



## D9.4 ROADIDEA Web Site Snapshot

<b>Project:</b>	ROADIDEA 215455
<b>Document Number and Title:</b>	D9.4 ROADIDEA Web Site Snapshot
<b>Work-Package:</b>	WP9
<b>Deliverable Type:</b>	Report
<b>Contractual Date of Delivery:</b>	M30
<b>Actual Date of Delivery:</b>	16.08.2010
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<b>Approval of this report:</b>	TC
<b>Summary of this report:</b>	The Ideas Knowledge Base (ROADIDEA site) snapshot delivered to EC and all partners at close of the project.
<b>Keyword List:</b>	Dissemination, ROADIDEA, WP9, website
<b>Dissemination level:</b>	Restricted to a group specified by the Consortium (RE)



Co-funded by the European Commission under the 7th Community Framework Programme for Research and Technological Development

### Change History

Version	Date	Status	Author (Partner)	Description
Version 0.1	22.07.2010	Draft	Fred van der Wouden (Demis)	First draft
Version 0.2	30.07.2010	Draft	Fred van der Wouden (Demis)	Second draft, adjusted to PG and BA remarks
Version 1.0	9.8.2010	Full version	Fred van der Wouden, Poul Grashoff (Demis)	Reviewed by PG, adjusted by FW
Version 1.0	16.8.2010	Final	Pirkko Saarikivi (FORC)	Quality check

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## Executive summary

This deliverable is the last of the deliverables in WP9. It describes a “snapshot” of the current content and functionality of the ROADIDEA web site [www.roadidea.eu](http://www.roadidea.eu) (in the Description of Work the web site is also called the “Ideas knowledge base”) In addition to this report a DVD is made available with the Microsoft Sharepoint backup of the web-site as well as all the public documents collected at the time of the snapshot. Thanks to the EC ETIS-PLUS project the ROADIDEA website will continue to be available for another two years and hence can continue to develop as a knowledge site for weather and road related data integrations.

The ROADIDEA web site was established as part of the dissemination activities and includes a public part of the web site and a restricted part that requires a log-in. The comprehensive public part of the web site provides as much as possible relevant content so search engines allow the target audience to find the ROADIDEA site. The restricted part is used for the internal dissemination within the project community. It includes several Wikis, discussion boards, contact lists, mail lists, meetings lists, innovation seminar and meeting sections and so forth.

In the first year the development of the public part of the ROADIDEA web site was focused on obtaining as much as possible relevant public content in the site. The target audience of the site is working in the fields of ITS, road safety and weather. The ROADIDEA website is not intended to be a site for the general public.

In the second year, in response to the EC review in January 2009, the web site was re-styled. In particular the home page was improved by providing users with quick links to all main parts of the site. The site was made more visually attractive by adding more graphics and dynamic web parts. This included for example showing the current weather of the next meeting location(s), animated pictures and tag clouds with moving links. An improved search engine (faceted search) was installed and an enhanced forms based authentication was implemented for logging in to the restricted part of the web site.

In the final part of the project the web site was enhanced with several GIS techniques to showcase demonstration projects and pilots and to enhance dissemination of the pilot projects.

The improvements have led to an increased number of visitors, reaching over 800 unique external visitors per month in the first quarter of 2009 and reaching a peak of over 1000 unique visitors per month during the months September 2009 – March 2010. The bandwidth (an indication of the amount of information exchanged) had already grown to more than 1 GB per month by March 2009 and reached its peak during the Final Seminar month of June 2010.

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## 1. Introduction

This ROADIDEA web site snapshot is Deliverable D9.4 from the FP7 ROADIDEA project. The snapshot provides an overview of the ROADIDEA web site and the techniques used in building the web site. This chapter gives a background for the ROADIDEA project and website and an overview of the contents of this document. Sections 1.1 (background) and 1.2 (dissemination and exploitation objectives) have been included in earlier deliverables D9.2 and D9.3.

### 1.1 Project background

ROADIDEA WP9 (Dissemination and exploitation) covers the effective dissemination of the project results to European stakeholders and paves the way for future commercial exploitation of the project results.

