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



**Deliverable D4:
Risk management report, update in
the interim report**

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Draft:	Function	Approval
Martin Schipper	Name	
TSB FAV	Organisation	
+49-30-46 30 25 77	Phone	
+49-30-46 30 25 88	Fax	
mschipper@fav.de	E-Mail	

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0. Management Summary

The objective of this deliverable is to identify and assess project risks that may occur on strategic, operative and financial level, and to define contingency plans for them. More specifically, all identified risks were accompanied with one or several contingency plans to reduce the likelihood of risk occurrence, the impact of a realized risk and to enable recovery from the risk scenario. In other words, contingency plans follow the logic of first emphasizing pre-emptive measures, then countermeasures and recovery-oriented contingency plans only as a last resort.

The risks were assessed in terms of both probability of occurrence and severity of impact (in case of occurrence) in order to determine the overall ratings of risks. These composite ratings were derived based on the experienced inputs of WP managers and the coordinator and proportioned to each other by TSB FAV on the basis of these inputs. The simple qualitative combined risk rating allows for determining the likely threat of individual risks at a glance, thus enabling project management to dedicate their attention first of all to most prominent risks.

The risk evaluation shows that the following risks are the most important to monitor and control:

- Inability to retrieve all requirements relevant for the guidelines or misinterpreting their importance
- User acceptance of the guidelines is low
- Only subset of guidelines criteria can be in project scope: Applicability for all Europe-wide awarding can not be guaranteed

In addition, several risks have a moderate (medium) rating should be given special attention in the project reviews.

This deliverable constitutes the basis for risk management actions throughout the project lifecycle and aims to ensure undisturbed completion of wider project objectives. However, risks identified in this report may change over time and the actual process of risk management needs to be continuously ongoing. This report will therefore be followed by an update in the interim report.

Introduction

Risk management is a vital part of the management and quality assurance activities of the ECORailS project. Risk management also contributes to the successful and timely completion of the project. Therefore, in order to secure the completion of the project objectives, the risks related to the project need to be constantly monitored and controlled.

1.1. Objective of deliverable

The risk management report holds the objective of identifying, assessing and reacting to events that occur on strategic, operative and financial level of the project and the partners involved in order ensuring undisturbed completion of wider project objectives. This report will be followed by an update in the Interim Report (to be delivered in Project Month 13) while the actual process of risk management is continuously ongoing.

1.2. Problem to be solved

The risks related to ECORailS, the consortium and the work to be done in the project will be identified and assessed in terms of both probability of occurrence and severity of impact (in case of occurrence). Proactively identifying risks enables the creation of contingency plans, risk mitigation efforts and improves overall ability to prevent and respond to adverse events.

1.3. Input in the deliverable

The key inputs in the report are the identified risks from the WP managers. The WP managers will also constantly report additions and changes to risks related to their respective WPs. Finally, the Coordinator helps identify and assess project- / consortium wide risks. The risk management process, although primarily carried out by TSB FAV relies heavily on the inputs of the WP managers as they are best positioned to identify upcoming risks in their work packages.

1.4. Result and added value of the deliverable

This deliverable will constitute the basis for risk management actions throughout the project duration. The primary value of the document is in the list of identified risks and the preventive / corrective measures designed to counteract them. The document allows for consistent risk monitoring and control thus enabling efficient and undisturbed management of the project and ultimately, the successful and timely completion of project objectives.

1.5. Partner contributions

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The risk management activities are led by TSB FAV supported by the inputs of the WP managers and all further project partners. TSB FAV will constantly monitor risks and issues related to the project development and set up effective and appropriate corrective actions as early as possible. It is also responsible for processing and compiling all the information and inputs provided by other project members into a workable risk management process along with all the necessary deliverables and updates.

