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**ECORailS –
Energy efficiency and environmental criteria in the awarding of regional rail transport vehicles and services**



**Deliverable 12:
Pilot Applications Management Plan**

Version:
1
Status:
PU

Draft: Project manager WP4 Approval
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Acronym:
 ECORailS

Title:

Energy efficiency and environmental criteria in the awarding of regional rail transport vehicles and services

Distribution:

Partic N°	Participant name	Participant name short	Country code
CO	TSB Innovation Agency Berlin GmbH FAV – Transport Technology Systems Network	TSB FAV	DE
CB 2	Senate Department for Urban Development	SenStadt	DE
CB 3	Pro Rail Alliance	ApS	DE
CB 4	KCW GmbH	KCW	DE
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1. Introduction and project framework

1.1. WP4 activities and project framework

Work Package 4 aims to perform concrete tests where the ECORailS Guidelines are used to review or to simulate real awarding procedures. Four sites are involved in WP4:

1. Berlin (Germany);
2. Øresund (connection between Denmark and Sweden);
3. Timisoara (Romania);
4. Lombardy (Italy).

Each site will formulate an awarding text by integrating energy efficiency and environmental criteria into awarding documents which have already been used or could be used in real-life. The execution of the tests will be framed by a test methodology, which sets the procedures to engender feedback to the application aspects of the guidelines related to different regional conditions, common strategies (procedures) of awarding and usability for the involved administrations, and impacts to other stakeholders. It aims mainly to build up a closed, laboratory but realistic situation to enlarge feedback to the draft guidelines from a broader user group. Additional to the tests, in the best practice experiences the test application generates new and more complex behaviour among administrations and other involved participants (e.g. to engender feedback to the guidelines among participants of the User Platform with conditions differing from best practice tests or exposed to difficult conditions).

WP4 is structured in 3 tasks:

1. Common pilot applications management:

Aim of Task 1 is to deliver a common managerial approach for the 4 test sites. Each site, as stated in the ECORailS Work Plan, appointed a Site Manager, who is responsible for the organization and for the running of the test. He will support the involved administrations with the use of the guidelines as elaborated in the WP3 and WP6. The managerial approach, described in the present document – Deliverable 12 –, is to be used by the Site Managers to plan their activities so that a common schedule and comparable results can be achieved.

The main issues addressed by the Pilot Applications Management Plan are:

- the work schedule aspects (work distribution, time scheduling, etc.);
- the activities involved in the tests (test implementation management);
- the coordination and monitoring of the activities during the tests;
- the documentation of the tests and test results.

The duration of Task 1 is 15 months, starting from month 8 (December 2009). According to the Work Plan, the WP4 Leader ALOT will co-ordinate the implementation of the tests.

2. Preparation of the pilot applications including test methodology:

Task 2 aims to:

- define the main outcomes of the test applications;
- develop the contents of the applications: extract from WPs 2 and 3 data of essential legal, technical and market conditions and abstract criteria to be implemented in the awarding texts;
- adapt a process of tests: develop a realistic step-by-step concept for planning a awarding formulation and designing a sequence of methodological steps for test implementation.

The test methodology is described by Deliverable 13. It firstly has to assure a minimum common methodological approach for the 4 sites. This is needed to make ECORailS able to show in the four test sites that its general aim – the introduction of energy efficiency and environmental criteria in the awarding procedures – is feasible.

Then, Task 2 intends to set the base to involve actively internal and external partners in a common discussion about the results during the tests and to receive a broader feedback with varying perspectives of users and an additional optimization of the guidelines.

The duration of Task 2 is 5 months, starting from month 8 (December 2009).

3. Execution of the tests at the four sites:

Task 3 includes the whole period when the tests are implemented in the four sites, following the methodology given by Task 2 and the time schedule agreed in Task 1.

As mentioned before, the execution of the tests will be implemented as a formulation of text parts to be integrated into real life awarding documents. They will rest on a common basic profile (energy efficiency, emission reduction, train/seat*kilometre, types/number of services/rolling stock, etc.), in order to keep comparability, with specifications according to the features of each site. Energy efficiency and environment-related criteria will be integrated in the awarding documents basing on the goals which have been set as general objective of demonstration in ECORailS.

The four sites will test whether the indicators and measures collected in WP2 and WP3 and described, as Guideline, in Deliverable 20, (2nd draft of the Guidelines) can be easily and appropriately integrated in the awarding documents:

- direct indicators;
- indirect indicators;
- specific indicators (according to the definition given in the Deliverable 19 (1st draft of the Guidelines), p. 116);
- features and equipment of the vehicles to be used;
- stand-by and comfort functions;
- energy-efficient driving and driver training;
- CO2 emissions and other Greenhouse Gases;
- pollutants;

- noise;
- good-practice examples for energy-efficient regional rail passenger transport.

The duration of Task 3 is 12 months, starting from month 11 (March 2010).

Participant short name	Task 1	Task 2	Task 3
TSB FAV	X	X	X
SenStadt		X	X
ApS	X	X	X
TSY		X	X
TFK	X	X	X
PoB/ALOT	X	X	X
IRD	X	X	X
CFR		X	X

TABLE 1: PARTNERS INVOLVED IN THE WP4 TASKS.