The objective of ROADIDEA was to study the potential of the European transport service sector for innovations, to analyse available data sources, to reveal existing problems and bottlenecks, and to develop better methods and models to be utilized in service platforms. These were to be capable of providing new, innovative transport services for various transport user groups, while trialling a formal innovation process to achieve this.

The central issue was the Innovation Process itself and its value in undertaking this important task.

The work was organized in three main layers:

- Infrastructure layer: Analysis and development of transport infrastructure, in particular sources and collection of data, development of methods such as data filtering and fusion, and weather and road condition models.
- Innovation layer: New innovative transport service ideas were produced in a systematic way by organising two annual Futures Seminars.
- Exploitation layer: Piloting and testing a selection of the new innovations in real service platforms, evaluating their business potential and user acceptance.

The outcomes of this program provided a demonstration of how a formal Innovation Process can be applied and tested.

ROADIDEA was focused on the most basic objective of ICT Theme of FP7, working towards a road map for improving the competitiveness of European industry and helping drive and stimulate creativity and process innovation in products and services.

The following specific execution objectives of ROADIDEA have been achieved:

- The ROADIDEA transport service platform was designed and implemented to test the use and integration of various data and models in the provision of new services.
- The availability of useful data for transport services was analysed.
- New types of data sources and the needs for new kind of services were analysed.

- Better tools and standards were defined to allow for data storage and mediation.
- Better transport and weather models were developed, using the new sources of data in an innovative way.
- Data analysis, fusion and mining features were studied and developed for utilization in services to several different user sectors.
- Innovative new knowledge-intensive products and services for transport users were identified.
- The implementation of the innovations to real transport systems will be possible and realistic in the future.
- Project results and its Final Report, the ROADIDEA Roadmap, have been and will be further disseminated among the transport service community and other stakeholders.

## 1.2 Objectives of Dissemination, Exploitation, and IPR issues

Dissemination, Exploitation, and Intellectual Property Rights (IPR) were key horizontal activities in ROADIDEA project. The interdependencies between different work packages are shown in Figure 1.

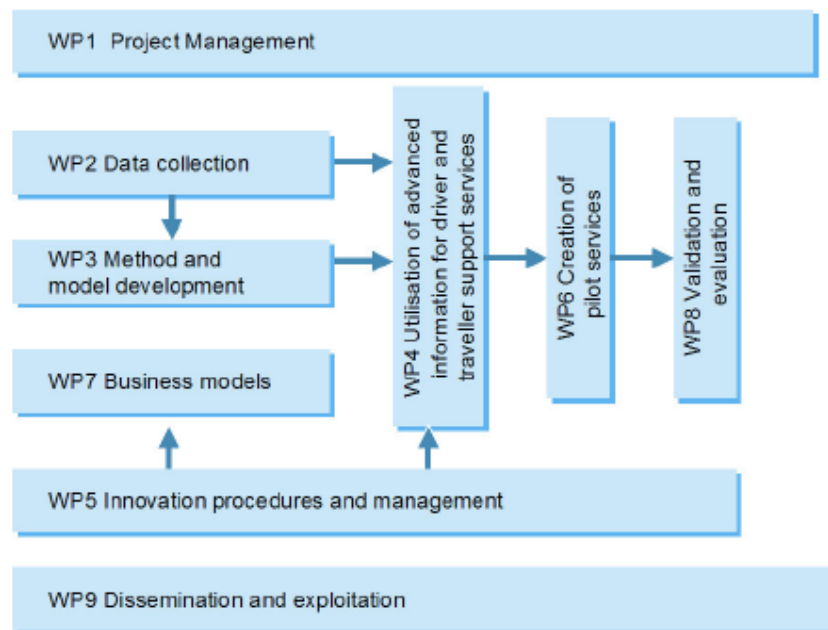


Figure 1 The interdependencies between ROADIDEA Work Packages (ROADIDEA 2007)

One target of the project was to move towards the commercialisation of project results. Consequently different business models were studied in WP 7. The objective was to in-

involve users and service providers in the field. Different stakeholders were invited to the Idea seminars, as well as targeted discussions between ROADIDEA partners and their contacts. User requirements and market expectations are vital for all ITS service developments. The participating Small and Medium Enterprises (SMEs) actively contributed to the project and will subsequently act as a multiplier to obtain market acceptance for the project results through dissemination and training.

