PubTrans4All

Public Transportation - Accessibility for All

Deliverable 1.4

Final Management Report

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Table of Versions:

Version	Date	Authors	Description	Date of Approval
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PubTrans4All – Public Transportation – Accessibility for All

Project Introduction

The R&D-project "Public Transportation – Accessibility for All" (PubTrans4All) is funded under the European Community's 7th Framework Programme and the aim of this project is to develop of a prototype vehicle-based boarding assistance system (BAS) that can be built into new rail wagons or retrofitted into existing rail wagons to improve accessibility for all persons. Accessibility for rail wagons is particularly problematic since rail wagons have a long service life (30 to 40 years or longer) and so many currently inaccessible wagons will remain in service well into the future. Therefore PubTrans4All will help make existing public transport systems more accessible, improving service for everyone – not only for handicapped people but also for people with huge luggage, parents with baby carriages or elderly.

The PubTrans4All project's objective is to develop a prototype of a standard boarding assistance system that can be used on many different types of railway rolling stock and railway infrastructures all over Europe. As one part of the project, the consortium surveyed state of the art accessibility devices and made recommendations for best practices of use and operation of these existing devices.

The construction and testing phase of the prototype has started in January 2011. Till September 2012 the prototype will be incorporated into an UIC-wagon which is one of the most demanding wagon types due to their restricted entrance area and currently no boarding assistance device for this type of wagon exists. The UIC-wagon with the incorporated prototype will be exhibited on the InnoTrans2012 in Berlin end of September to the interested public.

For being able to fulfill these demanding tasks, the PubTrans4All project is completed by a well balanced and geographically diverse consortium, including users, public transport operators, academic researchers and manufacturers. Especially beneficial is the participation of several Eastern European partners – since accessibility is not sufficiently recognized as a problem in many of these countries.

Accessibility for all is essential for creating an equitable, effective and efficient transport system. Therefore the PubTrans4All project will help building a fully accessible rail network.

Project objectives for the period

PubTrans4All developed a prototype vehicle-based boarding assistance system that can be built into new rail vehicles or retrofitted into existing UIC wagons to improve accessibility for all persons. Accessibility for rail vehicles is particularly problematic since rail vehicles have a long service life and so many currently inaccessible vehicles will remain in service well into the future. The project PubTrans4All will help make existing public transport systems more accessible, improving service for everyone.

The PubTrans4All project's objective was to develop a standard boarding assistance system that can be used on many different types of rolling stock and infrastructures. The boarding assistance system should not simply be a device, but rather include contributing elements that make it possible to effectively use the device to access rail vehicles. The prototype was developed by a multi-disciplinary consortium including users, public transport operators, academic researchers and manufacturers.

As part of the process of developing the prototype boarding assistance system, the project surveyed state of the art accessibility devices and made recommendations for best practices in the use and operation of these existing devices. The project has included an extensive dissemination program designed to communicate study results widely, but also to help inform the general public and decision-makers about the importance and challenges in providing accessibility for all.

The PubTrans4all project is completed by a well balanced and geographically diverse consortium. Especially beneficial is the participation of several Eastern European partners – since accessibility is not sufficiently recognized as a problem in many of these countries.

Accessibility for all is critical to creating an equitable, effective and efficient transport system. The project PubTrans4all will help build a fully accessible rail network

The PubTrans4All project focuses on the process of boarding and alighting rail vehicles because boarding and alighting pose a significant burden for people with reduced mobility whether they are handicapped, elderly, travelling with a baby carriage or many other situations. Currently many people with reduced mobility (PRM) cannot or choose not to use public transport because of boarding/alighting difficulties. By improving rail vehicle accessibility, the PubTrans4All project should help increase the use of public transport, thereby contributing to the development of a more sustainable and energy efficient transport system.

Hereafter the project objectives are listed like they where formulated at project beginning:

1. Survey existing practices for the use of vehicle and platform based boarding assistance systems (BAS) and develop best practice recommendations for their design and use.
2. Develop a prototype for a standard BAS that can be retrofitted into all types of existing rail vehicles or installed on all types of platforms. Note that current research supports development of a standardized vehicle-based BAS; however the consortium has assessed the potential for a platform–based BAS as well.
3. Disseminate information about the project findings and recommendations widely.

The following table summarizes how success will be measured and verified.
For detailed information about the objectives and completion please see specifically the list of deliverables and the list of project milestones.

Figure 1 - Project Objectives

Project Objective	**Measures of Completion**	**Expected Completion**
1 – Survey existing BAS practices and develop best practices	Submission of project deliverables D2.1 (BAS Evaluation Criteria), D2.2 (BAS Evaluation Matrix), and D3.1 (Recommendations for Improved BAS) to EC	Month 16
2 – Develop prototype BAS and perform field test	Submission of deliverables D4.1 (Conceptual Design Recommendations), D4.2 (Prototype Design Report), D4.3 (Prototype Building and Installation Report), D4.4 (BAS Design and Evaluation Report) to EC.	Month 32
3 – Disseminate information about project findings and recommendations widely	Website on-line and usable.	Month 5
	Project newsletters (3) prepared and distributed (D5.1, D5.2, and D5.3).	Months: 5, 16, 34
	Submission of project deliverable D1.4 (Final Report) to EC	Month 39

The minimum goal for the PubTrans4All project is to develop a BAS that works for wheelchair users; the ultimate goal is to develop a BAS that works for many other user groups. Many platform/vehicle-specific solutions for providing rail vehicle access already exist, but no standardized universal solution.

The project should seek a universal solution that works with all types of rail vehicles on all types of infrastructure. If a single solution is not possible, the consortium will develop a solution that works in a wide variety of cases and show how it could be modified to work in others. The project focuses on improving access on existing rail systems because these systems are well developed and it would be virtually impossible for cost and implementation reasons to replace them with totally new systems. Therefore the PubTrans4All project will seek a solution for a BAS which can be retrofitted in existing rail vehicle as well as incorporated into new ones. This is important because given the long service life of rail vehicles, inaccessible vehicles currently operating will likely be operated well into the future. This is especially true for systems that must make substantial rail infrastructure investments in the coming years; they will be unable to purchase totally new vehicles fleets and reconstruct the station infrastructure, especially the platform height and width, as required for a PRM accessible environment.

As part of developing a universal prototype BAS the project will first evaluate systematically existing BAS, both vehicle-based and platform-based systems. This information will be used to help design the prototype, but also to develop the best practice recommendations for operating existing BAS.

The project partners believe that a serious problem limiting development and implementation of accessibility improvements is that many operators of public transports do not understand the importance of providing accessibility for all. Therefore, the project proposes a dissemination program that targets not only expert audience but also the general public to help raise awareness about accessibility.

The PubTrans4All consortium is a unique combination of experts in all aspects of public transport and accessibility. The consortium consists of 13 partners, all with a profound understanding of the challenges and problems involved in making urban rail vehicles accessible. For example, the consortium's rail transport operators have a detailed understanding of their specific vehicles and infrastructure. The consortium includes six operators half of them are located in Eastern European countries and half in Western European countries – thus providing a good balance and wide variation in vehicle types.

The consortium's coordinator, Rodlauer Consulting, is a consulting firm specializing in projects to improve rail system accessibility. The firm brings a special understanding to the project as the firm's managing director is an electric wheelchair user himself and has been leader in several disabled organizations. Furthermore, the firm has already successfully managed the technical and administrative tasks for diverse complex projects.

PubTrans4All's academic research partners – the Vienna University of Technology and the University of Belgrade – are both experienced in rail vehicle accessibility and design. The institutes will systematically organize the evaluation of existing BAS and state-of-the-art accessibility solutions.

The manufacturing partners of this consortium, MBB Palfinger, Bombardier and Siemens, will build, install and test the prototype BAS. These companies are not simply manufacturers; they are also involved in helping to research new ideas and policies for improving accessibility. This experience gives them a broad perspective that will help inform all the study tasks, not simply the development of prototype BAS. The manufacturers will participate in all study WPs and tasks; this insures that the consortium will have a practical input throughout the project.

Figure 2 – List of PubTrans4All-partners

Number	Beneficiary organisation name	Short name	Country	Date Enter Project	Date Exit Project
1	RODLAUER CONSULTING	ROD	AT	1	39
2	Vienna University of Technology, Institute for Railway Engineering	TUV	AT	1	39
3	University of Belgrade, Faculty of Mechanical Engineering	UB	RS	1	39
4	Austrian Federal Railways	OBB	AT	1	39
5	Verkehrsbetriebe Karlsruhe GmbH	VBK	DE	1	39
6	Swiss Federal Railways	SBB	CH	1	39
7	Bulgarian National Railway Infrastructure Company	NRIC	BG	1	39
8	MÁV-START Railway Passenger Transport Co.	MAV	HU	1	39

9	MBB PALFINGER GmbH	MBB	DE	1	39
10	Bombardier Transportation	BT	DE	1	39
11	Siemens Aktiengesellschaft Österreich	Siemens	AT	1	39
12	Slovenian Railways	SZ	SI	1	39
13	BDZ Passenger Traffic EOOD	BDZ	BG	1	39

Description of Work packages

The following part summarizes shortly the five work packages and their major objectives during the project.

Work Package 1 – Project Management (WP1)

Work Package 1 consists of project management namely providing strategic and daily management to obtain the highest quality results possible within the project deadline and budget. Another major task is to provide the EC with information to gauge project progress and quality on a regular basis. Furthermore responding to questions and comments on the project professionally and in a timely fashion completes the major objectives of WP1.

Communication plays a key role in successful project completion and therefore the project management team (namely ROD as coordinator and the work package leaders TUV, UB and MBB) met frequently – not only in virtual meetings but also in physical meetings – to review project progress and quickly address any scientific or administrative problems. These meetings were supplemented by regular communication via telephone and e-mail.

The consortium had five full consortium meetings over the three-year and three months length of the project. The preparation, execution and post-processing of the five consortium meetings were part of the present WP.

The project management group and participants in the different WPs had additional meetings as part of their work packages.

Figure 3 – Consortium meetings during the project

Meeting Name	Venue	Month	Date
Project Kick-Off Meeting	Brussels	3	30th November and 1st December 2009
Existing BAS Evaluation Meeting	Vienna	9	18th May 2010
BAS Recommendations Meeting	Belgrade	15	30th November 2010
BAS Deployment and Testing	Vienna	25	27th September 2011
BAS Evaluation			
Project Final Report	Vienna	39	6th November 2012

Additionally to these 5 full consortium meetings, the prototype development group (PDG) held six PDG-meetings for discussing and finding the appropriate design criteria for the BAS prototype.