1.2. Expected results

WP4 will provide 3 Deliverables:

- Deliverable 12: Pilot applications management plan
- Deliverable 13: Preparation of the pilot applications, including test methodology
- Deliverable 14: Pilot applications

and several outputs:

- 4 awarding texts serving as examples for energy efficient/environmental friendly and sustainable awarding in Europe;
- site stakeholder group meetings;
- 1 international workshop with the administrations on the common and site-related goals of the pilot applications;
- 1 international workshop with the administrations on the methodology of the pilot applications;
- 1 User Platform workshop on the results of pilot applications (administration level);
- 4 presentations of the test results at international dissemination events (e. q. UIC, CER, UITP energy efficiency conferences).

Deliverables 12 and 13 have the aim to support and accompany the execution of the pilot applications, while Deliverable 14 will collect the results and a detailed description of the activities carried out in each site.

As regards the outputs, the awarding texts developed during the pilot applications will be part of Deliverable 14, as well as the main findings of the above mentioned workshops and meetings.

More specifications about the awarding texts are given in Section 3 of this document, while further details about the workshops, meetings and presentations can be found in Section 4.

1.3. Content of the present document: the Pilot Applications Management Plan

Deliverable 12 contains the common managerial approach to be followed by the four Site Managers to perform their tests in a correct, easy, comparable and replicable way.

In Section 1 it deals with some general issues; here the connections with the other WPs are also shown and a summary of the object of each pilot application is given.

In Section 2 the organisation needed to perform each test is outlined, including the roles of the institutions involved.

In Section 3 the four steps for the execution of the pilot applications are described, together with the activities to be performed in each site and the time schedule.

In Section 4 some additional details are given about the internal site reports and documents and the training and dissemination activities.

The Annexes are the last section of the document, with information about the Site Working Groups and the Site Stakeholder Groups.

1.4. A glance at the ECORailS goals from the perspective of the Pilot Applications

In a few words, from the point of view of WP4, the four ECORailS tests have to deal with the Guidelines coming from WP6 in order to understand, in real life awarding processes:

- whether the Guidelines are easy to handle for the elaboration of an awarding procedure;
- whether the performance indicators – in term of energy efficiency and environmental impacts – are reachable;
- whether the tests are representative business cases;
- whether the results of the tests are transferable to other regions or states.

1.5. Short description of the pilot applications

1.5.1. Berlin

Berlin, as a test site with high population density, covers city connections and links to rural areas. There are different types of regional passenger rail services in the Berlin area, including connections inside the city (mainly by the City Railway “S-Bahn”) and fast connections between the city and the surrounding regions and towns in the Federal State of Brandenburg. Chosen from the wide range of regional rail varieties, the following awarding will be the basis for a more detailed description of railway services:

Connections issued for awarding: Regional Express (RE) lines 74, 75, 76. Line RE 76 has diesel traction.

Some data to describe the Berlin pilot application:

- yearly production: 12.5 million train*km:
 - in Berlin: 2.8 million train*km;
 - in Brandenburg: 9.7 million train*km;
 - with diesel traction: 1.5 million train*km;
- maximum speed: 160 km/h (electric), 120 km/h (diesel);

- contract duration: 12 years;
- foreseen start of operation: December 2014;
- vehicles:
 - electric traction: double-deck EMU or locomotive-hauled double-deck trains for about 190 coaches;
 - diesel traction: sets of two-cars DMUs or the respective number of coaches (one floor).

The Berlin pilot application intends to review the present awarding documents developed for competitive tendering. A great role will be played in this case by the interaction with the stakeholders that will be involved in all steps of the analyzed awarding process.

1.5.2. Øresund

The Øresund region consists of the Danish capital of Copenhagen with surrounding urban areas and the southern Sweden with the main cities Malmö and Lund. The tendered traffic can be described as cross-border regional traffic. The traffic has been awarded through a cooperated tendering process between Danish and Swedish PTA's and the winning operator has two separate contracts.

The rolling stock consists of 2 types of EMU's: the IR4 (25kV, 50Hz), which can only be used for regional Danish traffic, and the ET (25kV, 50Hz and 15kV, 16,4 Hz) which can be used in both Denmark and Sweden.

Some data to describe the line which is the object of the Øresund pilot application:

- yearly production: 15.4 million train*km:
 - in Denmark: 4.5 million train*km;
 - in Sweden: 10.9 million train*km;
- maximum speed: 180 km/h;
- contract duration: 7 years (with an option to extend the contract 2 more years);
- start of operation: January 2009;
- number of vehicles: 20 class IR4 and about 110 class ET. Many of the class ET trains are to be delivered during the contract.

The Øresund pilot application has the aim to support the inclusion of energy efficiency (EE) and environmental (ENV) requirements into the next upcoming tendering procedures. During the test the requirements used in the recent past tender will be reviewed in terms of the appliance of the EE/ENV targets proposed by the ECORailS Guidelines. The awarding documents will also be revised with regard to the rolling stock requirements.

1.5.3. Timișoara

The Timișoara pilot application is focused on the procurement of new rolling stock. Two areas have been selected for the test:

1. between the city of Timisoara and smaller towns (Lugoj, Caransebes, Resita);
2. between the city of Arad and Deva, Simeria, Oradea and Brad.