Exploitation planning benefitted from the results of the Business models developed in WP 7, from the specific results of the Futures Seminars of WP 5 (Innovation Procedures and Management), and from stakeholder/user surveys in the Seminars. All yielded valuable information for exploitation planning. The surveys contained concrete results and revealed trends in the potential exploitability of the pre-project status of the European transport services as well as those selected for the development of ROADIDEA pilot services. These results contributed to the assessment of the exploitability of the potential innovations that could be developed further in the future.

Management of knowledge, intellectual property and other innovation-related activities arising in the project were addressed in Technical Committee (TCC) and the Project Management Board (PMB). At the start of the project all of the background know-how was identified by the partners, including the technologies and expertise that would be addressed by existing relevant IPR/patents held outside the consortium. No IPR problems were identified. The "Consortium Agreement for ROADIDEA" covered all aspects of Confidentiality and IPR. In the last half year of the project any developments which could be fed into existing or newly created standardisation activities were discussed and resolved in TCC meetings. Rules were set for scientific publishing of project results by the partners. There were two categories of publications that originated from the work in the project:

- Project-endorsed publications that required notification to the Management Board with the intention to submit a paper and approval by the Management Board of the preliminary version prior to it being forwarded to a conference or journal. All project-endorsed publications were required to contain an acknowledgment of support by the Project Consortium.
- Project-related publications that required notification only to Management Board. Project-related publications were required to contain an acknowledgment of support by the project together with a disclaimer, that it might include views that were not necessarily those of the Consortium.

The Technical Committee and PMB were also responsible for disseminating project results to a wider audience. Related activities include the following:

- Production of project dissemination material.
- Maintenance of close links to general and specialised media, related European /national/regional projects and clusters, industrial associations and other multipliers.
- Organising participation in key events such as conferences, workshops, trade fairs etc.

- Organisation of the Final Dissemination Seminar.

### ***1.3 Dissemination through the ROADIDEA website***

Detailed rules for dissemination and use of the results have been included within the Consortium Agreement, including Confidentiality clause, Ownership of results, Legal protection of results (patent rights), Commercial exploitation of results, Obligation of use, Dissemination of knowledge, Publication rights, Publishing and press releases, Background patents, know-how and information access, Sub-licenses. As the handling of IPR is determined in the Consortium Agreement, it is not further analysed here.

Related deliverables that have been produced in the context of the project include the D9.2 Dissemination plan issued after the first half year of the project, and the D9.3 Exploitation plan, which have been finalised after the first year of the project and have identified the modalities that will govern the commercial exploitation of project results beyond the end of the project. This has been completed as an iterative process. The D9.2 Dissemination plan is closely related to this document, since the ROADIDEA website is an important part of the dissemination process.

The ROADIDEA website is an integral part of the dissemination process as it is being used for the public presentation of the project as well as providing the project with a collaborating tool for sharing and editing documents, a calendar, mailing lists, online discussion boards and an innovation WIKI.

### ***1.4 Document contents***

This document presents a snapshot of the final state of the ROADIDEA website by describing the website presentation and functionality. Chapter 2 describes the basic purpose and presentation of the ROADIDEA website and some statistical results from the website usage. Chapter 3 gives an overview of the public parts of the ROADIDEA website. In chapter 4 the restricted parts and added functionality of the website are presented. In chapter 5 the underlying techniques and implemented web parts are described that are used throughout the site. Also the GIS techniques that are implemented for the presentation of the pilots are discussed in chapter 5.

## 2. ROADIDEA Website Overview

The ROADIDEA web site was established as part of the dissemination activities (for a full description of the dissemination activities see D9.2 Dissemination report) with a state of the art community part for internal dissemination, using Wikis, discussion boards, contact lists, mail lists, meetings lists, innovation seminar and meeting sections and so forth. A comprehensive public part of the web site focused on providing as much as possible relevant content so search engines can find our site easily.