Figure 4 – Prototype Development Group Meetings during the project

Meeting Name	Venue	Date
1st Meeting Prototype Development Group	Hennigsdorf (BT)	8th July 2010
2nd Meeting Prototype Development Group	Bremen/Hoyenkamp (MBB)	16th September 2010
3rd Meeting Prototype Development Group	Vienna (ROD)	16th November 2010
4th Meeting Prototype Development Group	Vienna (ROD)	19th July 2011
5th Meeting Prototype Development Group	Sofia (UB)	9th November 2011
6th Meeting Prototype Development Group	Bremen/Hoyenkamp (MBB)	22nd May 2012

Deliverables planned in the Project PubTrans4All for Project Management (WP1):

D 1.1 – Project Management Plan and Schedule – Month 5 – This will describe the final plan for successfully completion of the study. It will describe the project's management strategies, risk management plan, dissemination plan and a detailed project schedule.

D 1.2 – Periodic Management Report 1 – Month 18 – This presents the project status and administrative information for use in evaluating the project.

D 1.3 – Periodic Management Report 2 – Month 39 – This presents the project status and administrative information for use in evaluating the project.

D 1.4 – Final Management Report – Month 39 – This presents the project status and administrative information for use in evaluating the project. It combines information from Periodic Management Reports 1 and 2.

Last consortia meeting

On November 6th 2012 the consortium had the last consortia meeting in Vienna. Nearly every beneficiary was present at the meeting.

The objectives of the 5th full consortia meeting in Vienna was to inform all project partners about the last steps that had been done in the project and that were very important for the project, for example the construction and test of the lift prototype, as much as the exhibition at the InnoTrans in Berlin and the reaction of the testers concerning the lift. Also the final reporting for the reporting period 60 days after the project's end was explained. Another objective of the 5th consortia meeting was the decision finding about the disposition and the future of the lift.

With active participation the results oft he last few months have been presented. There were four presentations from different beneficiaries.

Design, construction and testing of the lift (MBB):

Ms. Wendelken started with the final steps in the construction work for the BAS-prototype. There was a problem at the installation tests made by MBB. There was a Overlap in the region of the handrail when swivelling the lift out, as much as a collision at the dashboard covering at the boarding area.

At the visit at BDZ in Sofia there occurred a collision with the door lock. MBB has resolved this problem by the appropriate adjustment for the lower lift support.

For testing the lift under laboratory conditions Bombardier Passenger, Siemens AG and MBB developed a Mock-up together to demonstrate the installation and functioning of the lift with the stated loads.

Also there was a short part about the fair InnoTrans in Berlin in the presentation.

First evaluation results of prototype (TUV):

Mr. Tauschitz from the Vienna Technical University presented the first evaluation results from the test drives in Bulgaria. The evaluation was made from the perspective of users and

operators. A total of 10 stations were approached in Bulgaria were there where different problems. One problem, for example, was the use of the lift on to high platforms. The operation of the lift at the tests was about 3 minutes. Trained stuff will take up to 30 seconds less. The experience of the operators were very positive. One problem is only the danger of damage some parts of the lift because of improper operation. The operators wanted a manual for operating the lift.

Also the users had much positive feedback for the lift. They only had a strong feeling of uncertainty when rolling out of the vehicle at low platform heights and sloping platforms. It is a problem to get off the lift on the side when there is a uneven platform. There was an accident with a wheelchair user at the test drives because his front-wheel got into a gap on the platform and he overturned together with the wheelchair. There was a short discussion about this accident and Mr. Rodlauer suggested to get out of the lift backwards.

At the presentation on the InnoTrans in Berlin the users had positive impressions with the lift. The lift was tested in Berlin from wheelchair users, electric-wheelchair users, mentally handicapped children and from children in wheelchairs.

Final Report (ROD):

In the last presentation of the meeting the next organisational steps were discussed. Rodlauer Consulting presented the reports to the audience and the challenges ahead got explained. The tasks for the last steps were sent to all partners with a list with the different deadlines on it for the next two months.

Discussion and further steps - Status and disposition of BAS:

It was noted that the lift should stay in the wagon because it was much work to put the lift in the wagon. Anyway there was the suggestion that the lift should stay at BDZ.

This time the lift is in the wagon at the depot of BDZ because they have to wait for the certificates for the lift and the wagon.

Maybe BDZ will buy a second lift to allow accessibility. Then it is possible to adapt the lift with the new impressions from the tests.

To visit the lift in Bulgaria you should register 2 weeks in advance, to get to know where the wagon with the lift is.

The prototype is built into the wagon and thus finished. In conclusion, the prototype represents a milestone in the accessibility, especially in the barrier-free design of already existing rolling stock. The decision to have the prototype at BDZ is also a milestone for the Bulgarian railways in terms represent barrier-free mobility for people with disabilities.

Work Package 2 – Evaluate Existing Boarding Assistance Systems (WP2)

Work Package 2 consists of collecting data on existing vehicle based and platform based BAS and potential improvement strategies. This was done by using a variety of techniques including traditional desk research, information from experts and consortium members (obtained in surveys and in-depth interviews), and public input.

The evaluation was led by the Vienna University of Technology and the University of Belgrade.

In order to make the evaluation as systematic and useful as possible, it was carried out using a matrix format where the different BAS are rated based on a consistent set of evaluation criteria. The evaluation criteria was developed by the project consortium as part of this work package. The criteria include:

- Cost;
- Ability to use BAS without assistance;
- Ability of BAS to work on various infrastructures;
- Maintainability; and,
- Time required operating the BAS.

The criteria were developed based on literature review, consortium input, expert interviews and public input (including from disabled groups and public transport associations). The evaluation describes each BAS, the extent of its deployment (e.g. how many of the systems are in operation and where), as well as how the BAS performs based on the evaluation criteria.

The consortium planned to hold an expert workshop to discuss the evaluation criteria and initial findings. This workshop should be a special conference for accessibility in order to invite as many experts as possible. The aim was to generate as many alternatives and as much input as possible. This workshop was hold as part of the second full consortium

meeting on 18th May 2012. The consortium invited experts from disabled groups, other rail operators and others to attend this meeting and provide input to the project.

Deliverables planned in the Project PubTrans4All for Evaluate Existing Boarding Assistance Systems (WP2):

D 2.1 – Boarding Assistance System Evaluation Criteria Report – Month 10 – The BAS Evaluation Criteria Report will present the criteria used in this study to evaluate the boarding assistance systems. The report will include sections documenting the process used to select the criteria, the weighting process and a full description of each criterion.

D 2.2 – Existing Boarding Assistance System Evaluation Report – Month 12 – The Existing BAS Evaluation Matrix Report will present an evaluation of the existing boarding assistance systems analyzed in the study. It will include a complete description of the various systems and the evaluation completed based on the project evaluation criteria.

Work package 3 – Develop Boarding Assistance System Improvement Strategies (WP3)

In Work Package 3 the existing BAS evaluation report of WP2 was used to identify strategies for improving accessibility in the rail vehicle boarding/alighting process. This consists of two elements: first, developing best practice recommendations for improving operations of existing BAS; and, second, identifying design concepts for development of a prototype standard BAS that will be developed in WP4. The best practice recommendations describe techniques for improving the operation of existing boarding assistance systems. These recommendations were developed based on the WP2 evaluation and especially by comparing and contrasting how different BAS devices are used by different transport companies in different situations.

The BAS prototype design recommendations also benefit from the project's structured evaluation approach. Specifically, the consortium evaluated the wide range of existing boarding assistance systems to identify the approved and best elements of each system and develop design recommendations that incorporate as many of these approved best elements as possible.

Deliverables planned in the Project PubTrans4All for Develop Boarding Assistance System Improvement Strategies (WP3):

D 3.1 – Recommendations for Improving Boarding Assistance Systems – Month 16 – This report will present recommendations for improving the boarding assistance systems that were evaluated in WP 2. These recommendations will form a set of "best practices" for the application and use of existing boarding assistance systems. The report will also identify the features that should be part of an optimized boarding assistance system.

Work package 4 – Develop and Test Prototype Boarding Assistance Systems (WP4)

The most important part of the PubTrans4All project is the development and testing of a prototype boarding assistance system. The goal was to develop a BAS that can serve as a standard for all rail transport systems. The WP had to be highly innovative since there is no existing technical solution for a standardized BAS up to now.

The BAS should be usable for all types of persons with reduced mobility (PRM) including wheelchair users, people with baby carriages, people with temporary impairments (e.g. broken legs), the blind, etc. The project goal was to develop a BAS that can be used by as many types of users as possible; as a minimum it will serve wheelchair users.

The prototype development process is led by MBB Palfinger with a close cooperation of Bombardier and Siemens. These manufacturers have the experience and facilities needed to complete this task alone, however, the key PubTrans4All project's value added was that these manufacturers will be joined in the design and development of the prototype BAS by a multi-disciplinary team of experts representing interest groups, railway operating companies, users and academics.

The development, the design and the integration of prototype BAS components followed a structured approach from conceptual design to operational testing. This approach consisted of several project phases each of which include specific steps:

- The first phase, conceptual design, began with a brainstorming of all partners to collect all important requirements and to create as many concept ideas as possible. This step should incorporate recommendations from the state of the art survey (WP2 and WP3) and should involve a series of consortium working meetings. It is essential for the project's success that the system specifications are clearly developed in this step since these should form the framework within which the prototype was designed.

The best concepts were selected for further development in preliminary design. The product of this step was Deliverable 4.1: BAS Conceptual Design Recommendations due to in month 10.

- The second phase, preliminary design, consists of clarifying and developing all the prototype BAS concept's technical interfaces. In this step, the design concepts must be continuously assessed in terms of the overall requirements (ergonomics, technical feasibility, safety, cost-efficiency, availability etc.). Next the preliminary design moves on to detailed design. This consists of preparing the actual design for the prototype, due to in month 16. Project Deliverable 4.2: BAS Detailed Design Report summarizes progress on this phase.
- The third phase consists of actually building the prototype. This phase could begin once the design concept was verified and approved by the consortium. The prototype BAS was developed, built and factory tested by MBB Palfinger. In cooperation with Bombardier and Siemens MBB Palfinger also provided a general testing procedure with the prototype to ensure a safe functionality.
- The fourth phase consists of installing the prototype in a test rig. In this phase, MBB wanted to ship the prototype to Bombardier Transport. MBB Palfinger, Bombardier and Siemens worked together to install the prototype in the vehicle. Bombardier prepared and built the interfaces for integrating the BAS on/ within the test rig including a mechanical and/ or electrical installation. The consortium plans to install the prototype BAS into the former EUPAX 1:1 car module for laboratory testing and then in an existing vehicle for field testing. But the test rig wasn't made for such an prototype and it would be damaged for testing the prototype in it. So MBB developed a Mock-Up for testing the prototype.
- The final phase consists of testing the BAS prototype in an operating vehicle. The prototype was tested on one of the consortium's rail transport operating companies. Since these companies have been involved in the project from the beginning it was possible to deploy the prototype more easily. The prototype was tested in terms of safety, operations, refurbishing and practical usage on the rail system in Bulgaria.