The selected zone is interesting because it contains some routes with different particularities and it includes some of the most important cities of Romania (Timișoara, Arad, Oradea, Deva) and it is, also, very important for the national and international (Hungary, Serbia) rail transport. The chosen area is connected to the 4th Pan-European Corridor - Dresden/Nuremberg - Prague - Vienna - Bratislava - Gyor - Budapest – Arad, which is continued in Romania with two branches (both connected also to the chosen area):

- Arad – Simeria – Brașov – București – Constanta

and

- Arad - Timișoara - Craiova – Calafat / Vidin - Sofia - Thessaloniki

The foreseen need of rolling stock is:

- 10 diesel Railcars (DMU - Diesel Multiple Units);
- 10 electric Railcars (EMU - Electric Multiple Units).

Basically Railcars will have the following characteristics:

- approximately 100 places;
- DMU Maximum speed: 120 ÷ 160 km/h;
- EMU Maximum speed: 160 km/h;
- gauge: 1435 mm;
- possibility to be driven from both posts in the simplified scheme;
- possibility to move in variable configuration (1-3 coupled units), led by a single driver;
- range of about 700 km for the DMU;
- thermal comfort of passengers both in winter as well in the warm season;
- employment in the environmental conditions imposed by the laws of Romania;
- compliance with the requirements for interoperability (ERTMS level 2);
- electric power supply: 25 kV, 50 Hz AC.

For the calculations needed for the pilot application two lines have been selected:

1. Diesel line: Timișoara – Jimbolia:

- length: 39 km;
- maximum speed: 80 km/h;
- operated by a total of 13 double-deck slow trains (LDHC Caterpillar with double-deck stock, A 900 and LVTrailcars);

2. Electric line: Timișoara – Caransebes:

- length: 98 km;
- maximum speed: 120km/h;
- operated by:

- 6 pairs of slow trains (a pair of double-deck revamped), formed by EA and EC locomotives and coaches series 1947, 1957, 2047, 2057, 1617, 2617, 2147, 1147 (a pair of double-deck revamped);
- 2 pairs of fast trains, one of them run by an EMU.

Although the pilot is dedicated to railway passengers' transportation, it will also be checked whether the approach is also applicable to railway freight transportation.

The awarding procedure will be simulated by drawing up offers, respectively by providing various presumptive answers referring to the indicators and new requirements proposed by the ECORailS Guidelines. They will be based on the good practice examples proposed by the Guidelines and by the ECORailS deliverables and on other possible examples known from various awarding procedures and from the specialized literature.

The Timișoara pilot application will be therefore be a good test regarding the feasibility of the providing new rolling stock in the emerging countries of Eastern Europe that is compliant with advanced environmental and energy efficiency standards.

1.5.4. Lombardy

The pilot application of Lombardy will involve the awarding of regional rail services and rolling stock within the Region. They are a good sample of the main commissioning issues that usually occur to the planning and financing authority of a local rail network in Italy.

Two lines have been chosen for the test:

1. the 103 km long single-track diesel rail link from Brescia (the second bigger city in Lombardy) to the mountainous Valcamonica valley;
2. the 21 km long double-track electric suburban S3 line from Milan to the city of Saronno.

The pilot application involves the public service obligation contract in force between the Lombardy regional government and the train company called LeNord. The yearly compensation for the public obligations asked by this contract is about 9 billions of Euros.

During the pilot application the present contract will be reviewed to introduce energy saving and environmental specifications and targets and a new text will be delivered and evaluated. The contract covers the following relevant cases:

- for the Valcamonica diesel line:
 - 8 revamped Diesel Multiple Units (DMU): the cost is about 12 million Euros and the revamped rolling stock is already operating;
 - 8 new DMU procured by competitive tendering: the cost is about 24 million Euros and the rolling stock is near to be delivered;
 - 2 two new DMU bought without tender, due to the urgent need to replace old rolling stock: the cost is about 8 million Euros;
- for the S3 line:
 - energy saving targets and energy meters applied to the present rolling stock;
 - first key requirements for new suburban rolling stock to be bought in the next years.
- for both lines: testing of eco-driving procedures.

Due to the different kind of procedures (i.e. tenders for rolling stock, direct contracts for services) and items involved, ECORailS is a strategic test because of the willingness of the Province of Brescia and of the Regional government to improve its public transport by more cost-effective and environmental friendly procurement.

The ECORailS Guidelines will be tested by simulation: the contract and tender specifications will be rewritten according to the manual and their effects (technical, environmental, ...) and costs will be estimated.

1.6. Flow sheet and links with other WPs

WP4 has the need to handle in practice the wide and not homogeneous contents provided mainly by WP2 and WP3: technology, legal framework, economics, operations. On the other hand, the Guidelines developed in WP6, that are tested in the pilot applications, have the hard task to convey this important knowledge to meet the practical needs of the administrations responsible for the awarding procedures.

WP4 – as shown in the following figure – has therefore direct links with WP6, that provides the input, and with WP5, that evaluates the results, but also the indirect links with WP2 and WP3 play a key role. During the execution of its tasks, it will deal with WP6 on dissemination too.