In the first year the development of the public part of the ROADIDEA web site was geared towards getting as much as possible public content in the site. This is very important as the target audience we are aiming at is working in the field of ITS, or road safety and weather. It is not intended to be a site for a general audience. Only by having interesting content we can attract visitors of the right kind to our site, through search engine references.

After the EC review in January 2009, the web site was restyled. In particular the home page was found to be too static and not helping users to get quickly to main parts of the site. Restyling was needed to become more effective by linking more to other pages and to become more attractive by using more graphics and by including dynamic web parts such as the current weather of the next meeting location(s) and tag clouds with moving links. Also an improved search engine (faceted search) was installed and enhanced Forms based authentication for logging in on the web site. GIS techniques were applied to showcase demonstration projects and pilots and to enhance the web site experience. These changes were necessary to make the web site more attractive for visitors.

In this and the next two chapters a snapshot of the final state of the ROADIDEA website will be given. In this chapter some general aspects of the website are described. First some basic features will be described in section 2.1. To give an idea of the website usage by visitors, section 2.2 illustrates by way of the AWStats tool how the unique visitors and bandwidth statistics have developed during the project.

The more detailed description is divided into a public part and a restricted part, because the public part is how a general visitor experiences the site when having no level of authorization to restricted parts. If a visitor browses the website, he will be able to view a large (public) part of the site, which is described in chapter 3.

Having access to the restricted part of the website allows visitors for instance access to restricted documents and the ability to add content to WIKI discussions and discussion boards. For acquiring access to the restricted part of the site, a visitor requires a login that is distributed by Demis. By logging in to the website using a specific user account and password, the visitor is also granted access to restricted parts of the sites, which will be described in chapter 4.

The ROADIDEA website will remain hosted for 2 years after the projects end under the flag of the PF7 EC project ETIS+ ([www.etisplus.eu](http://www.etisplus.eu)). A backup of the ROADIDEA Sharepoint site will be made available at the end of the project so to allow for restoring the website as described in section 5.4.

## 2.1 ROADIDEA Website basics

Picture 2 shows the home page of the ROADIDEA website. The basic idea of navigating over the website is that the site contains 8 Main Topics that can be accessed from any part of the site through the tab sheet structure (Home, Documents, Innovations etc.). The left side 'Quick launch Menu' is used for quick references to relevant topics on the page; this can be links to internal pages or external links on other locations on the ROADIDEA site or other websites and even documents.



Figure 2: ROADIDEA home page

The concept of the combination of the main topic and quick link navigation results in a recognizable presentation of every part of the site and allows for easy navigation on the website (and beyond if so required). This allows for easy and quick access to a large part of the information contained on the site, inviting visitors to longer remain on the site. In addition the home page content includes announcements on and links to up to date developments and upcoming events. Both the dynamic elements (see section 4.1 for a more elaborate description) and the continuous improving content keeps drawing visitors back to the site by presenting the most up to date developments. The next section will present some statistics about the site usage to support this.

## 2.2 ROADIDEA website Usage statistics

Using the AWStats open source software ROADIDEA web site statistics for the report period were compiled. An overview is given in the table below.

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Mar-08	110	222	11305	49176	544.88 MB
Apr-08	184	456	14933	53184	1.00 GB
May-08	260	428	5930	17718	549.88 MB
Jun-08	463	758	8779	30089	666.07 MB
Jul-08	669	1424	7527	21628	790.49 MB
Aug-08	571	1127	4845	12188	438.48 MB
Sep-08	407	626	5207	16444	412.61 MB
Oct-08	579	1064	8789	26760	725.68 MB
Nov-08	691	964	7968	25083	843.15 MB
Dec-08	754	1108	5986	18889	801.82 MB
Jan-09	823	1180	8178	26426	985.86 MB
Feb-09	797	1128	5902	23135	880.06 MB
Mar-09	857	1271	7446	34216	1.14 GB
Apr-09	828	1233	8181	28047	1.06 GB
May-09	843	1225	6950	29198	1.21 GB
Jun-09	892	1244	5290	21857	1.23 GB
Jul-09	988	1620	5706	20660	778.47 MB
Aug-09	982	1605	5684	22457	797.42 MB
Sep-09	1046	1661	6619	26702	1.29 GB
Oct-09	1096	1756	7162	29804	1.43 GB
Nov-09	1169	2018	8800	34914	1.44 GB
Dec-09	980	1461	6461	30339	1.35 GB
Jan-10	1070	1562	8544	36866	1.62 GB
Feb-10	924	1209	5521	21619	969.25 MB
Mar-10	1025	1484	9532	33780	1.27 GB
Apr-10	739	1229	6278	23601	921.51 MB
May-10	768	1326	8089	35228	1.25 GB
Jun-10	846	1442	10337	53002	1.79 GB

