APPLICATION FORM
for Community financial aid in the field of
the trans-European transport network

Multi-annual programme 2007-2013 – Field 4
CALL FOR PROPOSALS 2007

ANNEX

Minimum data and information to be considered in ERTMS related projects
Introduction

Two main categories of activities are to be funded under the TEN budget under the ERTMS heading: trackside activities and on board activities. The later can be split in two sub categories, prototype and series.

This annex contains three parts and each part specifies the minimum data and information to be considered.

1. Trackside related projects

   If the situation is different for different track sections, please indicate it clearly. For projects covering several lines sections located in several countries it maybe relevant to give the relevant information per lines sections or countries.

1.1. Project partners and project management

   - National Administration, Organisation, Undertaking, Body, etc… involved.
   - Provide a short description of the main actors involved in the project.
   - Project Management Structure.
   - Main milestones (if possible described through a Gant Diagram containing appropriate sub activities and related milestones), including testing, validation and commercial put into service. Indicate also the project status at the date of filling in this form (not started, design, installation, test …). Give a brief overview of the work already carried out (main activities, costs related to these activities etc.).
   - Description of the main risks to the projects, in particular as regards delays, availability of funds, and interoperability. If any, please specify the procedures put in place to mitigate these risks.

1.2. Main characteristics of the line

   - Accurate description of the line (starting point, ending point, main station and specific points along the line), including map.
   - Type of line (High Speed, Conventional, etc…). If the project is made of several line sections, please give the relevant information per line section.
   - Length of the line (please specify whether it is single track, double track or other type of track).
   - Traffic : specify whether the line is dedicated to freight, passengers or mixed traffic. Please give a rough indication of the quantity of traffic (passenger km, tonne km, trains per day etc.).
   - Additional relevant characteristics (such as maximal speed according to the types of trains, gauge, energy system, width of contact shoe (pantograph), capacity in trains per day, maximum train mass, maximum train length).
1.3. Technical information

In case the required information is not yet available, please indicate if the questions will be addressed (and how?) or not in the frame of the project. In case the questions will not be addressed please indicate why.

- **ETCS level** (specify the level or levels used, indicate if the lateral signalling and/or national speed control system will be kept, for which purpose and until which date. Indicate whether ETCS infill will be used, the infill device used and if trains will need to be equipped with infill devices).

- Short assessment of the reasons underpinning the choice of the ETCS level. In particular present a short analysis of the advantages and drawbacks of different technical possible solutions (including ETCS level 1, ETCS level 1 with infill, ETCS level 2).

- Point in **time** when a train, only equipped with ETCS 2.3.0 be allowed to run on the line for commercial services.

- Describe all **additional technical information** that could be used as track access conditions such as:
  - management of cryptographic keys, and management of other parameters that may change during system life cycle.
  - "specific cases", "optional functions" and/or derogations applicable/relevant for the project. (See TSI CCS & 7.4 and 7.2.6 - detail the legal basis, give evidence of justification and detail impact on interoperability, mitigation/migration strategies).

- **Maintenance**: Provide details as where the provisions are included in the contracts, for how many years, covering which parts/subsystems, software/hardware etc... Are Line Replaceable Units (LRU) defined, is there any possibility of procurement of LRUs from different suppliers.

- **Management of system evolution**: Provide details how the provisions are contractually defined. Indicate the role/responsibility of user, customer, supplier, etc., and, if relevant specify the process to revalidate/re-authorise service.

- **Public specifications**: list all the specifications (if any) and deliverables that will be developed in the course of the project and will be made available in the public domain. For each specification detail the type (functional, performance, test specification, etc.) and the scope (interface, component, assembly, etc.).

1.4. Interoperability tests, certification and notified bodies

- **Interoperability tests**: Detail all relevant test activities foreseen until commercial putting into service. In particular, for each test activity indicate responsible/entities involved/deliverables. Please specify if any reference lab will be or has been already involved in the tests. Indicate if some test has already been carried out, specify (date, place, results, ...). Please explain if any cross tests involving several countries are foreseen (tests involving locomotives running under ETCS supervision in several countries).

- **Involvement of reference laboratories**: with a view to increase the cost effectiveness of laboratory testing of ETCS on board computers, it is foreseen to specify a given format for including the parameters and the description of all ETCS lines in Europe. The data to be supplied in a commonly agreed format will in particular include the locations of the balises, the telegrams sent by the balises and RBCs, the location of the switching points and the
relevant test cases and sequences. Please indicate if it foreseen / accepted to provide such data in the commonly agreed format in the frame of the project.