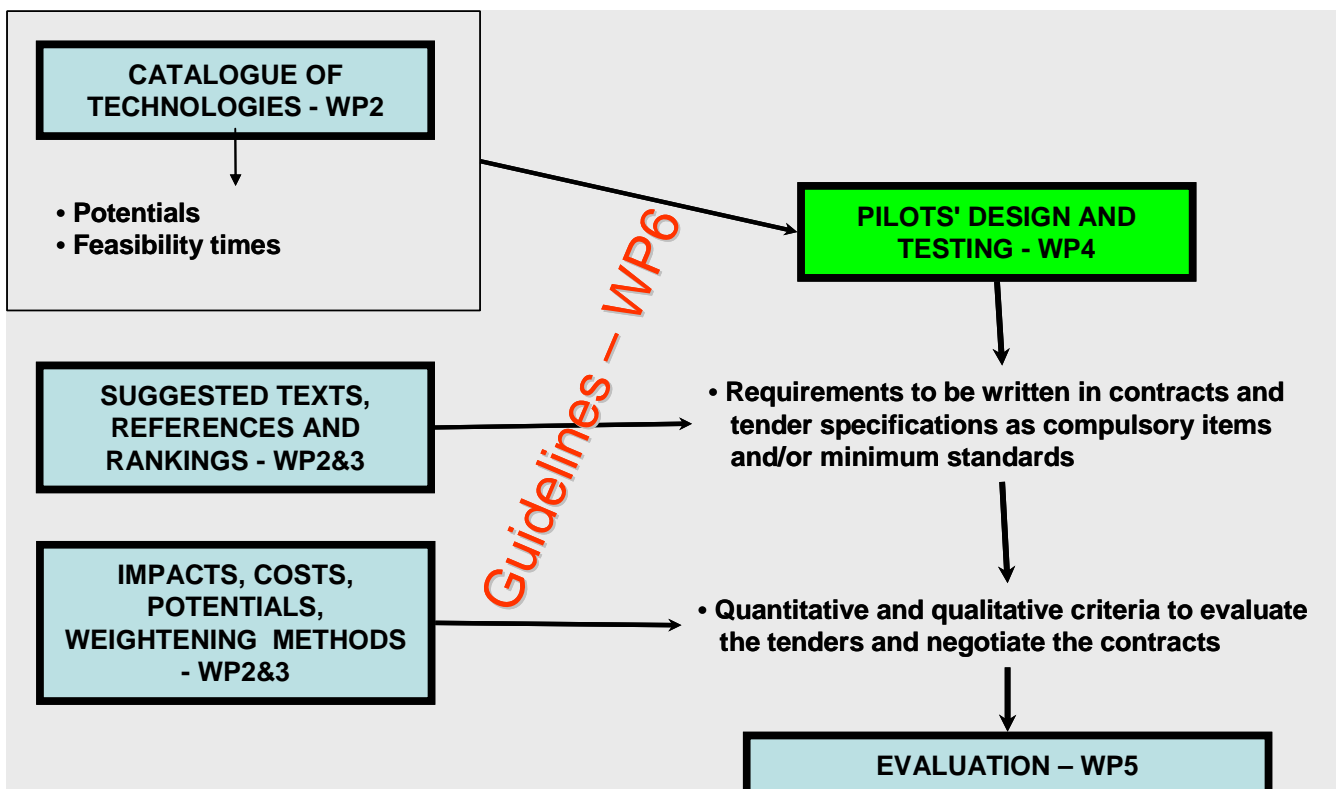


FIGURE 1: RELATIONSHIPS AMONG THE WPs.

In details:

- From WP2 comes the catalogue of technologies (Deliverable 7) which is the starting point to gather data to build up the baseline and to choose the measures to be involved in each pilot application.

- From WP3 (Deliverable 10) come legal, procedural and economical inputs, together with texts modules to be used in the awarding texts of the pilot applications.
- From WP6 comes the draft version of the ECORailS Guidelines (Deliverable 20) to be implemented in each test site.
- From WP5 comes the validation strategy and methodology (Deliverable 15) to be used during each step of the pilots' implementation.

WP4 and WP5 will partially rely on the same data but use them from different perspectives. WP4 needs from WP5:

- validation of the test results, including the ECORailS Key Performance Indicators;
- check of appropriateness of test methodology elaborated in D13;
- feedbacks and comments.

WP5 needs from WP4:

- calculations concerning the baseline;
- alternative scenarios;
- comments and inputs from the stakeholders;
- quantitative/qualitative analysis of the expected improvements in the pilot applications;
- comparisons;
- questionnaires & interview campaigns.

On the other hand, WP4 will provide the other WPs with:

- Good examples of awarding texts, which have to be elaborated using the Guidelines and taking into account the feedbacks from the users and the stakeholders. The tests results and conclusions from the four sites have to be endorsed to WP5 and included in the evaluation and validation process for Deliverable 16.
- Inputs to improve the Guidelines, which has to be endorsed to WP6 for Deliverable 22, like:
 - general concept of the case studies;
 - texts modules and other results of the case studies, further background information;
 - conclusions and recommendations;
 - further good-practice examples for energy efficient regional rail passenger transport;
 - further innovations being developed or considered by the railways and the rail supply industry.
- Estimation of saving potentials according to the needs of the PTA, which have to be addressed to WP2 for its final conclusions (Deliverable 23).

As reference, in the following, the role of each WP is summarized.