The “unique visitors” column refers to visits from unique IP addresses. One should note that large companies connected via their firewall to the web usually have only 1 unique IP address, so all employees of the company will be counted as one visitor only. On the other hand this also includes the visits by the 14 ROADIDEA partners. Assuming these are mostly from the partner’s office (i.e. only 1 IP address per Office), this internal ROADIDEA community traffic should generate only at most 20-30 unique visits per month. So we can conclude that during the first quarter of 2009 we have around 800 unique **external** visitors monthly, reaching a peak of over 1000 unique external visitors during the months September 2009 – March 2010. On average each unique visitor visited 1.45 times per month, viewing on average 9 pages.

	Unique visitors	Number of visits	Pages	Hits	Bandwidth (MB)
Totals 2008	4696	8203	82225	276311	6773
Totals 2009	11301	17402	82379	327755	13592
Totals 2010	5372	8252	48301	204096	7821
2008 monthly average	470	820	8223	27631	677
2009 monthly average	942	1450	6865	27313	1133
2010 monthly average	895	1375	8050	34016	1303

The development of the number of unique visitors is also shown in the chart in figure 3. Here the decline of unique visitors in the last months of the project is remarkable. This however can be explained by the fact that the fair amount of visitors that are attracted by the pilots diminishes during the spring / summer months, as the pilots produce less interesting results during the summer / spring months. The pulp friction pilot monitors the Finland road surface friction has interesting results mainly in winter time and the point and route rainfall prediction pilots for the Netherlands have more hits during the winter / spring months when there is significant rainfall.

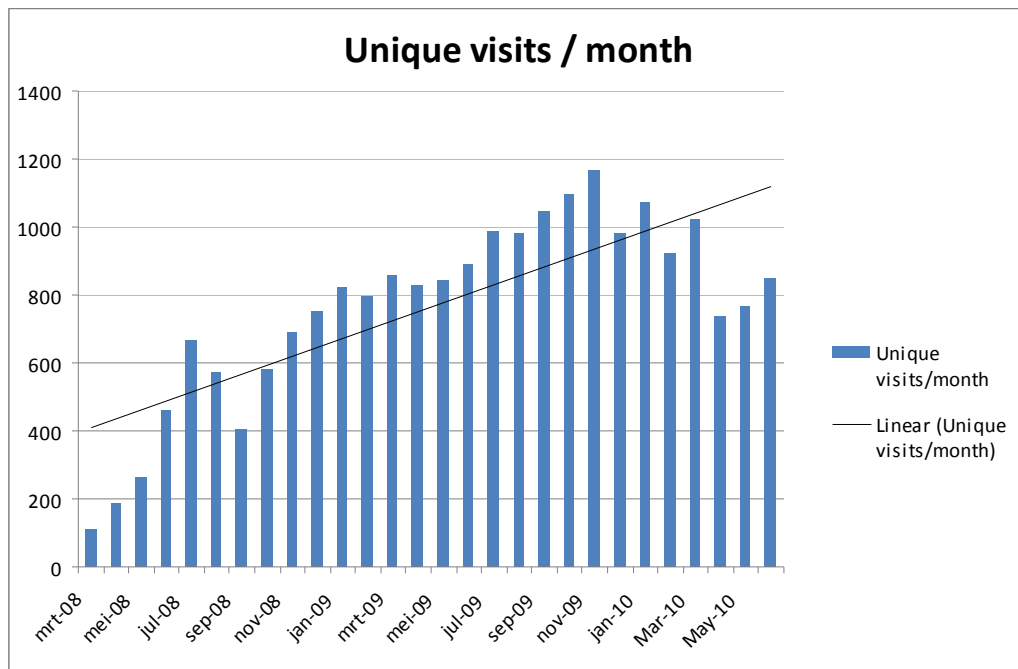


Figure 3: Unique visitors per month over the course of the ROADIDEA project

The bandwidth (an indication of the amount of information exchanged) has already grown to more than 1 GB per month by March 2009 and reached its peak during the final Seminar month of June 2010. The development of the bandwidth per month is shown in the chart in figure 4.