- **Certification procedure**: Specify the Member State(s) involved and, for each of them, detail the process to be applied, clearly referencing the appropriate legislation, rules. Identify the responsible body. List the deliverables: authorisation to enter in service, acceptance, etc... Please indicate the procedures put in place in order to avoid redundancy in ERTMS related tests (acceptance of similar tests already carried out in another Member State).

- **Activities of the Notified Bod(i)es**: Detail the scope of the work that is (will be) contractually specified for the Notified Bodi(es) (reference specifications, deliverables, use of independent laboratories, ...).

## 2. Prototypes

If the application form covers different prototypes, give the relevant information for each prototype.

### 2.1. Project partners and project management

- National Administration, Organisation, Undertaking, Body, etc... involved.
- Provide a short description of the main actors involved in the project.
- Project Management Structure.
- Main milestones (if possible described through a Gant Diagram containing appropriate sub activities and related milestones), including testing, validation and commercial put into service. Indicate also the project status at the date of filling in this form (not started, design, installation, test ...). Give a brief overview of the work already carried out (main activities, costs related to these activities etc.).
- Description of the main risks to the projects, in particular as regards delays, availability of funds, and interoperability. If any, please specify the procedures put in place to mitigate these risks.

### 2.2. Main characteristics of the prototype

- Accurate **description of the type** of locomotive/train set. (Indicate the identification number, code or other identification type. If different identifications are used in different countries please provide them).
- **Number of ETCS equipment** on board the prototype.
- **Number of units to be potentially retrofitted**: specify the number of units currently in operation that could re-use the ERTMS installation solutions defined by the project. When known, please specify also their owners. Indicate approximately the age of these units (when have these locomotives/trainsets been put into service), as well as their main characteristics as regards signalling systems.
- **Country packages**: In case the locomotives exist in several "country packages" (e.g. with different signalling systems or technical characteristics) please indicate the characteristics of the prototype subject to the study and give a brief assessment of the usefulness of this work for prototyping other "country specific configurations" of this locomotive. When possible, indicate the number of locomotives for the different country packages.
- **Specify the number of units to be potentially retrofitted**: If known, indicate more particularly the number of locomotives of that type due to be retrofitted before 2015 on the basis of this prototype. How firm is the commitment to retrofit these locomotives? (give any relevant information, such as date for tenders, tentative date for commercial applications etc.). Provide all known information on the cost for retrofitting these locomotives.

- Please indicate if the locomotive is dedicated to freight, passengers (high speed/conventional) or can be used for both.

- **Current geographical use**: Specify the parts of the European railway network where every type of unit mentioned above are currently authorised to service.

- Please indication **additional relevant characteristics** (such as maximal speed, energy systems, pantograph information...).

2.3. **Technical information**

In case the required information is not yet available, please indicate if the questions will be addressed (and how?) or not in the frame of the project. In case the questions will not be addressed please indicate why.

- **ETCS level**: will the prototype be equipped only for level 1 or also for level 2? Will it be equipped with infill devices and which ones? Indicate the signalling systems that will be present on board.

- Describe all **additional technical information** that could be relevant in the frame of the project, such as:
  - management of cryptographic keys, and management of other parameters that may change during system life cycle.
  - "specific cases", "optional functions" and/or derogations applicable/relevant for the project. (See TSI CCS & 7.4 and & 7.2.6 - detail the legal basis, give evidence of justification and detail impact on interoperability, mitigation/migration strategies).

- **Maintenance**: Provide details as where the provisions are included in the contracts, for how many years, covering which parts/subsystems, software/hardware etc... Are Line Replaceable Units (LRU) defined? Is there any possibility of procurement of LRUs from different suppliers?

- **Management of system evolution**: Provide details how the provisions are contractually defined. Indicate the role/responsibility of user, customer, supplier, etc., and, if relevant specify the process to revalidate/re-authorise service. Do the contract cover the migration in an appropriate time to posterior version of the specification (version 3)?

- **Public specifications**: list all the specifications (if any) and deliverables that will be developed in the course of the project and will be made available in the public domain. For each specification detail the type (functional, performance, test specification, etc.) and the scope (interface, component, assembly, etc.).

- **Retrofit of remaining locomotives/train sets**: (questions only relevant in case all units that could be potentially retrofitted (as previously indicated) are not all retrofitted in the frame of this project). According to your knowledge, is it foreseen to retrofit these remaining locomotives and when? How will these potential retrofit activities benefit from the prototyping work? In particular, is there any commitment (or is it planned to request a
commitment, for example as an option in the contract) from the manufacturer on a maximum price for the retrofit of the remaining locomotives?