- WP2:

This Work Package gives a documentary overview of the technologies and about the markets for the products and applications today and anticipated changes in Europe and in the participating countries. Methodology of Life-Cycle-Costs approaches for both for the Public Transport Authorities (PTA) and the Train Operating Companies (TOC) is included. The facts are gathered in close cooperation with the administrations via interviews and User Platform meetings.
- WP3:

Work Package 3 performs both an input-oriented objective (state-of-the-art and future developments of legal norms and awarding procedures) as well as a process-related objective (compilation of the technical – technological, economical and legal – inputs into a Europe-wide applicable, legally-secure guideline).
- WP5:

The main objective of WP 5 is to evaluate the results of the tests in order to assess the performance of the developed Guidelines. The performance improvements will be compared to the predefined validation criteria. On the basis of the evaluation, the WP will provide an outline of recommendations for the implementation of the Guidelines and suggestions for its further developments.
- WP6:

The main task of this Work Package will be to organise the dissemination process focused on the usability of the Guidelines for administrative decision-makers and the involvement of a User Group aiming at shaping a common expert opinion on using standardised energy efficiency and environmental criteria in the awarding of rail passenger transport.

2. Pilots' Organization

2.1. Participants and roles

The organizations that take part in WP4 are: PoB/ALOT, ApS, TSB FAV, SenStadt, TFK, TSY, IRD, RTFC Timișoara.

ALOT is the Work Package leader, with the duty to co-ordinate the whole process.

ApS will provide the test methodology, explained in Deliverable D13.

The other partners are directly involved in the execution of the pilot applications, as follows:

- PoB/ALOT is responsible for the test application in Lombardy and will test the Guidelines for that site;
- TSB FAV is responsible for the test application in Berlin;
- SenStadt tests the Guidelines for the site Berlin;
- TFK is responsible for the test application in Øresund;
- TSY tests the Guidelines for the site Øresund;

- IRD is responsible for the test application in Timișoara;
- RTFC Timișoara tests the guidelines for the site Timișoara.

2.2. Organizational structure

A three-level organization is adopted in each site to manage the pilot application.

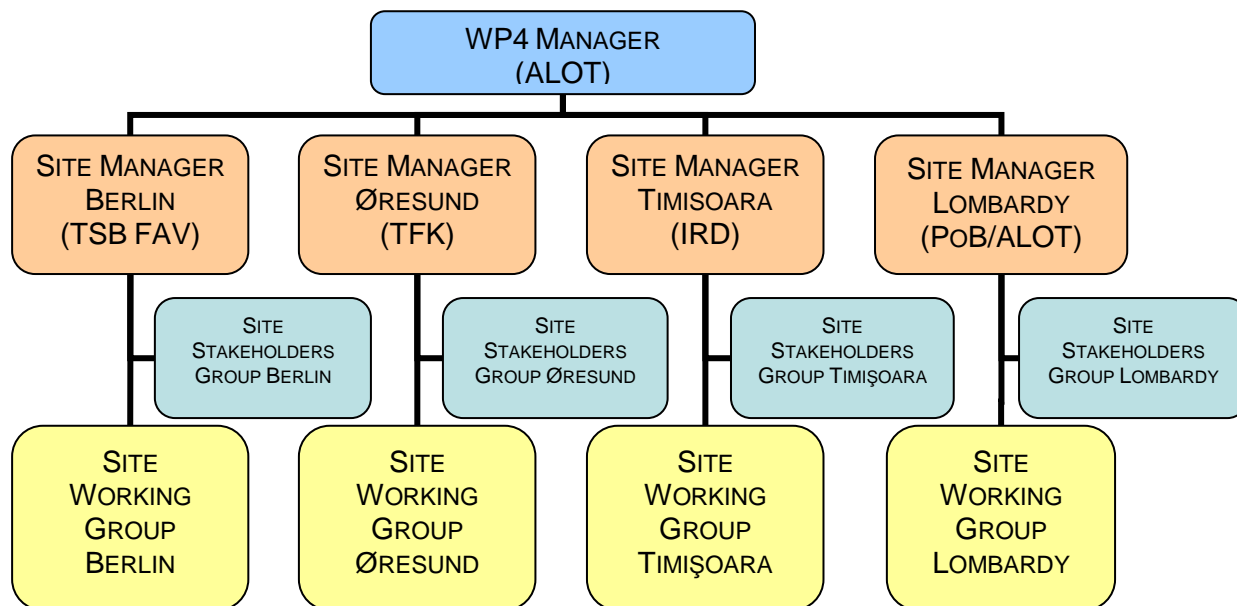


FIGURE 2: ORGANIZATIONAL STRUCTURE OF WP4.

As mentioned before, the execution of each pilot application is co-ordinated by a Site Manager, while the administrations (PTA) and the Train Operating Companies (TOC) are main actors of this process.

The need of conveying certain know-how (technical, economical, legal, administrative, managerial, ...) to each pilot application is faced by establishing an interdisciplinary working group (Site Working Group) at each site. Leading role in these groups is played by the above mentioned institutions and TOCs: SenStadt, TSY, RTFC Timișoara and PoB. The members of each SWG are chosen according to the singularities of each site and they are listed in the annexes of this deliverable. As a rule they should enclose both the PTAs – as main users of the Guidelines – and the TOCs or other technical bodies with competence on the lines involved in the pilot applications. If the object of the awarding test is the purchase of rolling stock, the involved TOC will have a more prominent role compared to the approach in the case of awarding services.

Sometimes not all the key local stakeholders are directly involved in the pilot applications or they are not able to take part to the international User Platform meetings. For example, the Infrastructure Managers and the national Safety Authorities are key players when innovative requirements are introduced in the awarding of rolling stock and of rail services. Other institutions interested in the ECORailS Guidelines are the builders of rolling stock, the environmental agencies and the TOCs different from those directly involved in the tests.

