) or a NB for the Suitability for Use certification. This is where the back office systems and interfaces are tested (all the way down to the end user invoice) and should prove to work according to requirements, as well as the OBU behaviour in the TC's system (end-to-end).</p> <p>Interoperability will require Toll Chargers to agree on certain Suitability for Use test procedures, and to provide this as guidance to Notified Bodies that may be responsible for the test procedure, and to EETS Providers for their preparation.</p>	
Start:	2011-07-01
End:	2012-02-01
Required process input:	Specifications based on 12855, final versions of EETS DS and security framework
Process output:	Framework for EETS Providers Suitability for Use certification to be applied by Notified Bodies and/or TCs
Dependencies:	Backwards: 2.1, 2.2, 1.3, 1.4, 3.1 Forwards: Certification
Governance:	ASECAP and Stockholm Group (Toll Chargers)
Priority:	3

4.3	Develop mechanisms for TC qualification
Description and methodology <p>Qualification of Toll Chargers is not regulated, but CESARE IV has found it relevant to provide support to the IM procedure by developing guidelines for the Member States to be used with the registration of TCs. Also Toll Chargers will benefit from the availability of such guidelines as they will provide information on requirements to be met for appropriate registration.</p> <p>The qualification of the TC comprises administrative issues like the publication of an EETS Domain Statement, and measures to confirm compliance with EETS specifications of the used technical equipment (interoperability constituents) and applied procedures.</p>	
Start:	2010-12-01
End:	2011-08-01
Required process input:	EETS Specifications, EETS DS Framework
Process output:	Guidelines for TC Qualification
Dependencies:	Backwards: 3.1 Forwards: Qualification (Registration)
Governance:	Stockholm Group (MS)
Priority:	3

5.1	Develop EETS Regulatory Framework
Description and methodology <p>This process will compile the output from sub-processes on EETS specifications, EETS Security specification and Framework for EETS Domain Statements into a regulatory framework for compulsory use by EETS stakeholders. The result should be a second EC Decision on EETS</p> <p>This process contains two parts: The first part (5 months) where MS and the EC develop and agree on the decision which will be confirmed by CT. Then 6 months in regulatory process of the EC.</p>	
Start:	2011-07-01
End:	2012-06-01
Required process input:	Stable draft of EETS Specifications, Framework for EETS Domain Statement
Process output:	Decision on compulsory use of defined specifications and procedures
Dependencies:	Backwards: 2.1, 2.2, 3.1 Forwards: EETS IM Operation
Governance:	EC, CT
Priority:	1

Annex 2: Glossary and abbreviations

Glossary

The following Terms are used in the document.

Term	Definition
Certification	In the directive and the draft decision this word refers to all compliance checks with EETS rules, for all stakeholders and equipments. Regarding the vocabulary, the present report is more specific: <ul style="list-style-type: none"> - Equipments (OBE, RSE and back office systems) are “Certified” - EETS Providers are “Approved” - Toll Chargers are “Qualified” - Notified Bodies are “Appointed”
EETS Provider (EP)	A legal entity (or group of legal entities) providing the European Electronic Toll Services (EETS) on one or more toll domains to Service Users, for one or more categories of vehicles
Enforcement	The process of compelling observance of a law, regulation, etc. (EN ISO 17573)
EETS toll transaction	The data describing the charged road use concluded by the Toll Charger according to national and local law taking into account the toll declarations
Interoperability	The ability of systems to provide services to and accept services from other systems and to use the services so exchanged to enable them to operate effectively together (EN ISO 17573)
Interoperability Manager (IM)	In the EETS context, the Interoperability Manager (IM) is an entity or an organisation (i.e. a set of entities), which plays the role of managing the interoperability of the European Electronic Tolling Service, including in their functions the governance and other main components of the Service
Notified Body	Body in charge of certain parts of the equipments and stakeholders certification/qualification/approval
On-Board Equipment (OBE)	Equipment fitted within or on the outside of a vehicle and used for toll purposes
Role	Identifier for a behaviour, which may appear as a parameter in a template for a composite object, and which is associated with one of the component objects of the composite object Roles defined in the European Electronic Service: Interoperability Manager (IM), Toll Charger (TC), EETS Provider (EP) and Service User (SU)
Service User (SU)	A generic term used for the customer of an EETS Provider, one liable for toll, the owner of the vehicle, a fleet operator, a driver etc. depending on the context (EN ISO 17573)
Toll	A charge, a tax, a fee, or a duty in connection with using a vehicle within a toll domain (EN ISO 17573)