Deliverables planned in the Project PubTrans4All for Develop and test prototype boarding assistant system (WP4):

D 4.1 – Vehicle-Based BAS Conceptual Design Recommendations – Month 10 – This is a short report documenting results of the prototype development group's brainstorming process. It is designed to provide information to the full consortium that will enable them to provide input for the BAS preliminary design.

D 4.2 – Vehicle-Based BAS Detailed Design Report – Month 16 – This is a short report documenting results of the preliminary design process completed by the prototype development group. It is designed to provide information to the full consortium that will enable them to provide input into the BAS design process.

D 4.3 – Prototype BAS Development Report – Month 28 – Short Report about the Development of the BAS Prototype that was built into the Mock-Up.

D 4.4 – Vehicle-Based Boarding Assistance System Prototype Design and Evaluation – Month 32 – This is a short Report about the results of testing the prototype in the Mock-Up and on the Bulgarian Railways.

Work Package 5 – Disseminate Project Results (WP5)

In Work Package 5 the project results were disseminated through various media including an internet website, articles for general circulation publications and technical journals, presentations at conferences, fairs, press releases, and the project's periodic and final report.

The PubTrans4All project target the following three main audiences:

- Technical information targeted to people working directly on improving rail vehicle accessibility (e.g. rail vehicle designers, transport operating companies, accessibility planners);
- Technical information targeted to a 'specialist' audience (e.g. non-technician members of disabled person groups who never-the-less have a good understanding of rail vehicle accessibility issues); and,
- General information targeted to everyone (designed to highlight the need for accessibility and good solutions for achieving accessibility).

The PubTrans4All project used a wide variety of traditional and new media to disseminate project results and to encourage comments and ideas from a wide variety of stakeholders. The following media was targeted as part of the dissemination effort:

Internet – The internet is a key dissemination resource. The project website provides up-to-date information on the project activities and results. The website was set up by the end of project month 5 and was regularly updated. It includes the following:

- General project information (including calendar, and contact information);
- Documents for downloading (all public deliverables, newsletters, etc.);

General Circulation Media – The PubTrans4All project developed a series of press releases and articles for general circulation media such as newspapers and magazines. These articles were focused on the importance of accessibility for all users and how the PubTrans4All project is helping improve accessibility. The articles highlighted the support of the EC research funds.

Disabled Person Media – An important audience are disabled persons. Therefore the project prepared and submitted information (e.g. articles, videos, etc.) for these media. Rodlauer Consulting had developed an extensive database of these media (often these are from disabled person organizations or support groups) that it can use to identify these publications.

Project Newsletter – The project newsletter describe current project activities and results. The newsletter was published on the internet and sent to persons on our mailing list (via e-mail or regular mail). It was planned to publish at least the following three newsletters:

- Newsletter 1: Project Goals & Schedule (month 5);
- Newsletter 2: Boarding Assistance Device Evaluation & Recommendations (month 16); and,
- Newsletter 3: Project Results Summary (month 39).

The newsletters were designed to encourage readers to provide feedback and comments to the project team.

Scientific Publications and Conferences – One of the key methods of disseminating project results and information was the preparation of technical papers and making presentations at technical conferences.

At a minimum the project team wanted to develop two technical papers (that should be adjusted to meet the specific interests of particular journals and conferences). The first paper should summarize the evaluation of boarding assistance systems and recommendations for improving these systems (i.e. results of WPs 2 and 3). The second paper should summarize

the project's final report including the evaluation of project prototype boarding assistance systems. Both papers should be very topical for several different scientific and professional journals.

Final Report on Project Results and Technical Reports – The final report on project results integrates project results into a coherent set of recommendations for improving access to public transport rail vehicles.

Deliverables planned in the Project PubTrans4All for Disseminate Project Results (WP5):

D 5.1 – Newsletter 1: Project Goals & Schedule – Month 5

D 5.2 – Newsletter 2: Boarding Assistance System Evaluation & Recommendations – Month 16

D 5.3 – Newsletter 3: Project Results Summary – Month 34

D.5.4 – Final Report on Project Results – Month 39

All deliverables due to the whole project period are summed up in the following table.

Figure 5 – List of planned Deliverables

Deliverables to be submitted for review to the EC		WPWP no.	Lead Beneficiary	Estimated Indicative Person Months	Nature	Dissemination Level	Delivery Date
No.	**Deliverable Name**						
1.1	Final Project Management Plan & Schedule	1	RAB	2	R	PU	5
1.2	Periodic Management Report 1	1	RAB	2	R	PU	18
1.3	Periodic Management Report 2	1	RAB	2	R	PU	39
1.4	Final Management Report	1	RAB	2	R	PU	39
2.1	Boarding Assistance System Evaluation Criteria Report	2	TUV	21	R	PU	10
2.2	Existing Boarding Assistance System Evaluation Matrix Report	2	TUV	18	R	PU	12
3.1	Recommendations for Improving Boarding Assistance Systems	3	UB	36	R	PU	16
4.1	Vehicle-Based Boarding Assistance System Conceptual Design Recommendations	4	MBB	16	R	PU	10

4.2	Prototype BAS Detailed Design Report	4	MBB	20	R	PU	16
4.3	Prototype BAS Development Report	4	MBB	29	R	PU	28
4.4	Vehicle-Based Boarding Assistance System Prototype Design and Evaluation	4	TUV	40	R	PU	32
5.1	Newsletter 1: Project Goals & Schedule	5	RAB	2	R	PU	5
5.2	Newsletter 2: Boarding Assistance Device Evaluation & Recommendations	5	RAB	9	R	PU	16
5.3	Newsletter 3: Project Results Summary	5	RAB	10	R	PU	34
5.4	Final Report on Project Results	5	TUV	2	R	PU	39

Work progress and achievements during the project

In this section each work package reports the following information:

- Summary of progress towards objectives and details for each task
- Highlight clearly significant results
- A statement on the use of ressources

Each work package leader will – if applicable – explain for his work package the reasons for deviations from Annex I and their impact on other tasks as well as on available resource and planning.

If applicable, each work package leader will explain for his work package the reasons for failing to achieve critical objectives and/or not being on schedule and will explain the impact on other tasks as well as on available resources and planning. Corrective actions will be proposed by the work package leader, if applicable.

Work package 1 – Project Management – Progress Overview during the project

Project Management is described in detail below.

Work package 2 – Evaluate Existing Boarding Assistance Systems (WP2) – Progress

Work package Objectives:

There are two main objectives in the Work Package 2:

- Develop criteria for evaluating public transport boarding assistance systems from the perspective of usability, efficiency, effectiveness and other criteria
- Complete an evaluation of existing boarding assistance systems

The objectives are planned to be achieved through realisation of four tasks:

Task 2.1 – Develop Evaluation Criteria;

Task 2.2 – Collect Boarding Assistance System Evaluation Data

Task 2.3 – Evaluate Existing Boarding Assistance Systems

Task 2.4 – Prepare Evaluation Criteria Report and BAS Evaluation Report

Summary of progress in the work package:

WP2 has been finished successfully, the deliverables D2.1 and 2.2 have been submitted to the EC. Following tasks have been done in WP2:

Passenger surveys: Passenger surveys (railways in AT, CH, HU, BG, SRB, HR, BiH, CG and SLO and local operator VBK) have been done for getting the basic knowledge and information about customer‟s needs and expectations regarding to railway access. More than 15.000 questionnaires have been filled in and offer an excellent research base. All questionnaire data has been entered and has been statistically interpreted. The results are part of the deliverable D2.1. The aim of the passenger surveys was to get the basic information about needs and expectations but also about special difficulties regarding to their unique situation and the boarding process.

Association's surveys: To get the required input about the special problems of the different groups of handicapped as many different handicapped associations as possible have been asked directly, either per e-mail questionnaires or personally in situ. The associations have been contacted – a big part of them has answered and submitted very good information.

Operator surveys: All operators that are partners in the PT4All consortium and as many of the other European and partly non-European countries have been asked to give input and further information about their used systems (general and technical information, experiences etc.) about the evaluation criteria and about technical and operational framework requirements.

Following questionnaires have been submitted to the operators: general questionnaire for getting the required overview, evaluation criteria questionnaire, questionnaire with detailed information about the used boarding assistance systems and about technical and operational framework requirements.

All operators that are project partner have filled in all the questionnaires. About 50% of the other operators have also given the asked information. But the consortium has learned that it is absolutely necessary to go to the operators, visit them and their systems personally and ask them the questions in situ. By that all required information could have been collected. This option has been a little bit more complicate and needed more time, nevertheless by that the deliverables could have been finished with all required information within the planned time.

The operator‟s surveys and the excursions to them were required in order to learn about different existing and used systems for accessible boarding. Beside the general system information it has been important to collect the information about satisfaction or dissatisfaction of the operators but also customers. The customer related information has been given by the associations.

Literature and web research: For gaining an overview and basic data regarding the topics of: existing systems, experiences, special needs etc. intensively literature and web researches in all European and many non-European countries were done. This information has been very important for the deliverable D2.2 for the system overview.

As part of WP4 but organized by the WP2-leader a **student's competition** has been organized by the TUV in order to get as many creative and innovative ideas for a new system as possible. The competition has been finished in March 2010 and the submitted proposals have been evaluated by the consortium partners. 38 proposals have been submitted by Students from Austria, Bulgaria, Croatia, Hungary, Bosnia and Herzegovina and Serbia. The winners are from Austria and Serbia. They got their prices (project external prize money from sponsors) at the conference Public Transport – Accessibility for All in Vienna (19th of May).

All the ideas were discussed at the 2nd consortium meeting and have been used as input for the brain storming process.

An **expert workshop** took place on 19th May 2010 to discuss the evaluation criteria and initial findings. This workshop was a special conference for accessibility in order to invite as many experts as possible. The aim was to generate as many alternatives and as much input as possible. The expert workshop needed one day – it took place on the second day of the 2nd consortium meeting. Besides getting the final inputs regarding to the evaluation criteria and the customer needs the first project results and the project on itself have been disseminated perfectly to a large auditorium of interested international guests. About 70 experts from several European countries took part in this conference.