2.4. Interoperability tests, certification and notified bodies

- **Interoperability tests**: Detail all relevant test activities foreseen until commercial putting into service. In particular, for each test activity indicate responsible/entities involved/deliverables. Please specify if any reference lab will be or has been already involved in the tests. If some test has already been carried out, specify (date, place, results, ...). Please explain if any cross tests in several countries is foreseen (tests indifferent countries on lines equipped with ETCS).

- **Certification procedure**: Indicate the number of countries in which the prototype shall be certified. Specify the countries involved and, for each of them, detail the process to be applied, clearly referencing the appropriate legislation, rules. Identify the responsible body. List the deliverables: authorisation to enter in service, acceptance, etc...

- **Activities of the Notified Bod(i)es**: Detail the scope of the work that is (will be) contractually specified for the Notified Bod(i)es (reference specifications, deliverables, use of independent laboratories, ...).

3. Series

If the application form covers different types of locomotives/train sets, give the relevant information for each type of locomotive/train set.

3.1. Project partners and project management

- National Administration, Organisation, Undertaking, Body, etc... involved.

- Provide a short description of the main actors involved in the project.

- Project Management Structure.

- Main milestones (if possible described through a Gant Diagram containing appropriate sub activities and related milestones), including testing, validation and commercial put into service. Indicate also the project status at the date of filling in this form (not started, design, installation, test ...). Give a brief overview of the work already carried out (main activities, costs related to these activities etc.).

- Description of the main risks to the projects, in particular as regards delays, availability of funds, and interoperability. If any, please specify the procedures put in place to mitigate these risks.

3.2. Main characteristics of the locomotive/train set

- Accurate description of the type of locomotive/train set. (Indicate the identification number, code or other identification type. If different identifications are used in different countries please provide them).

- **Number of ETCS equipment** on board the locomotive/train set.

- **Number of units to be retrofitted** in the frame of the project. Specify the number of units currently in operation that will be retrofitted in the frame of the project, the associated timing as well as the approximate age of these units, and their main characteristics as regards signalling systems. Indicate also other units that may be retrofitted in the frame of other projects, as well as known information on associated timing and costs.
– Please indicate if the locomotive is dedicated to **freight**, **passengers** (high speed/conventional) or can be used for both.

– **Current geographical use:** Specify the parts of the European railway network where every type of unit mentioned above are currently authorised to service.

– Please indication **additional relevant characteristics** (such as maximal speed, energy systems, pantograph information...).

### 3.3. Technical information

In case the required information is not yet available, please indicate if the questions will be addressed (and how?) or not in the frame of the project. In case the questions will not be addressed please indicate why.

– **ETCS level:** will the locomotive / train set be equipped only for level 1 or also for level 2? Will it be equipped with infill devices and which ones? Indicate the signalling systems that will be present on board.

– Describe all **additional technical information** that could be relevant in the frame of the project, such as:
  – management of cryptographic keys, and management of other parameters that may change during system life cycle.
  – "specific cases", "optional functions" and/or derogations applicable/relevant for the project. (See TSI CCS & 7.4 and & 7.2.6 - detail the legal basis, give evidence of justification and detail impact on interoperability, mitigation/migration strategies).

– **Maintenance:** Provide details as where the provisions are included in the contracts, for how many years, covering which parts/subsystems, software/hardware etc... Are Line Replaceable Units (LRU) defined? Is there any possibility of procurement of LRUs from different suppliers?

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– **Retrofit of remaining locomotives/train sets:** *(questions only relevant in case all units that could be potentially retrofitted (as previously indicated) are not all retrofitted in the frame of this project).* According to your knowledge, is it foreseen to retrofit these remaining locomotives and when? How will these potential retrofit activities benefit from the project? In particular, is there any commitment (or is it planned to request a commitment, for example as an option in the contract) from the manufacturer on a maximum price for the retrofit of the remaining locomotives?

### 3.4. Interoperability tests, certification and notified bodies

– **Interoperability tests:** Detail all relevant test activities foreseen until commercial putting into service. In particular, for each test activity indicate responsible/entities involved/deliverables. Please specify if any reference lab will be or has been already
involved in the tests. If some test has already been carried out, specify (date, place, results,...). Please explain if any cross tests in several countries is foreseen (tests indifferent countries on lines equipped with ETCS).

- **Certification procedure:** Indicate the number of countries in which the locomotives shall be certified. Specify the countries involved and, for each of them, detail the process to be applied, clearly referencing the appropriate legislation, rules. Identify the responsible body. List the deliverables: authorisation to enter in service, acceptance, etc...

- **Activities of the Notified Bod(i)es:** Detail the scope of the work that is (will be) contractually specified for the Notified Body(-ies) (reference specifications, deliverables, use of independent laboratories, ...).