It is therefore highly recommended to establish in each site a Site Stakeholders Group. This group should regularly meet to provide the SWG with a wider perspective about the needs

and the achieved results. Again, the members of each SSG will be chosen according to the singularities of each site and they are listed in the annexes of this deliverable.

3. Management Plan

3.1. Overview

The Management Plan establishes the main working phases and the timetable, outputs and reports to be provided by each site.

It was prepared according to the inputs given and discussed among the WP4 Leader and the Site managers during the WP4 kick-off meeting hold in Brescia (9th-10th December 2009) and the following conference calls and meetings.

The execution of each pilot application is divided into 4 main phases, called “Steps”:

- Step 1. Preparation of the test
- Step 2. Definition of the Scenarios
- Step 3. Execution of the test
- Step 4. Analysis of the results

Each Step is from 2 to 4 months long and it has the aim to reach a progress in the pilot application both by operative work and the involvement of the stakeholders. At the end of each Step an internal Intermediate Site Report (ISR) must be sent by the Site Manager to the WP4 Leader: here the activities done and the results achieved are collected and explained. The ISRs are sent to WP5 to be part of the evaluation of ECORailS.

3.2. Schedule

The main deadlines of WP4 are shown in the following figure, where the yellow boxes mark the Deliverables D12, D13 and D14 and the internal Intermediate Site Reports ISR1, ISR2, ISR3 and ISR4.

	2009		2010												2011						
	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February						
	15	31	15	31	15	28	15	31	15	30	15	31	15	30	15	31	15	31	15	28	
Task 1 Common Pilot Applications Management																					
Task 2 Preparation of the Pilot incl. test methodology																					
Task 3 Execution of the tests																					
Step 1 Preparation																					
Step 2 Scenarios																					
Step 3 Execution																					
Step 4 Analysis of the results																					

FIGURE 3: SCHEDULE OF WP4.

Task 1 will accompany the whole duration of WP4, while Task 2 about the methodology is running before the execution of the pilot applications and slightly in parallel with the first Step. Deliverable 13 is planned to be finalised at the end of April 2010.

Task 3 about the execution of the tests starts in March 2010 and will follow the whole implementation process. It is divided into the four Steps mentioned above:

- Step 1 is performed during April and May 2010, with some calculations for the baseline still running during Step 2.
- Step 2 will be developed during June and July 2010, so that all sites will be ready for the preparation of the awarding texts after the summer holidays.
- Step 3 will cover four months, from August to November 2010, because of the challenging job of writing the awarding texts and of estimating the impacts;
- Step 4 about the results of the pilot applications will be run at the end of the year, from December 2010 to January 2011.

At the end of each Step the Site managers will send their own Intermediate Site Report to the WP4 Leader.

February 2011 will be occupied by the preparation of Deliverable 14 that will benefit from the outputs from the Steps 1-4.

In the following paragraphs a detailed description of each Step is provided.

3.3. Step 1: Preparation of the test

In Step 1 the preparatory work for the execution of the pilot applications is done. Three main objectives are reached in this phase of the work:

1. Establishment of the Pilots' organization, in line with the specification of paragraph 2.2.
2. Definition of the pilot in terms of:
 - object of the awarding: services, rolling stock, both, ...;
 - scope of the test: area, lines, kind of vehicles, traction, service to be done, ...;
 - kind of procedure (direct award, competitive tendering, ...) and legal documents (public service contract, call and tender specifications, ...);
 - other features relevant at site level.
3. Collection of the information needed to calculate the baseline.

Baseline – that can also be called the “Scenario 0” – is the present status of the awarding in the site. Usually, it does not take into account Energy Efficiency/ENVironmental friendly criteria. Otherwise, if the present status complies with some EE/ENV standards, often they are in the background of the awarding procedures, so that their relevance in the decisional process is limited.

For the pilot applications the baseline is the reference to be used to understand to what extent the ECORailS targets of EE/ENV can be reached. Unfortunately, this reference will often not easily be calculated because the current monitoring systems are usually not fitted to measure the relevant indicators. For example, not every country asks the TOCs to have onboard energy meters for the direct measurement of energy consumption.

The data to describe the baseline should be selected according to the needs of each site, but some common aspects should be covered to assure that the tests can be compared:

- a set of descriptors of the location of the test from the point of view of international comparability and EU relevance (geographical and socio-economic data);
- the elements which are useful to estimate the present energy consumption and environmental impacts within the scope of the pilot applications, as defined by the lines, classes of rolling-stock and service profiles involved in the test;
- the technologies which are in use today, to be compared with the pilot catalogue of technologies;
- the present legal framework applied to the lines, rolling stock and services involved in the pilot application;
- the present awarding documents and procedures that regulate the provision of the regional rail services involved in the pilot application and/or, if the test is about the providing of rolling stock, the usual way of specifying the requirements for the vehicles. Each document should be analysed in order to show the present way of management of public subsidies, technical specifications, quality standards, bonus/malus systems;
- the economic framework which is today applied to the services and rolling stock involved in the pilot application (public subsidy, investment costs, monitoring of the operational costs, ...).

The common approach to the data to be used in the pilot applications is fixed in the common methodology described in Deliverable 13.

As reference, sources for the data needed in the preparation Step may come from:

- the PTA itself, for example:
 - current awarding documents;
 - EU and national legal regulations;
 - actual service specifications;
- the TOC at present operating the rail service, for example:
 - data about the present rolling stock:
 - technical features;
 - operations;
 - costs specifically referred to LCC calculations;
 - energy consumption and prices;
- ECORailS (and the literature), for example:
 - Guidelines;
 - User Platform minutes and findings;
 - good practices;
 - similar cases;
 - technical references (methodology for energy & emissions measurement, environmental standards, ...);

- methodology for LCC calculation.