The workshop looked like following: The first part included 6 lectures about the topics of accessibility, special customer needs, and technical and operational framework requirements. Beside international experts also several lectures out of the consortium provided much information about the topic and the project on its own. One aim of the project which has been defined in the proposal has been to sensitize on the topic of accessibility. This aim has also been achieved very effectively by this expert workshop. The second part of it consisted of two parallel workshops to discuss the special needs of customers and handicapped, of the operational and of the technical requirements.

Work package leader (TUV) of WP 2 evaluated the tests of the lift and also the evaluation of the general requirements and the user requirements for a boarding assistance system. So the Technical University of Vienna created the **Deliverable 5.4 – Final Report on Project Results.** This Deliverable includes a report about the ideas for lift design, the decision making process and how it came to the final prototype.

The Deliverable contains a statement about the existing conditions of boarding assistance systems in public transportation. Also it contains the general requirements for a boarding assistance system as much as the specific users' requirements, the specific operators' requirements and the technical and operational requirements in detail for a BAS for UIC wagons.

The Deliverable contains the evaluation results of the factory test in the test bench from our project partner MBB Palfinger. The test bench, a welded steel construction, was specially made for testing the lift. Also there are evaluation results of the test of our prototype on the

railway network in Bulgaria by our project partner BDZ where the lift was installed into a UIC-wagon of the Bulgarian State Railways.

In this Deliverable you can also find a report about the experiences of the demonstration of the lift at the fair InnoTrans in Berlin. The InnoTrans in Berlin took place in September 2012. The lift was presented installed into a UIC-wagon at the outside area of InnoTrans 2012.

The Deliverable also includes evaluation results about the experiences of users of the lift in other words the impressions of the passengers about the lift.

Another important point are the recommendations that are intended to improve the prototype which are also discussed in this Deliverable. These recommendations may affect the construction and the installation of the lift, but can also concern the operation and staff training.

Work package 3 – Develop Boarding Assistance System Improvement Strategies (WP3) – Progress Overview during the project

Work Package Objectives:

There are two main objectives in the Work Package 3:

- Develop recommendations for improving rail vehicle accessibility using existing vehicle based and platform-based boarding assistance systems
- Develop design recommendations for building a prototype universal vehicle-based boarding assistance system

The objectives are planned to be achieved through realisation of three tasks:

Task 3.1 Develop best practice BAS recommendations;

Task 3.2 Develop design recommendations for new BAS; and

Task 3.3 Prepare recommendations report D3.1.

Summary of progress in the work package:

According to the Project Time Plan, Work Package 3 started in April 2010. Initially it was planned to make Best practices recommendations and Design recommendations drafts as documents for discussion on the second consortium meeting. Since the meeting was held

one month earlier than initially scheduled, it wasn't possible to prepare draft recommendations for this meeting.

The tasks 3.1 Develop Best Practices BAS Recommendations and 3.2 **Prepare Design Recommendations for Improved BAS** are strongly based on the results of the WP2, especially on deliverable 2.2. **Existing Boarding Assistance System Evaluation Report**. Since the finish of deliverable 2.2 was scheduled for August 2010 it was difficult to finish work on tasks 3.1 and 3.2 parallel with task 2.2.

On the other hand, initial project time plan envisaged a relatively long period (4 months) just for task 3.3 **Prepare Boarding Assistance Systems Recommendations Report**. It came out that it is more realistic to prolongate terms for tasks 3.1 and 3.2 until November 2010, retaining at the same time the final term for deliverable 3.1 **Recommendations for Improving Boarding Assistance Systems** in month 16 (December 2010). In this way there was enough time to elaborate tasks 3.1 and 3.2 in the way that assured appropriate quality of the deliverable 3.1, without impact on the schedule of the WP4 and the whole project.

From April to June 2010 some activities from task 3.2 that were independent from results of WP2 were performed. This was the case with technical conditions for installation of the BAS in the existing UIC type wagons. According to DOW it is foreseen to install the new BAS in one UIC wagon of the Bulgarian railways. Several activities in this mater show the importance of studies in this direction. At the meeting of the prototype development group held on June 28th 2010 in Hennigsdorf, results of this analysis was discussed as a base for the BAS prototype initial design studies. These activities were continued and it was the most significant intermediate result within WP3 at the time. This work supported WP4 and was important to maintain the project time plan.

At the same time, based on the partially available results of WP 2 the work on the tasks 3.1 and 3.2 was continued, and intensified in the period August-October 2010.

Further subject related analyses of existing European or national standards like EN"s, TSI PRM, RVAR, UIC, and documents prepared by some international bodies or organizations like COST, CEN, ERA and UITP were performed, in order to make a comprehensive set of recommendations for usage of existing BAS. The results of some EU Projects dealing with accessibility of rail vehicles were also taken into consideration.

In task 3.1 **Best Practices BAS Recommendations** are at first given recommendations that can be applied to all types of BAS. They include mainly the organisational measures that can

improve the usage of the existing BAS.

The major part of the recommendations addresses specifics of typical boarding/alighting situations. It was decided to divide these recommendations into four typical boarding/alighting situations as every of them have specific requirements:

- Level boarding/alighting - One or two steps upwards boarding and downwards alighting - Step down boarding and upwards alighting - Boarding/alighting in case of a height difference of more than approximately 400 mm

For each of these situations specific recommendations were **stipulated.**

In task 3.2 Prepare Design Recommendations for Improved BAS the first activity was further clarification of the technical conditions and constraints to fit the BAS in the existing UIC type wagons. In close cooperation with BDZ and MBB, UB has prepared some drawings and information which were discussed on the second Prototype development group Meeting held on 16th September 2010 in Hoykenkamp (Ganderkesee). This activity considerably facilitated the decisions to reduce the number of possible solutions for the future prototype of the BAS. In this work, all manufacturers and university partners of the consortium were involved.

At the same time it became clear that BAS fitting in existing UIC wagons, with a clear door width of only 800mm, narrow stairs in the vicinity of the buffers, several constraints of the existing place in entrance area etc. makes this task extremely challenging, with no simple solutions.

Further considerations of some significant parameters of the new BAS were based on the decision that it is much better to find out a technical solution which can be used by more than 90% of the wheelchair users, even with small restrictions in relation to existing standards and recommendations, than to insist on maximum requirements that are obviously for UIC wagons not feasible. At the same time a technical solution for the worst case condition as in UIC wagons offer a universal BAS solution, as it can be applied in the majority of all other cases (wagons with wider doors, wagons without side buffers, with more available place in entrance area, etc.).

At the end of this task the recommendations for improved vehicle based BAS were stipulated as the significant support to WP 4 and development of the new BAS prototype within project PubTrans4All.

After that the work for task 3.3 **Prepare recommendations report** D3.1 i.e draft version of the Deliverable 3.1 **Recommendations for Improving Boarding Assistance Systems** was started. The report consists of two main parts that correspond to task 3.1 and 3.2. The deliverable was prepared by the University of Belgrade (UB) and Vienna University of Technology (TUV). Railway operators, manufacturers, as well as members of the consortium have also contributed to this report. The inputs of meetings of the Prototype Development Group, which includes both universities, manufacturers participating in the consortium and representatives of Bulgarian Railways (BDŽ), after being discussed at the 3rd Consortium Meeting, as well as feed-back of all consortium partners were included in the final version of the deliverable.

The final version of the deliverable 3.1 **Recommendations for Improving Boarding Assistance Systems** was finished and sent to EC according to the Project Time Plan in December 2010.

When the lift was finished there were also a few recommendations and changings to make. Especially when the lift was builed into the wagon of the Bulgarian railways, some changes had to be made. They had to replace the existing mechanical coupling of the folding step with the door mechanism by means of a pneumatic actuator, shifting of the head wall in the entrance in order to avoid a collision with the lift during the lift swing out. The University Belgrade mentioned also that it is necessary to remove the outer double wall between the toilet and the side corridor to ensure the corridor width for a wheelchair and there were also lift-fixing plates installed.

UB also made some other recommendations for the possible correction of some problems that occurred during the tests of the lift. For example there were an independent unscrewing of the platform locking, or there has to be made a correction at the position of the feet of the roll-off-protection. But that were problems that are relatively easy to solve.

Work package 4 – Develop and Test Prototype Boarding Assistance Systems (WP4) – Progress Overview during the project

Work Package Objectives:

The main objectives of Work Package 4 are:

- Developing conceptual and preliminary design concepts for a vehicle-based prototype of a boarding assistance system (BAS)
- Building and testing a prototype vehicle-based boarding assistance systems based on the concept decision of the consortium

The objectives shall be achieved by fulfilling five superior tasks:

Task 4.1 – Vehicle Based BAS Prototype Conceptual Design

Task 4.2 – Vehicle Based BAS Prototype Preliminary Design

Task 4.3 – Build BAS Prototype

Task 4.4 – Test BAS Prototype in Laboratory

Task 4.5 – Test BAS Prototype in Operating Vehicle

Summary of progress in the work package:

The tasks 4.1 and 4.2 of WP4 have successfully been completed during the first project period. The deliverables D 4.1 – Vehicle-Based BAS Conceptual Design Recommendations and D 4.2 – Vehicle-Based BAS Preliminary Design Recommendations had been submitted to the EC in accordance to the project time schedule. Task 4.3 started in January 2011 by creating first drafts and models of the new BAS prototype.

D 4.1 – Vehicle-Based BAS Conceptual Design Recommendations

Task 4.1 consists of developing conceptual design recommendations for the prototype of the vehicle-based boarding assistance system. The task started in study month 2, directly following the project kick-off meeting, and was finished one month after the second

consortium meeting in month 9 when the decision was made to develop three possible boarding assistance systems (BAS) design scenarios that should be reviewed more in detail.

Task 4.1 started with a brainstorming process that analysed and assessed the „must haves" and the „nice to haves". This was done by the entire consortium. The brainstorming was carried out by the TU Vienna during the first kick-off project meeting (Brussels 30.11.-01.12.2009), as well as by a series of meetings and exchanges of ideas via the internet during the first nine months of the project. The brainstorming results as well as the results of Deliverable 2.1 Boarding Assistance System Evaluation Criteria Report and of two student competitions - the first one organised by TU Vienna and OBB in 2006 in Austria and the second international one organised by the PubTrans4All consortium - are the basis for the design concepts that are part of Deliverable 4.1 and were presented by MBB Palfinger at the second full consortium meeting on May 18th in Vienna for input and discussion by the entire consortium.