Term	Definition
Toll Charger (TC)	A legal entity (or group of legal entities) in charge of the Toll Charging role, including amongst others, the operation of toll domains, collection of tolls and enforcement tasks
Toll Context Data	A set of EETS relevant data related to a certain Toll domain. This information is expected to be loaded in the OBE in tolling systems based on GSM/GPS technology
Toll Domain	An area or part of a road network where a toll regime is applied (EN ISO 17573)

Abbreviations

The following abbreviations can be used in this document.

CEN	Comité Européen de Normalisation
CESARE	Common Electronic Fee Collection System for a Road Tolling European Service
CtTp	Comité Télépéage
DSRC	Dedicated Short Range Communications
EFC	Electronic Fee Collection
EETS	European Electronic Tolling Service
EP	EETS Provider
ETC	Electronic Toll Collection
ETSI	European Telecommunication Standardization Institute
GNSS	Global Navigation Satellite Systems
GPS	Global Positioning System
GSM	Global System for Mobile Communications
HGV	Heavy Goods Vehicle
ISO	International Organization for Standards
NB	Notified Body
OBE	On-Board Equipment
RSE	Road Side Equipment
SG	Stockholm Group
SU	Service User (EETS Service User)
TC	Toll Charger (EETS Toll Charger)
UMTS	Universal Mobile Telecommunications System
WP	Work Package

Annex 3: Standardisation status overview

Information Exchange between roles – EN ISO 12855

This standard concerns information exchange between the roles “Toll Charger” and “Service Provider”, which is an essential element of the EETS definition. A project team (PT 24) has been established in order to finalize the rather voluminous work. The draft standard had been submitted to the national standardisation bodies for CEN enquiry on November 2009.

Security

The task to develop a Security Framework standard has been accepted as a preliminary work item by TC 278. No project team has yet been established (or financed).

An additional Work Item on “Secure Monitoring” has been discussed and will be integrated with the proposed Trusted Recorder work item. There is however no decision taken by the WG.

Standards relevant for autonomous systems

Application Interfaces for Autonomous EFC – TS 17575

The GNSS/CN standard (TS 17575) is divided into four parts and work is ongoing on all these:

Part 1: Charging

Part 2: Communication

Part 3: Context Data

Part 4: Roaming

Project Team 20 is currently working on finalizing the standard and good progress has been made. Parts 1&2 have been finalized and are out for vote. Parts 3&4 have been circulated for Technical Committee comments and final versions will be available during autumn 2009.

Compliance Check Communication – TS 12813

Compliance Check Communication (CCC) deals with a DSRC interface for roadside check of OBE as to whether correct payments have been made or if the OBE is working properly. Project Team 22 has been developing the standard which now has been accepted and is ready for publishing.

Test Standard for CCC – TC 13143-1/2

This is a test standard (or “compliance assessment”) for TS 12813 in two parts:

Part 1: Test Suite Structure and Test Purposes

Part 2: Abstract test suite

The work is carried out by Project Team 23, and a draft for Part 1 has been circulated for comments.

Localisation Augmentation Communication – TS 13141

Localisation Augmentation Communication (LAC) deals with localisation support through DSRC. The standard is very similar to the CCC standard (above), and has been developed by the same Project Team 22. A final version of the standard is now out for voting

Test standard for LAC- 13140-1/2

This is a test standard (or “compliance assessment”) for TS 13141 in two parts:

Part 1: Test Suite Structure and Test Purposes

Part 2: Abstract test suite

The work is carried out by Project Team 23, and a draft for Part 1 is circulated for comments.



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