As already mentioned, the preparation step will last about two months, with the opportunity of extensions to manage possible complexities in the collection of the data. It should be very useful for the SWGs to involve the stakeholders in the exercise of describing their present situation from the point of view of the energy consumption and environmental impacts.

At the end of Step 1 the first Site Intermediate Report will be sent by the Site Managers to the WP4 Leader.

3.4. Step 2: Definition of the Scenarios

Step 2 deals with the detailed design of the content of each test that will be done in the four sites. After having reached a settled base of data and a clear operating methodology, the need is to imagine/elaborate different, possible, future conditions of awarding, non-definitive awarding texts and the use of improved technologies.

It is useful to remind that the general goal of ECORailS is to deliver and to test Guidelines that are able to change the present approach in the awarding procedures, so that energy savings can be encouraged and lower environmental impacts reached:

- 5% in comparison to current awarding;
- 10% with regard to the currently used rolling stock (i.e. change or improvement of rolling stock, incl. energy recovering);
- 15% in the long term, if supported.

Also within a defined and stable legal framework it is possible to design awarding texts with several different approaches to gain the above listed goals. For example:

- compulsory requirements vs. flexible approaches where proposals come from the bidders;
- detailed indicators to describe the service/product vs. aggregated functional indicators;
- fixed target values to be guaranteed by the bidder vs. incentives in order to improve the EE/ENV performances with or without a compulsory minimum.

Apart from these issues directly concerned with the legal texts, from the technological point of view several alternatives are available in the ECORailS Guidelines to be tested in the four sites. Each technology – and the combined use of several technologies – has its potential, so that different choices are possible in the pilot applications, depending on the site specifics and rate of energy saving/environmental impacts reduction to be reached.

The economic framework is also a key-point for the PTA when they are deciding the goals of the pilot applications. In fact, the perspective of saving money by reducing the energy consumption should be balanced – with the LCC approach – with the additional costs due to the use of new technologies and of the energy meters.

In Step 2, therefore, the four sites are asked to define the actions they are going to implement, the targets, technologies and instruments in a way that enables them to design an “alternative” status of the awarding in comparison with the present one, described in Step 1. This is called Scenario 1, to be compared with the Scenario 0 to assess the EE/ENV improvements.

In a few words, a Scenario is described by the choice, at site level, of

- kind of awarding/procedure;
- technologies;
- target values;
- legal instruments;
- economics.

Each site can define more than one scenario, if it wishes to test different future developments. For example:

1. a soft approach for “beginners” (Scenario 1) may be designed by:
 - asking basic energy savings & environmental improvements that require less investments,
 - giving incentives to improve the EE/ENV performances without strict compulsory prescriptions,
 - leaving the TOC, or the builder of rolling stock, free of choosing the technological approach;

while:

2. an “advanced” more ambitious approach (Scenario 2) may:
 - ask for relevant energy savings & environmental improvements, that usually require big changes;
 - require energy savings and environmental improvements, with a bonuses/penalties system;
 - prescribe certain compulsory technological solutions.

Also Step 2 will last two months. At the end, a detailed plan will be available for each site about what is going to be written in the awarding texts, discussed and, where possible, simulated. During this Step it should again be very useful for the SWGs to involve the stakeholders both on the technical aspects and on the acceptability of the Scenarios for the market context of their country.

At the end of Step 2 the second Site Intermediate Report will be sent by the Site Managers to the WP4 Leader.

3.5. Step 3: Execution of the test

Step 3 will deliver the main outputs of WP4 that are the four proposals of awarding texts, compliant with the EE/ENV goals of ECORailS. Here, it is to be executed what planned in Step 2 by using the Guidelines and the data collected in Step 1.

The first task for each site and scenario is concerned with the preparation of the awarding documents. The main issues involved in the texts to be written are:

1. the technical specifications:

- to identify the technologies which may be included (required / indicated) in the specifications;
 - to adopt the Guidelines indicators, tools and procedures (criteria, indicators, application methodology etc.);
2. the innovative sections to be added or reviewed in the contracts and/or in the call for tenders and its annexed specifications:
 - the awarding modality and requirements, according to some basic principles about the use of data and indicators, the standardized format, the modality of checking and measuring / evaluating the indicators values and LCC;
 - draft contract conditions which should assign the liabilities and responsibilities between the Supplier and user of services/rolling stock (TOCs – PTAs);
 3. the methodology for the evaluation of offers, so that the final results of the simulated award give the expected role to the ECORailS EE/ENV criteria;
 4. the system of verification of the performances during the contract (monitoring system).

Second task in Step 3 concerns the preparation of the quantitative and qualitative data to be used in Step 4 for the analysis of the results and in WP5 for the overall evaluation.

This means that each site has to:

- calculate/estimate the EE/ENV impacts reachable by using the prepared awarding texts;
- simulate in the SWG and/or discuss in the SSG the practical use of the offers evaluation methodology;
- estimate other non quantitative impacts relevant for the analysis of the results;
- fill in questionnaires and documentation sent by WP5.

The methodology to perform this task will be given by Deliverable 13, and according to the evaluation strategy established in WP5.