The deliverable 4.1 shows all the conceptual design recommendations that have been created by MBB Palfinger in cooperation with the whole consortium. It includes the description of some general requirements and recommendations as well as a short description of the different concepts and the advantages and disadvantages of each system which were regarded as potential solutions for the BAS prototype at that time.

D 4.2 – Vehicle-Based BAS Preliminary Design Recommendations

Task 4.2 consists of developing the preliminary design of the prototype of the vehicle-based boarding assistance system. The task started in study month 10 directly following the second consortium meeting, and ended one month after the third consortium meeting in month 16 when the decision upon the preliminary design of the new boarding assistance systems (BAS) was made.

Task 4.2 is based on the results of task 4.1 “Vehicle Based BAS Conceptual Design Recommendations” where several design concepts for a new BAS are illustrated as well as the recommendations that derived during the preparation of Deliverable 3.1 “Recommendations for Improving Boarding Assistance Systems”. The different design concepts were reviewed and discussed during the second consortium meeting (Vienna 18.05.2010), with the result that three concepts (ramp, elevator lift, convertible step lift) needed detailed verifications by the Prototype Development Group (PDG).

The first meeting of the Prototype Development Group (Berlin - Hennigsdorf 01.08.2010) was

used to compare and evaluate the first results of the technical feasibility of the three different variants. In addition the University of Belgrade presented the technical conditions and constraints of common UIC coaches and modern coaches. After an intense discussion within the PDG the decision was made to no longer take into consideration the ramp and the convertible step lift concepts. Instead the innovative concept of an elevator lift was investigated in greater detail. The first ideas and proposed concept of an elevator lift comprised of various complex and apparent insolvable requirements, so that the PDG decided to search for additional concepts until the following PDG meeting.

The detailed technical analysis of MBB Palfinger and the University of Belgrade which were presented during the second meeting of the PDG (Bremen 16.09.2010) showed that all three types (ramp, elevator lift, convertible step lift) are not applicable in classic UIC-wagons as well as on modern high speed trains due to technical limitations e.g. available space and typical current wagon designs. Therefore new design recommendations were derived from the results of the evaluation of existing BAS (Deliverable 2.2), the results of the students‟ contest held by the TU Vienna, and internal developments of MBB Palfinger. All participants concluded that until the following meeting of the PDG, three new concepts (sloping mast lift, hinge lift, moveable twin pillar linear lift) and corresponding feasibility tests in a UIC wagon should be carried out by MBB Palfinger. Furthermore the decision was made to concentrate on a solution for UIC vehicles (see also Deliverable 3.1, paragraph 3.1.1), and therefore to adapt the design recommendations regarding platform width, capacity and other parameters.

During the third PDG meeting in Vienna (16.11.2010) additional design constraints and recommendations in UIC coaches were presented to the PDG. In particular, the required space to install a BAS within the vehicle was investigated in detail with the result that only two small areas inside the coach can potentially be used to install and stow a BAS. Based on the recommended area the feasibility tests for implementing the three new concepts (sloping mast lift, hinge lift, moveable twin pillar linear lift) in a standard UIC coach showed that these concepts were not applicable on UIC or high speed trains.

Due to the recommended space for a BAS it was decided to check upon the option of a swivel lift application with a possible swivel radius of 180° and 270° at the same time. Although there were some technical constraints that had to be considered in detail the PDG decided to propose to the consortium to develop the prototype vehicle-based boarding assistance system based on the swivel lift concept. At the third consortium meeting (Belgrade November 30th to December 01st 2010) the consortium of the project

PubTrans4All decided to choose the swivel lift concept for the development of the BAS prototype.

D 4.3 – Build BAS Prototype

Task 4.3 consists of building and factory testing the vehicle-based boarding assistance system, based on the chosen swivel lift concept (270°). The task started in month 17 and is mainly focusing on the very restrictive conditions/requirements of the UIC wagons. The development group of MBB Palfinger is constantly considering the guidelines of Deliverable 3.1 Recommendations for Improving Boarding Assistance Systems for the design of the BAS prototype during task 4.3.

After the decision had been made that the development is mainly focused on UIC wagons, MBB Palfinger has already started to create a 3D-model of a standard UIC entrance area for a virtual installation of a 270° swivel lift. Based on this model MBB Palfinger is trying to implement the recommendations of Deliverable 3.1.

D 4.4/ 4.5 – Test BAS Prototype in Laboratory/ in Operating Vehicle

Task 4.4/ 4.5 consists of testing the BAS prototype in a laboratory environment and in an operating vehicle. Task 4.4 will be led by Bombardier (BT) in close cooperation with MBB Palfinger and Siemens. The Bulgarian State Railways (BDZ) will be the leader of task 4.5.

During the first PDG meeting in Hennigsdorf (BT) the full-size mock-up railcar that had been used in the “EUPAX” project was designated for the laboratory tests and has been presented to the Prototype Development Group. Bombardier (BT) indicated that a successional publication of the test mock-up at an exhibition etc. is not planned. That is the reason why a conversion of an exhibition mock-up into a test mock-up was not recommended. Major adjustments will demolish the existing design and the structure of the EUPAX mock-up, which are not necessary for exclusive testing purposes. Therefore MBB Paflinger, Siemens and BT are currently discussing a new concept of a variable testing device where different floor heights, door widths and other parameters (eg. platform height, gap between platform and vehicle, etc.) could be simulated. This slight amendment of the work plan had been forwarded and approved by the responsible Program Officer in August 2010.

After the test of the prototype on the mock-up the prototype will be delivered to the Bulgarian partner BDZ where the main practical testing for approximately six months will be carried out with an operating vehicle in passenger mode. For that purpose a detailed test program will

be developed by the Product Development Group and approved by all Consortium partners.

The lift was successfully built by MBB. It was first tested in a specially constructed mock-up and then it was tested on the rail network from Bulgaria installed in a UIC wagon.

There were a few problems while building the lift into the wagon and testing it, but it was possible to solve all this problems. There was a Overlap in the region of the handrail when swiveling the lift out, as much as a collision at the dashboard covering at the boarding area.

At the visit at BDZ in Sofia there occurred a collision with the door lock. MBB has resolved this problem by the appropriate adjustment for the lower lift support.

For testing the lift under laboratory conditions Bombardier Passanger, Siemens AG and MBB developed a Mock-up together to demonstrate the installation and functioning of the lift with the stated loads.

MBB was also present at the InnoTrans and presented the lift prototype to an interested public.

Work package 5 – Disseminate Project Results (WP5) – Progress Overview during the project

Work Package Objectives:

The major objectives in Work Package 5 are:

- Disseminate the project´s scientific results and recommendations as widely as possible.
- Raise awareness of the importance of public transport accessibility at the local, national and international levels.
- Provide information that enables key actors to implement project recommendations.

The realization of these objectives was planned through the fulfillment of six tasks:

Task 5.0 Scientific management and risk management

Task 5.1 Finalize dissemination plan

Task 5.2 Identify and analyze target audiences

Task 5.3 Create and maintain project website

Task 5.4 Create and distribute dissemination media and

Task 5.5 Prepare final report

Summary of progress in the work package:

Given the importance of dissemination, Work Package 5 takes place throughout the full project duration (Month 1 to month 39).

Task 5.0 Scientific Management and Risk Management is part of Project Management and is described under this section.

Task 5.1 consisted of finalizing the project´s dissemination plan due to month 5. An important part of this task was to delegate specific responsibilities to specific consortium team members (e. g. team member A will produce a technical journal article for the March edition of a particular journal). The finalized dissemination plan was included in the **Project Management Plan** (Deliverable 1.1) and is updated on a regularly basis by the consortium members.

Task 5.2 Identify and analyze target audiences is another major target of Work Package 5. First, dissemination markets had to be identified and analyzed according to their needs. Second, the best methods for communicating with these audiences were identified. This work was accomplished parallel to task 5.1 and accurately harmonized from month 3 to month 5.

Task 5.3 An important part of the dissemination process is the project website that provides up-to-date information on the project activities and results. The website www.rabcon.eu/pubtrans4all first went online in month 5 was updated on a regularly basis and included the following information:

- General project information (aims of the project, project partners, etc.)
- Project partner area (including a password-protected area of the website for the exclusively use by project partners to post draft documents and transfer information)

It became obvious that the needs of the consortium as well as the aim to inform the interested public on the highest possible standard made a relaunch of the project website necessary. As the project consortium preferred to directly communicate via telephone or e-mail the project partner area on the website became obsolete. Furthermore some other adoptions became necessary. The coordinator wanted to have the deliverables ready for download on the new website and project meetings should also be announced on the project-homepage. After three month of construction and adaption work, the new website www.pubtrans4all.eu was presented to the project partners on the 3rd full consortia meeting in Belgrade and replaced the old one in December 2010 (month 16).

The whole website is compliant to the requirements of WAI-AAA (Internet Standard for barrier-free web access) and is accessible in German and English. The coordinator maintains and updates the project website on a regularly basis. The deliverables already submitted to the European Commission (and with dissemination level "Public") are shortly described and can be downloaded in pdf. format. Furthermore the conference proceeding is available on the project-website and can be downloaded by the interested public.

Task 5.4 consists of creating and distributing dissemination materials. The task includes three parts:

1. Corporate design – development of standard templates/information
2. Preparation of actual dissemination materials
3. Quality control – technical editing and review

The first part – project corporate design – consists of developing standard templates and information to create a uniform format for project publications and media (like newsletter, press releases, etc.). These templates include the project logo and offer standard graphics for use in all types of media. Standard text describing the project and objectives for various audiences were prepared. This text was written and edited in November 2009 (month 3) and is completed and adapted by the coordinator on a regularly basis according to the project results and latest developments.

The second part – preparation of actual dissemination materials – consists of the actual development of materials for dissemination. This includes the internet, general circulation media, disabled person media, project newsletter, video media, scientific publications and conferences and the final report on project results as well as technical reports.

The internet appearance as a key dissemination resource has already been described earlier. But not only the project website seeks to disseminate information about PubTrans4All also the consortium members disseminate the project on their websites, providing information to search engines and add technical information to appropriate sites.

Concerning print media, a few articles have been published by the coordinator for example in "The Parliament Magazine´s Research Review - European Research & Innovation". One article was published in issue 12 (March 2010) and a second article in issue 13 (June 2010). Both gave a short description of the project funded under the 7th framework programme of the EC and its major aims and stressed the importance of accessibility for rail vehicles for all persons. Furthermore the conference held in May 2010 was announced

to the interested public. For further information about the project the address project homepage was mentioned. Other project partners have also published articles in scientific media, company magazines and the press.