2. Process overview

The methodical focus on the project risk management in ECORails is on identifying, assessing and reacting to events that occur on strategic, operative and financial level of the project and the partners involved. The approach used is based on the following four steps:

(1) Risk Identification: All project partners, under the guidance of all WP managers, identify risks that are foreseen to concern their respective WPs, while the Coordinator provides project wide risk scenarios from a higher perspective. TSB FAV then analyzes and compiles this information into two risk management tables (tables 1 and 2 in this deliverable) that explicitly describe the project risks and enable monitoring and control. The risks are updated and reassessed in the Interim Report in Project Month 13.

(2) Risk Evaluation: TSB FAV evaluates the identified risks on two criteria: probability of risk occurrence and severity of impact. This qualitative analysis of the risks results in a combined risk rating on a 6-point verbal scale: Negligible, low, low-medium, medium, medium-high and high.

(3) Reaction/Management: For all the identified risks some specific risk management actions have been developed. The different types of these actions are: Pre-emptive actions (to prevent and/or limit occurrence of risk), countermeasures (to mitigate risk impact severity) and contingency plans (to recover from risk). The measures in general favor pre-emptive actions where possible.

(4) Monitoring and Control: Monitoring of the risks is based on co-operation between the project partners and TSB FAV. To more effectively monitor risks having a considerable (medium or higher) risk rating this report and the following updates will include a table (table 2) where early indications for such risks are listed. Once a risk is seen to be occurring control is done by implementing the related countermeasure.

The Risk Management report sets the basis for these activities consisting of a comprehensive list of identified risks and case specific contingency plans for these events. The risks are evaluated at this phase to provide each of them a rating based on an assessment of their severity and probability of occurrence.

3. Risk categories

The ECORailS project risks are categorized into five categories based on whether they are operational / strategic / financial and external / internal. The category-defining attributes may be explained as follows:

Operative risks commonly have a more limited area of impact, although they may be just as severe as, strategic risks. Operative risks are generally categorized by affecting a distinct part of the project without the effect endangering the entire project's progress or by hindering the carrying out of the tasks in the project (but not preventing the progress entirely).

Strategic risks have project wide impact. They are not necessarily risks that occur only on project management, but may also relate to critical and / or early work phases, in this case namely the first draft of the ECORailS guidelines.

Financial risks are self-explanatory. They include events and scenarios that affect the project finance.

Internal risks are generally within the control of the project consortium and / or originating from work carried out inside the project.

External risks are categorized by not being caused and/or not under the direct control of the project consortium. They may include for example political, social, legal, or technical changes, which are often hardly to predict and beyond all control by the project consortium.

4. Risk evaluation

The ECORailS risk management uses simple composite ratings to determine the overall ratings of risks. Risk ratings convey the likely severity that the risk may have on the project by combining both the probability of risk occurrence and the severity of the risk impact in case of occurrence. The risk ratings and impacts are derived based on the experienced inputs of project partners and the coordinator and proportioned to each other by TSB FAV on the basis of these inputs. The simple qualitative combined risk rating allows for determining the likely threat of individual risks at a glance, thus enabling project management to dedicate their attention first of all to most prominent risks. The risk rating has a 5-point verbal scale ranging from negligible to high. Risks with a rating of medium, medium-high and high are considered to merit special attention and monitoring.

5. Risk response planning

All identified risks are accompanied with one or several contingency plans to reduce the likelihood of risk occurrence, the impact of a realized risk and to enable recovery from the risk scenario. Contingency plans are based on the available options determined by TSB FAV together with other risk management contributors and follow the logic of first emphasizing pre-emptive measures, then countermeasures and recovery-oriented contingency plans only as a last resort. Therefore, the majority of contingency plans are pre-emptive, unless pre-emptive measures are not deemed effective enough to provide sufficient protection against risk occurrence.

6. Risk monitoring and control

TSB FAV determines new or modified contingency strategies, reassesses risk ratings and monitors the risks as the project matures, new risks occur, or anticipated risks disappear. Risk monitoring and control is an ongoing process for the whole lifetime of the project.

For risks with a moderate or higher risk rating (medium, medium-high or high) early indicators have been established, which will help focus attention on discovering most essential risks early enough to implement necessary pre-emptive measures and prepare effective countermeasures. These early indications are displayed below in table 2 and will be one critical focus point for risk monitoring.