The duration of Step 3 is longer (4 months) and, as usual it will benefit of exchanges not only in the SSG, but also among the four sites. The third ISR has to be sent to the WP4 Leader at the end.

3.6. Step 4: Analysis of the results

After collecting all the outputs coming from the execution in Step 3, the analysis of the results will be made with the help of an international Evaluation group. Members of this group will be the 4 Site Managers, the WP4 Leader and the WP5 Leader, with the help of external experts, if needed. Its task is to analyse and to compare all the reports and results from the four sites by applying a common methodological framework.

The quantitative and the qualitative results, which will be elaborated on the basis of a common methodology (developed in D13), will be compared and a common evaluation referring to the specific and strategic objectives of ECORailS and their targets of success will be made. Useful criteria to be checked in the analysis are:

- the legal feasibility (changes needed);
- the practical feasibility (organization needed, technical difficulties, market obstacles, ...);

- the environmental impacts reachable;
- the additional investments needed;
- possible cost savings (operational costs);
- changes in the way subsidies are paid;
- the level of complexity to be faced, caused by the differences among the sites (obstacles to give general guidelines);
- the fulfilment of the ECORailS Key Performance Indicators.

4. Outputs, training and dissemination

This Section summarizes the planned outputs of WP4, their content and the timing:

4.1. Awarding texts

Four Awarding texts are serving as examples for energy efficient and sustainable awarding in Europe. They are:

- developed during Step 3 and delivered by each partner to the WP4 Leader at the end of month 19;
- analysed and finalised by the Evaluation Group during Step 4;
- presented to the User Platform in the meeting of Month 22;
- annexed to D14 in Month 22.

4.2. Training

Two international training events are scheduled during the preparation phase of the pilot applications and other local meetings of all the stakeholders are encouraged during the execution phases:

1. Workshop with the administrations on the common and site-related goals of the pilot applications: hold in Brescia on 10th December 2009.
2. Workshop with the administrations on the methodology of the pilot applications: hold in Bergamo on 18th and 19th March 2010.
3. Site meetings with the local stakeholders recommended during each Step of the work.

4.3. Deliverables and Reports

For the aims and the contents of Deliverables 13 and 14, see Section 1.

During the four steps planned in WP4 task 3 “Execution of the tests” internal Intermediate Site Reports are requested. The aim of these documents is to keep all the sites up-to-date, so that the intermediate findings can be exchanged and the information to compile Deliverable 14 is quickly collected.

The following structure for each ISR is proposed (subject to confirmation after Deliverable 13 has been finalised):

- story of the activities done during the completed step;
- minutes of the SWG and SSG meetings;
- description of the data & documents collected/developed;
- schedule of the activities planned in the following step;
- other specific issues;
- annexes.

4.4. Dissemination

1. One User Platform workshop on the results of pilot applications for the administration level (Level 1) is planned after the analysis of the results of the pilot applications with the aim to develop a broader evaluation of the testing process. February 2011 is the planned timetable.
2. Four presentations of the test results at international dissemination events, like UIC, CER, UITP energy efficiency conferences, are planned. Proposals and timing for these events will be developed from September 2010 under the input of the communication and dissemination WPs Leaders.

1. Annexes

A. Site Working Groups

I) Berlin

- TSB FAV
- SenStadt
- ApS

II) Øresund

- TFK
- TSY

III) Timișoara

- IRD
- RTFC Timisoara
- SNTFC “CFR-Calatori” SA

IV) Lombardy

- ALOT
- PoB
- Department for Infrastructure and Transport of the Regional Government of Lombardy, Office for the Regional Rail Service
- FerrovieNord (Regional Infrastructure Manager)

B. Site Stakeholders Groups

I) Berlin

- Berlin Senate Department for Urban Development
- Berlin Senate Department for Health, Environment and Consumer Protection
- Brandenburg Ministry for Infrastructure and Agriculture
- Brandenburg Ministry of Environment Health and Consumer Protection
- Verkehrsverbund Berlin Brandenburg (VBB)
- DB Regio Nordost (TOC that operates the lines object of the pilot application)
- S-Bahn Berlin
- DB AG Environmental Centre
- Niederbarnimer Eisenbahn (NEB), Train Operating Company
- Association of German Transport Companies (VDV)
- Siemens
- Bombardier
- Alpha Trains (lessor of rolling stock)
- Federal Environment Agency (UBA)

II) Øresund

to be appointed.

III) Timisoara

- The Ministry of Transport and Infrastructure
- The Ministry of Environment
- The Romanian Railway Authority (AFER)
- Siemens Romania
- Transferoviar Group (private TOC)
- Remarul 16 Februarie (rolling stock manufacturer)
- Polytechnic University of Bucharest – Transport Faculty
- Club Feroviar
- General Association of Romanian Engineers (AGIR)
- The Romanian Association of Railway Engineers (AIFR)
- SNTF “CFR -Calatori” SA
- CNCF „CFR” SA (Infrastructure Manager)

IV) Lombardy

- Province of Brescia
- Department for Infrastructure and Transport of the Regional Government of Lombardy, Office for the Regional Rail Service
- FerrovieNord (Regional Infrastructure Manager)
- Trenitalia-LeNord (TLN), TOC that operates the lines object of the pilot application
- National Agency for Safety (ANSF)
- Federmobilità, national association of the transport departments of the Regions, Provinces and Municipalities
- representatives of rolling stock manufacturers