At a minimum 3 project newsletters (Deliverables 5.1, Deliverable 5.2 and Deliverable 5.3) were published during the whole project. The first newsletter (Deliverable 5.1 – **Project Goals and Schedule**) was due to January 2010 (month 5) and disseminated the projects goals and schedule. The second newsletter – **Boarding Assistance Device Evaluation & Recommendations** – summed up the major results of Work Package 2 and Work Package 3 and was due to December 2010 (month 16). The third Newsletter (Deliverable 5.3 – **Project Results Summary**) was due to June 2012 (month 34). It contains the project results that were reached up to this point. All newsletters were written by the coordinator, proofread and approved by the whole consortium, sent to the EC, distributed to the consortium´s contact database and can be downloaded on the project website.

The third part of this task – Quality control – technical editing and proofreading – consists of reviewing deliverables and dissemination materials produced by the consortium members. This ensures that the deliverables always meet the highest possible editorial standards and is accurately performed. This was done on a regularly basis in case of need over the full project duration.

The following deliverables were edited by the WP leaders, reviewed by the consortium members and released and sent to the EC by the coordinator:

Deliverable 1.4 - Final Management Report is the underlying document. It is due to month 39 at the ending of the project and will be transmitted to the EC in time.

Task 5.5 Prepare final report: This is the underlying document which will be submitted to the EU commission 60 days after the ending of the project the latest. It will consist the project objective of the period as much as the description of work progress and achievements of the work packages during the project and the explanation on the use of resources of each beneficiary.

There was also a so-called Dissemination Tour organized by the project coordinator. At the Dissemination Tour the coordinator and the WP-Leaders from WP2 (TUV) and WP3 (UB)

presented the project and its results to an interested audience in several cities in Europe but especially in Eastern Europe cities. The Dissemination Tour had four destinations:

- Brussels, Belgium – 28th March 2012
- Budapest, Hungary – 9th May 2012
- Zagreb, Croatia – 30th May 2012
- Belgrade, Serbia – 13th June 2012

Information and pictures about the Dissemination Tour can be seen also on the project's website.

Dissemination Tour

Since the last periodic report Rodlauer Consulting organized a so called Disseminationtour. The intention of the Disseminationtour was to reach as much people as possible who are affected by the project and the projects' objecitves. The stations of the Disseminationtour were Brussels, Budapest, Zagreb and Belgrade. Please find the list of the several destinations below.

In every city Dr. Bernhard Rüger from the Technical University of Vienna, Prof. Goran Simic from the University Belgrade and Mag. Barbara Birkenmeyer from Rodlauer Consulting presented the intentions, goals and achievements of the project PubTrans4All.

The Disseminationtour was attendet by many interested parties. At the different stations of the Disseminationtour many interessted people, disability associations and disabled persons participated. We saw that it was necessary to go directly to the people to show them our work and to point out what this work could change in their quality of life. That is also why we choosed mainly cities in Eastern Europe, because there the accessibility is not as good as in other countries in Europe.

Figure 6 – List of Disseminationtour Stations

Number of Station	Venue	Month	Date
1st Station of Disseminationtour	Brussels, Belgium	31	28th March 2012
2nd Station of Disseminationtour	Budapest, Hungary	33	9th May 2012
3rd Station of Disseminationtour	Zagreb, Croatia	33	30th May 2012
4th Station of Disseminationtour	Belgrade, Serbia	34	13th June 2012

Disseminationtour Brussels (March, 28th 2012)

The first destination of our disseminationtour was the European capital Brussels. We welcomed guests from various industries at our presentation. Among other representatives from the European Disability Forum, from the European Multiple Sclerosis Platform and also from STIB-MIVB, the largest Belgian urban public transport company, were among the guests. Focuses of discussion at the first destination of our Disseminationtour were the possibility of installing the lift also in tramways. Generally, an installation into trams has been planned, but often there are already low floor vehicles purchased. Thus, the installation of the lift in a UIC wagon is more urgent. There was also a discussion about the possibility of operating the lift for persons in big electronic scooter/wheelchairs. The lift can carry up to 350 kg loading.

Disseminationtour Budapest (May, 9th 2012)

In May the PubTrans4All presentation as part of the Disseminationtour was held in Budapest. The event was well attended and we were glad about a full auditorium. Our project partner from the MÁV, the Hungarian railways, Mr. Gitta Ferenc was also our guest at this destination of the disseminationtour. Of course there were especially questions addressed to Mr. Gitta Ferenc at the discussion that followed our presentation.

Disseminationtour Zagreb (May, 30th 2012)

Also at the Disseminationtour in Zagreb our project attracted great interest. Many Croatian disability organizations attended our event and they hat great interest in the course and the results of our project. Also we welcomed one representative from HŻ, the Croatian railways. Many questions regarding the lack of accessibility at the trains and the train stations of the Croatian railways were addressed to the representative from the Croatian railways. Other questions from our guests were addressed to Prof. Simic from the University of Belgrade.

Disseminationtour Belgrade (June, 13th 2012)

The last destination of our Disseminationtour was finally Belgrade. In June the presentation of our project took place in the Serbian capital with many interested guests from different sectors. Among others we welcomed representatives from the Institute of Transportation – CIP. In addition to many other organizations from Belgrade and the surrounding environment, we could welcome the Accessibility Audit Association, which has as part of the European Concept for Accessibility already done a lot in the area of accessibility. Focuses of discussion in Belgrade were especially the bad condition of the Serbian railways. It was mentioned that the Serbian Railways have to make many more changes before they could deal with absolute accessibility at their trains and stations. In the current trains of the Serbian railways the entry and exit is difficult, even for a physically healthy person. Also the national and international railway connections need to be developed.

Project Management (WP1)

This section summarizes the management of the consortium activities during the whole project.

Consortium management tasks and achievements

The project management team includes Rodlauer Consulting as coordinator, the Technical University of Vienna and the other work package leaders who appointed to manage scientific efforts, administration and risks for their particular WP.

The project management team utilizes state of the art project management tools and techniques throughout the whole project. Communication plays a key role and therefore the project management team meets frequently (in both virtual meetings and physical meetings) to review project progress and quickly address any scientific or administrative problem. These meetings are supplemented by regular correspondence via telephone or e-mail.

In general project management consists of addressing day-to-day issues that arise in the project and is designed to guarantee a smooth work flow within the project. That includes for Rodlauer Consulting as coordinator project scheduling and coordination and communication at all levels – intra project consortium, public and European Commission. A great part of project management is kept with organizing and managing the project´s central record keeping system, including technical findings and financial reports, compiling regular project internal financial and work progress reports and monitoring compliance by each beneficiary with their obligations under the signed grant agreement.

Deliverables planned in the Project PubTrans4All for Project Management:

D 1.1 – Project Management Plan and Schedule – Month 5 – This will describe the final plan for successfully completion of the study. It will describe the project's management strategies, risk management plan, dissemination plan and a detailed project schedule.

D 1.2 – Periodic Management Report 1 – Month 18 – This presents the project status and administrative information for use in evaluating the project.

D 1.3 – Periodic Management Report 2 – Month 39 – This presents the project status and administrative information for use in evaluating the project.

D 1.4 – Final Management Report – Month 39 – This presents the project status and administrative information for use in evaluating the project. It combines information from Periodic Management Reports 1 and 2.

Deliverable 1.1 – **Final Project Management Plan &Schedule** was written by Rodlauer Consulting in close coordination with the whole consortium and transmitted to the EC as scheduled and without delays. As our Project Officer had some slight change requests concerning the first version, the changes were implemented in the new version which was transmitted to the EC in February 2010 and finally approved by the EC.

The “Project Management Plan” defined in accordance with the definitions and regulations in the Annex I and the Consortium Agreement of the project “Public Transportation – Accessibility for All” (PubTrans4All) the implementation of the general working mechanisms of the project.

It was designed to guide the PubTrans4All project participants through all aspects of the project’s management and coordination activities. It is to serve as a reference tool as it brings together all of the procedures and policies that have been agreed upon since the beginning of the project by the project coordinator, the dissemination work package participants and the management support team. The Project Management Plan & Schedule is updated on a regularly basis.

Deliverable 1.2 – **Periodic Management Report 1** contained the previous status of the project. Objectives, changes, problems, and solutions have been summarized in this report and submitted to the EU. Also the report contained the description of each work package and the explanation of the use of resources from each beneficiary.

Deliverable 1.3 – **Periodic Management Report 2** – Month 39 – The coordinator has to fulfill a kind of this Report also in the system ECAS for giving information about the project status to help evaluating the project.

Deliverable 1.4 – **Final Management Report** is the underlying document which will also be transmitted at the ending of the project.

Figure 7 – List of planned Deliverables

Deliverables to be submitted for review to the EC		WPWP no.	Lead Beneficiary	Estimated Indicative Person Months	Nature	Dissemination Level	Delivery Date
No.	**Deliverable Name**						
1.1	Final Project Management Plan & Schedule	1	RAB	2	R	PU	5
1.2	Periodic Management Report 1	1	RAB	2	R	PU	18
1.3	Periodic Management Report 2	1	RAB	2	R	PU	39
1.4	Final Management Report	1	RAB	2	R	PU	39
2.1	Boarding Assistance System Evaluation Criteria Report	2	TUV	21	R	PU	10
2.2	Existing Boarding Assistance System Evaluation Matrix Report	2	TUV	18	R	PU	12
3.1	Recommendations for Improving Boarding Assistance Systems	3	UB	36	R	PU	16
4.1	Vehicle-Based Boarding Assistance System Conceptual Design Recommendations	4	MBB	16	R	PU	10
4.2	Prototype BAS Detailed Design Report	4	MBB	20	R	PU	16
4.3	Prototype BAS Development Report	4	MBB	29	R	PU	28
4.4	Vehicle-Based Boarding Assistance System Prototype Design and Evaluation	4	TUV	40	R	PU	32
5.1	Newsletter 1: Project Goals & Schedule	5	RAB	2	R	PU	5
5.2	Newsletter 2: Boarding Assistance Device Evaluation & Recommendations	5	RAB	9	R	PU	16
5.3	Newsletter 3: Project Results Summary	5	RAB	10	R	PU	34
5.4	Final Report on Project Results	5	TUV	2	R	PU	39

Prefinancing

The total sum of the prefinancing transferred to the PubTrans4All consortium partners exactly correspond to the prefinancing received from the EC EUR 1‟355‟746.90.