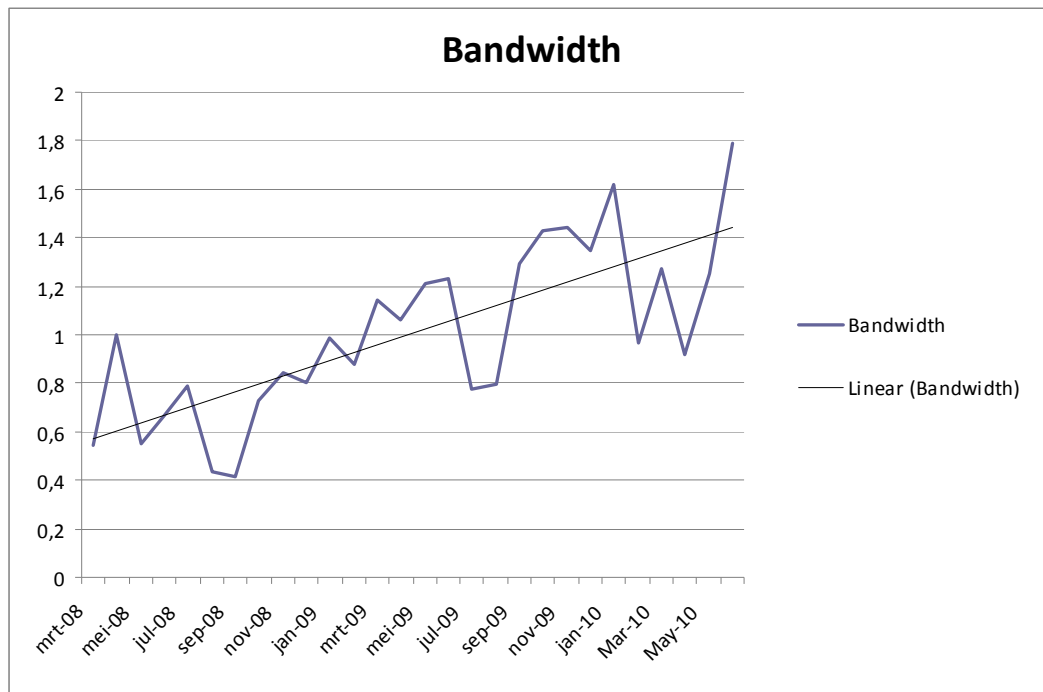


Figure 4: Bandwidth per month over the course of the ROADIDEA project

### 3. ROADIDEA Website Public Part

This chapter provides an overview of the public part of the ROADIDEA web site (<http://www.roadidea.eu>). This is the part that everyone on the web can see, without logging in to the web site.

General features that are available on each tab sheet within the ROADIDEA website are:

- The main tab sheets (Home, Documents, Innovations, Pilots, Work Packages, Deliverables, Partners) are available from any part of the site;
- Quick launch: a link menu with the most important issues of the specific page;
- Searching the site (or specific sub site);
- Signing in (when in possession of a user account).

Other features are more page-specific and will be described next for each page. The features of each page are summarized in a table containing the URL, the purpose, the available navigation and things to see and do on the web page.

#### 3.1 Home page

The Home page has quick links to all main ROADIDEA results, deliverables and information; announcements and links to other related projects. On the top there are tab pages to navigate to Documents, Innovations, Pilots, Work packages, Deliverables, Partners. On the left hand side is a menu for navigation, with links to the calendar and the ROADIDEA results.