Risk control is performed by implementing the developed contingency plans and monitoring the effect that they hold. Contingency plans are naturally updated continuously as conditions change and the updated plans will be stated in the following updates to his report.

IDENTIFIED RISK	RATING & TYPE	EARLY INDICATIONS OF RISK OCCURRENCE
Inability to retrieve all requirements relevant or misinterpreting their importance	High, Internal strategic	Users are not satisfied with the results of the pre-development and development phases
User acceptance of the guidelines is low	Medium-high, External strategic	Earlier external dissemination efforts fail to raise widespread interest and awareness; user participation in the elaboration and test phases lacks enthusiasm; strong doubts towards the system registered during chapters and decision-makers design elaboration
Only subset of guidelines criteria can be in project scope: Applicability for all Europe-wide awarding cannot be guaranteed	Medium-High, External operative	Difficulties become evident during the first or second guidelines elaboration phase, where the guidelines are seen to have considerable differences in regard to the pilot tests
A validation exercise based on four regional sites might be considered only as a starting point for evaluating the technological, economical and legal potentials of the guidelines elaborated	Medium, External operative	The pilot test phase fails to raise interest among PTA's. Users are not convinced of the reported advantages or financial benefits with regard to energy efficiency, environment, and economical/social benefits
Functional risk: The guidelines do not deliver acceptable results in an adequate time frame	Medium, Internal operative	Early phase exchange with PTA on the guidelines / simulations reveal sluggishness and/or unacceptable results
Limited reliability of the emission and use targets and use options suggested	Medium, External operative	Difficulty in determining sustainability in guidelines use
Requirements stated by PTA may not be reflected	Medium, External	Requirements for the guidelines indicate unrealistic

in the light of implementation/use effects or may become evident only very late in the project	operative	or utopistic demands; required energy efficiency and environmental features are foreseen to demand exceedingly complex technological, legal or economical solutions; system development WPs indicate that solutions to required features are notably costly to produce
Hand-over process between technological chapter, legal/economical chapter and the decision-maker design version is incomplete or erroneous	Medium, External strategic	Difficulties in linking information from various regional conditions and assessing technological/economical/legal benefits of the solution; lacking internal communication and dissemination
The project results fail to make impact	Medium, External strategic	External dissemination efforts fail to raise widespread interest and awareness; user participation in the pre-development and development phases lacks enthusiasm; strong doubts towards the system registered during PTA requirement gathering
Delay in guidelines development	Medium, Internal operative	User requirements are delivered late; system development staggers even in early phases; delays in overall project schedule are frequent; poor quality deliverables are occurring
Public Transport Administrations or Train Operating Companies refuses to accept use of designed awarding criteria	Medium, Internal operative	User requirements are delivered late; guidelines elaboration staggers even in early phases; insufficient inclusion of PTA and TOC into the guidelines elaboration

Insufficient sampling of regional sites for the guidelines	Medium, Internal operative	Chosen best practice/site examples display excessive similarities; choice is not based on the idea of comprehensive coverage
Poor deliverable quality	Medium, Internal operative	Deliverables and their inputs frequently delayed; low level of communication between involved partners; weak cooperation of project consortium; peer review handled as a low-priority formality
Poorly developed plan for the sustainability of the guidelines use including exploitation	Medium, Internal operative	Difficulty in determining use options beyond the project lifetime; exploitation analysis is unreliable and unspecific; Stakeholders dispute about the sustainability plan
The iterative process between guidelines elaboration within the project as well as between the project and the ECORailS User Platform	Medium, Internal operative	Slipping deadlines; inability to keep consistency in the process
Lack of focus on common vision and focus on ECORailS objectives	Medium, Internal strategic	Frequent misunderstandings and conceptual differences evident in project communication and meetings; Intense focusing on non-essential details at the cost of more important issues; External dissemination efforts by different partners convey notably different picture of the project; Raising amount of internal conflict in project consortium

Table 2: Early indicators for severe risk