Figure 8 – List of Prefinancing

Project partner	Amount Prefinancing (EURO)
BDZ	85’725.03
BT	86’778.03
MAV	16’740.00
MBB	273’240.08
NRIC	35’932.51 (50% of the planned prefinancing)
OBB	11’677.50
ROD	273’750.08
SBB	23’062.51
Siemens	97’650.03
SZ	17’156.26
TUV	228’587.32
UB	60’300.02
VBK	109’215.03
TOTAL SUM	**1’355’746.90**

Due to changes in the internal organization of NRIC and reduced personnel costs, NRIC has only received 50 % of their originally provided prefinancing. The remaining 50% of the prefinancing of NRIC remained on the project coordinators’ account (EUR 35‟932.51). This procedure was agreed with and approved by the EC.

Interim Payment

In the following table there are the amounts from the interim payment and how they were splitted among the partners. However, it is also important to note the budget shifts and changes in the next part.

Figure 9 – List of Interim Payment

Project partner	Amount Interim Payment (EURO)
ROD	36.267,05
TU Vienna	30.478,23
University Beograd	8.039,98 was shifted to TUV (explanation below)
ÖBB-PV AG	1.557,00
VBK	5.000
SBB	3.074,99
NRIC	9581,98 waived the interim payment, remained on the coordinators account
MAV	2.232,00
MBB	36.431,92
Bombardier	11.570,37
Siemens	13.019,97
SZ	2.287,49
BDZ	11.429,97

Problems occurred and their solutions

Restructuring at BDZ

Due to restructuring at BDZ it was briefly unclear whether BDZ remains in the project or not. Because of the efforts of the coordinator BDZ remained in the project and thankfully even provided the wagon for the test ride in Bulgaria as agreed.

WP4 was behind schedule

The milestones in WP 4 could not be met in time. MBB has made a valiant effort, but we were despite the best efforts from the schedule. Because of this the coordinator Rodlauer Consulting has met with WP4 leader MBB and was able to develop through the combined efforts a strategy to get back into the schedule.

Budget Shifts during the project

Additional work in WP 1:

First, in August and September occur some personnel changes in two partner organizations – NRIC and MBB – so additionally intensive coordination work is needed.

In the case of NRIC, the person in charge for ongoing financial and administrative matters of our project, Mrs. Giulietta Marinova-Popova leaves the company. So the new person responsible, Mrs. Hristina Stoycheva, needed to be informed in detailed about the project in general, the actual status and urgent topics but also concerning all financial and reporting issues. Therefore coordination works via several telephone conferences and e-mail correspondence took place but additionally personnel meetings were absolutely necessary to guarantee a smooth and trouble-free progress in our PubTrans4All project.

In case of MBB, the work package leader of WP4, Mr. Dennis Behnken, leaved the company. He was replaced by Mrs. Marion Wendelken the new work package leader of WP4. The main works of WP4 (Build and Test the Boarding Assistance System Prototype) started with the development and the testing phase of the BAS prototype and the most important parts for WP 4 were leaded by Mrs. Wendelken. Therefore it was even more important to guarantee a smooth transfer of responsibilities and knowhow of the project. Of course coordination works via several telephone conferences and e-mail took place but additionally personnel meetings were inevitable in this very important stage of our project.

Furthermore, during a meeting of the prototype development group (PDG) some tricky questions concerning patent rights and licensing as well as liability issues were raised. Although our consortium has agreed upon patent rights in the Grant Agreement and the consortium agreement these specific questions cannot be answered at first sight. Therefore further information and research work was needed as the questions are very detailed and could not be foreseen by the consortium.
To prevent future problems concerning this important matter, additionally coordination work and meetings in personnel were necessary in form of one-to-one meetings and meetings with all partners together.

As these coordination works were not foreseen in this extend and for being able to fulfill these works with the highest possible quality ensuring the optimal ongoing of our project, a

budget shift was necessary. Due to internal changes in the organization of our project partner NRIC, only 50% of the prefinancing were transferred. This procedure was approved by the EC. The same situation is the case for the interim payment. The money not used for NRIC remained on the coordinators account and got used for the budget shift.
So a budget shift in the amount of 20,000 Euro from the coordinators account to the account of Rodlauer Consulting as project partner was executed.

Implementation of prototype BAS in EUPAX

Originally the consortium planned to install the prototype BAS into the former EUPAX 1:1 car module for laboratory testing and then in an actual vehicle for field testing.
During the first PDG meeting in Hennigsdorf (BT) the full-size mock-up railcar that had been used in the "EUPAX" project and is planned to be used for the laboratory tests has been presented to the Prototype Development Group.
Unfortunately the mock-up could not be used for the tests because the installation of the prototype in the EUPAX mock-up would require major adjustments that will demolish the design and structure of the mock-up. Furthermore the mock-up does not represent the required vehicle specification in an ideal way as required for this project. Therefore MBB and BT discussed a new concept of a variable testing device where different floor heights, door widths and other parameters (e.g. platform height, gap between platform and vehicle, etc.) could be simulated. This slight amendment of the work plan had been forwarded and approved by the responsible Program Officer in August 2010. There was a test rig developed by MBB, Therefore Bombardier agreed to a budget shift amounting to 50,000 EUR of the funding amount already received with the prefinancing and the interim payment back to the coordinators account of PubTrans4All project.

Additional costs in WP5 Dissemination

The prototype of a BAS, which was developed within the PubTrans4All project, was displayed at the InnoTrans 2012 in Berlin and was presented to the interested international professionals.
With the exhibition of the prototype and the presentation of the PubTrans4All project at the InnoTrans 2012 in Berlin, several tasks in Dissemination are related to which needed detailed coordination and execution.
Amongst other things, poster and information material needed to be prepared and project presentations needed to be worked out. As WP leader of WP5 Dissemination Rodlauer Consulting undertook the execution of these additional tasks.
This should guarantee that as many as possible visitors at the InnoTrans will learn more

about the project and the project results and will be informed into detail about the new accessible boarding assistance system.

The InnoTrans 2012 in Berlin gave the great opportunity, to present the PubTrans4All project results to a broad audience and informed all interested parties about the possibilities of the new prototype.
To cover these additional costs in WP5 Dissemination, a budget shift amounting to 12,000 EUR was executed to WP-Leader of WP Dissemination ROD.

Explanation about the budget shift to TUV
In the DoW 5.25 PM are planned for all TUVs tasks in WP5 (dissemination). In the main task for dissemination (task 5.4) only 1.5 PM are planned for producing papers and presentations and for presenting them. By doing efficient work in the tasks 5.1, 5.2 and 5.3 it was possible to save some time and so TUV has got the possibility to use two PM for typical dissemination. However at the date of preparing the proposal many dissemination possibilities have not been known. Many possibilities came out in the period between preparing the proposal and beginning of the project by new generated contacts. These possibilities have been worked in the dissemination plan. Since starting the project because of further new contacts gained within the project even more dissemination possibilities came out. These new possibilities are conferences and papers in scientific magazines.
An additional dissemination is the preparation of a RTR-Special magazine for the InnoTrans. The RTR is an international magazine (Rail Technology Review) published by the well known publishing house DVV-media. The consortium got the unique chance to publish a special edition only referring to PubTrans4All. This was disseminated at InnoTrans in Berlin where also the prototype was exhibited.
Furthermore the consortium decided to make a special dissemination tour where the project was introduced in many different European Cities. This tour was both, perfect dissemination for the EU-founded project and sensitizing for the topic of accessibility. The project partner TUV was one key partner regarding to this tour.
In order to use the chance of perfect and very deep dissemination for the project as outlined above it is recommended to add on the capacity for TUV in WP5 for three more person month. In the first step one person month has been generated by financial shift within the TUV-budget what means, two more person months must be shift towards TUV.
TUV calculates one PM with EUR 6.125 (done so in the proposal). Furthermore TUV needed EUR 2.400 (including indirect costs) for additional travel costs. All additional requirements were planned for WP5, what means the category OTH with 100% founding.

That means the TUV needed an additional amount of EUR 19.600 for the additionally planned work within WP5 for dissemination (EUR 12.250 personnel cost for two PM and EUR 7.350 for indirect costs) for personnel cost and EUR 2.400 for travel cost. In total there was a shift of EUR 22.000 towards the consortium partner TUV.

Explanation of additional use of resources for UB

1. On the Meeting held in Vienna on January 23rd 2012 it was concluded that before installation of the lift prototype in the BDZ wagon some analyses and documentation preparation for wagon is needed especially from the point of view of the structural static strength conditions. This work has R&D character and BDZ claimed that they do not have appropriate personnel and computational capabilities to perform this task.

After discussion it was agreed that UB could be the project partner that can perform this work. It was demanded from UB to make estimation of necessary resources for this task and to start the work as early as possible in order not to endanger the foreseen presentation of the lift prototype in the BDZ wagon on the InnoTrans 2012 fair.

2. The coordinator of the project, heaving in mind importance of the dissemination of the project results, started Dissemination Tour in several cities in Europe. In the PT4All budget, dissemination costs for UB were planned for conferences and work on papers for journals, but not for this type of tour. As the UB should participate in the tour it was necessary to cover costs for these additional activities.

For this additional use of resources UB got a budget shift in the amount of 14'278,02.

Annotation about the conference accounting and financial shift to WP5 (for TUV)

Within the FP7 project PubTrans4All – as part of WP2 – a conference has been organized in Vienna on 19th May 2010 to discuss the evaluation criteria and initial findings. This workshop was a special conference for accessibility in order to invite as many experts as possible. The aim was to generate as many alternatives and as much input as possible. The expert workshop needed one day – it took place on the second day of the 2nd consortium meeting. Besides getting the final inputs regarding to the evaluation criteria and the customer needs the first project results and the project on itself have been disseminated perfectly to a large auditorium of interested international guests. About 70 experts from several European

countries took part in this conference.

The workshop looked like following: The first part included 6 lectures about the topics of accessibility, special customer needs, and technical and operational framework requirements. Beside international experts also several lectures out of the consortium provided much information about the topic and the project on its own. One aim of the project which has been defined in the proposal has been to sensibilize on the topic of accessibility. This aim has also been achieved very effectively by this expert workshop. The second part of it consisted of two parallel workshops to discuss the special needs of customers and handicapped, of the operational and of the technical requirements.

Primarily in the proposal the conference had been planned to take part in Belgrade. It should have been organized by TU-Vienna, which responsibility was to organize the part of the conference supporting activities (advertisement for the conference, international invitations, translation...) and University of Belgrade (UB), which responsibility was to organize the rest of the logistics (conference rooms, proceedings, technical support etc.).This is the reason why the planned conference budget had been split up in the proposal calculations between these two organizations equally. TUV and UB analyzed travel connections and accommodation possibilities in Belgrade especially for representatives of associations of people with reduced mobility whose participation in the conference was very important. The travel costs for international participants were also taken into account. The conclusion was that expected attendance of these groups of participants can be substantially higher in Vienna than in Belgrade and consequently expected results of the conference much better. Based on these considerations the consortium decided to organize the conference in Vienna. Therefore the TU-Vienna organized the conference alone.

Within the whole project the sum of EUR 9.000 from the UB was shifted to TUV because of the sole organization of TUV. The exact shifting plan is described below.

Budget Shift to WP5 for additional costs in Work Package Dissemination

One of the major aims of the project PubTrans4All was to increase mobility of persons with reduced mobility all over Europe. We thougt that it is important to inform persons with reduced mobility and their representatives about the project results in a broader and deeper way than we have originally planned. Due to the still limited accessible possibilities of travelling it is very difficult for persons with reduced mobility to travel longer distances. Therefore the results of the PubTrans4All project and the engagement of the European Commission in this specific topic needed to be spread all over Europe.

For this reason we visited four different European cities in a period of time from January till June 2012.

In each of the the cities different groups of persons with reduced mobility (wheelchair user, visually impaired people, people with hearing disabilities etc.) and their representatives were invited to a special public sessions organized by the Coordinator. Each of these four sessions presented the developments and progresses made in the PubTrans4All project as well as the efforts taken by the European Commissions for this project and in this topic. These meetings were the only trustworthy way to ensure that persons with reduced mobility and their representatives get informed about the new opportunities of travelling will offer the new Boarding Assistance System prototype. The project PubTrans4All directly came to the persons with reduced mobility and strongly points the way into the future.

To cover additional costs in Workpackage Dissemination a budget shift from the Verkehrsbetriebe Karlsruhe to the Workpackage Leader of Dissemination was executed. Originally it was planned that the prototype of BAS developed in this project will also be incorporated into a vehicle of the Verkehrsbetriebe Karslruhe. Due to several choices made in this project, we developed a prototype for the most demanding type of vehicle – the UIC-wagon. Up to now no boarding assistance system exists for this type. As the UIC-wagon will be used well into the future, especially in eastern European countries, the project focussed on this type.

For this additional work the personal hours have changed significantly since the preparations were connected with a lot of organizational work because it was very difficult to find many disability organizations for our event at the beginning. But finally, we were able to welcome many guests at our presentations.

Therefore and primarily due to the additional personal work, the travel costs and the costs for catering and location some of the budget foreseen at the Verkehrsbetriebe Karlsruhe was used for this dissemination session. This budget shift was amounted to 100’000 Euro and was executed till end of December 2011.

Originally, the Project Management and Schedule Plan had foreseen for work package 5 – project dissemination – 6.5 person month for Rodlauer Consulting. At the time when elaborating and writing this plan the 6.5 person month perfectly corresponded to the dissemination work predictable at this state of the project. Our contact database was not so comprehensive like later, personnel relations elaborated and multiplied over the last 18 month and new contacts and interested individual persons as well as disabled person groups appeared. The coordinator wanted to use these new contacts in a very positive way and

strongly promote our project Pubtrans4All all along these highly differentiated possibilities of new dissemination channels. For these reasons the originally planned 6.5 person months were clearly underestimated and did not represent the present suitable dissemination work for PubTrans4All.

Rodlauer Consutling wanted to strongly foster and accelerate our dissemination work during the second project period. The constructing work of the prototype of a new boarding assistance system (BAS) had already started at this time (work package 4). As the prototype is got more and more shaped at this time, it was crucial to inform the public about the already made achievements and the upcoming of a new prototype for a boarding assistance system. The public as well as the later user groups needed to be informed in advance to spark their interest and attire their attention on the new BAS prototype.

Therefore the WP 5 leader (ROD) wanted to intensify our media work using a mixed strategy for further dissemination. General project information was spreaded in several articles in European newspapers magazines and journals – this was much more than originally planned, including countries all over Europe with a special focus on Central and eastern European Countries (CEE). In these countries the railway vehicles (UIC-wagons) are used quite into the future and up to now lack of appropriate BAS – a strong and upcoming market for our BAS prototype. For example there was a RTR Special Magazin only about the project PubTrans4All. There was also an article in European Energy Innovation, in „Der Standard“ an Austrian daily paper and much more.
Additional Rodlauer Consulting participated at the TRA exhibition in Athen in April 2012.
All this tasks meant much organisation work and also additional traveling costs.

There were still 50% (€ 35,932.51) of the prefinancing not transferred to NRIC remaining on the coordinators account. Due to internal changes in the organization of our project partner, NRIC only got 50% of the originally planned prefinancing transferred and the remaining 50% of € 35,932.51 rested unused on the coordinators account. This procedure was approved by the EC.

For being able to implement this strongly enlarged concept for dissemination Rodlauer Consulting got a budget shift in the amount of 33,500 € from this remaining part of prefinancing.

Changes in the consortium

During the project no changes occurred in the consortium of PubTrans4All.

Changes to the legal status of any of the beneficiaries

In April 2010 the coordinator renamed his company from “RABCON e.U.” to “RODLAUER CONSULTING e.U.”. This change in company name was reported to our Project officer, changed in URF by the LEAR and approved by the European Commission.

In September 2011 here was a change of the Slovenske železnice d.o.o. organization. Slovenske železnice was split into the new companies Slovenske železnice – Tovorni promet, d.o.o. (Slovenian Railway – Freight transport), Slovenske železnice – Potniški promet, d.o.o. (Slovenian Railways – Passenger transport) and Slovenske železnice – Infrastruktura, d.o.o. (Slovenian Railways – Infrastructure).

During the first reporting period some partner has changes in the LEAR and /or changes in “authorized representatives”:

- BDZ – Change in LEAR and “authorized representative”
- SBB – Change in “authorized representative”
- NRIC – Change in “authorized representative”
- MBB – Change in LEAR

The coordinator and the EC were informed in writing about all these changes.
No further changes of the legal status of any other beneficiary of PubTrans4All occurred during the project.

List of project meetings

The consortium has planned to hold in total six full consortium meetings:

1. **Project Kick-Off-Meeting** (month 3) – project administration, initial evaluation and brainstorming

2. **Existing BAS Evaluation Meeting** (month 10) – with expert workshop providing input on evaluation criteria, project objectives and ideas for a BAS prototype and discussion of draft results of WP2 and WP4

3. **BAS Recommendations Meeting** (month 16) – Draft results of WP3 and WP4, Prototype BAS Preliminary Design Report

4. **BAS Deployment and Testing** (month 24) – Deployment of prototype BAS and start of testing

5. **BAS Evaluation** (month 32) – Review of BAS evaluation and discussion of draft project final report

6. **Project Final Report** (month 35) – Review comments and approve final report

During the project six full consortia meetings were scheduled and five were really held. One of the scheduled meetings wasn't held because it was not necessary and so there were cost savings. A list of all Meetings you can find above.

Project planning and status

Up to now, every task is on time and respects the budget constraints (financial as well as person months). Slight changes in WP2 and WP3 were equilibrated within the planned time of each WP and so no delays or additional costs occurred.

All milestones in the project are fulfilled. The milestones during the whole project are summed up below.

Figure 10 – List of Milestones

Milestone		WPs Involved	Lead Beneficiary	Expected Date (month)	Means of Verification
#	Name				
1	Finalize Work Plan and Schedule	1	RAB	2	D 1.1 approved by team and released to public.
2	Complete Boarding Assistance System (BAS) Evaluation	2	TUV	12	D 2.2 approved by team and released to the public.
3	Complete BAS Conceptual Design Recommendations	4	MBB	10	D 4.1 approved by team and released to the public.
4	Complete BAS Recommendations	3	UB	16	D 3.1 approved by team and released to the public.
5	Start Building BAS Prototype	4	MBB	16	Team agreement on prototype to be developed. D 4.2 approved and released.
6	BAS Prototype Complete	4	MBB	24	Prototype delivered for installation in vehicle. D 4.3 approved and released.
7	BAS Prototype Field Test Start	4	MBB	26	Prototype delivered to operating company for field testing.
8	BAS Prototype Field Test End	4	MBB	32	Completion of field evaluation, data supplied to team for analysis and evaluation.
9	Final Report	5	RAB	39	Final report released to the public.

All deliverables scheduled in the project were sent to the EC on the corresponding date. The milestones have been completed to everyone's satisfaction and helped realizing the project on time. All deliverables are saved and submitted together with this report via the Participant Portal.

Development of the project website

As already described earlier in this report, an important part of the dissemination process is done via the project website that provides up-to-date information on the project activities and results. The website www.rabcon.eu/pubtrans4all first went online in month 5 was updated on a regularly basis and included the following information:

- General project information (aims of the project, project partners, etc.)
- Project partner area (including a password-protected area of the website for the exclusively use by project partners to post draft documents and transfer information)

Very soon it became obvious that the needs of the consortium as well as the aim to inform the interested public on the highest possible standard made a relaunch of the project website necessary. Within the consortium, the project partners preferred to directly communicate via telephone or e-mail. Therefore the project partner area on the website became obsolete. Furthermore some other adoptions became necessary.

The new project website www.pubtrans4all.eu was first presented during the third consortium meeting and went online in December 2010.

The whole website is compliant to the requirements of WAI-AAA (Internet Standard for barrier-free web access) and is accessible in German and English. The coordinator maintains and updates the project website on a regularly basis. The deliverables already submitted to the European Commission (with dissemination level “Public”) are described in a brief way and can be downloaded in pdf.-format. Furthermore the conference proceeding is available on the project-website and can be downloaded by the interested public.

Further procedure

In the next two months the focus of the project PubTrans4All is the project completion. The consortium has to construct the final report, which will get uploadet at the ECAS system, and the consortium has also to full fill the Form C.

The support of the partners in this project is very extensive, as many partners are in an EU project for the first time.

The most important steps for the project coordinator and for the beneficiaries are:

- Preperation and delivery of the Final Report (parts of the questionnaire in the ECAS system that has to be completed by the coordinator).

- Preperation and delivery of the Final Periodic Report (including the explanation on the use of ressources and the explanation of the work progress and achievements from the work packages leaders).
- Preperation and delivery of the Financial Report (Form C)

All data and documents will be collected by the project coordinator Rodlauer Consulting and will be send to the European Commission in time.