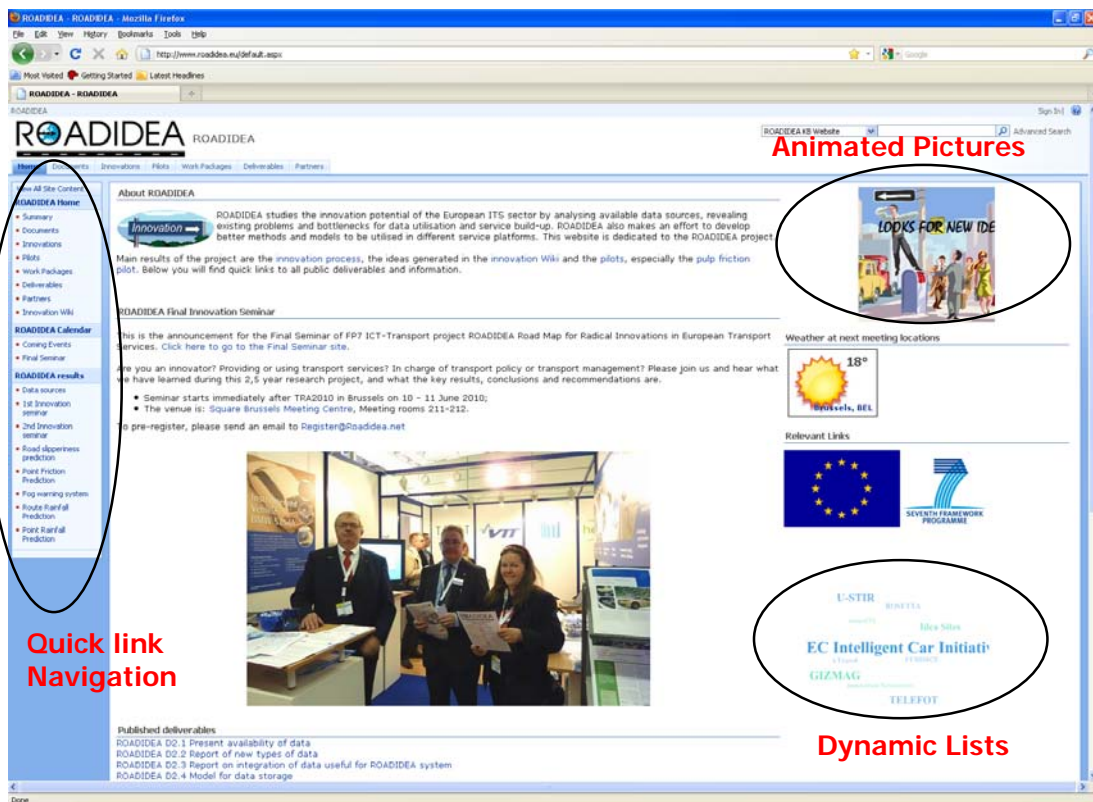


Figure 5: ROADIDEA Home page

The dynamic nature of the homepage (figure 5) is demonstrated by:

- The use of a dynamic picture animation, that shows the main project features by rotating a combination of keywords and pictures (top right);
- The lists of results or relevant links implemented by way of a 'tag cloud': a dynamic way to show a static list by rotating items and highlighting a selection. The basics behind this technique are explained in section 5.3.5.
- The list of announcements that provide the latest project news.
- The list of coming events.

The navigation by the 'quick link menu' on the left hand side of the homepage includes links to upcoming events and the most recent public results (mainly pilots and demonstrations). In addition the home page content includes announcements on and links to up to date developments and upcoming events. To summarize the home page:

Home page	Features
URL	<a href="http://www.roadidea.eu/default.aspx">http://www.roadidea.eu/default.aspx</a>
Purpose	Provides quick access to most relevant parts of the site, such as upcoming meetings / innovation seminars, public deliverables, innovation seminar links, quick launch menu.
Available navigation	Quick launch, general tab sheets.
Things to see	General project description, Announcements, Final seminar info.
Things to do	Download public deliverables from a deliverable list, Search the site, Mail suggestions / questions

### 3.1.1 ROADIDEA Calendar

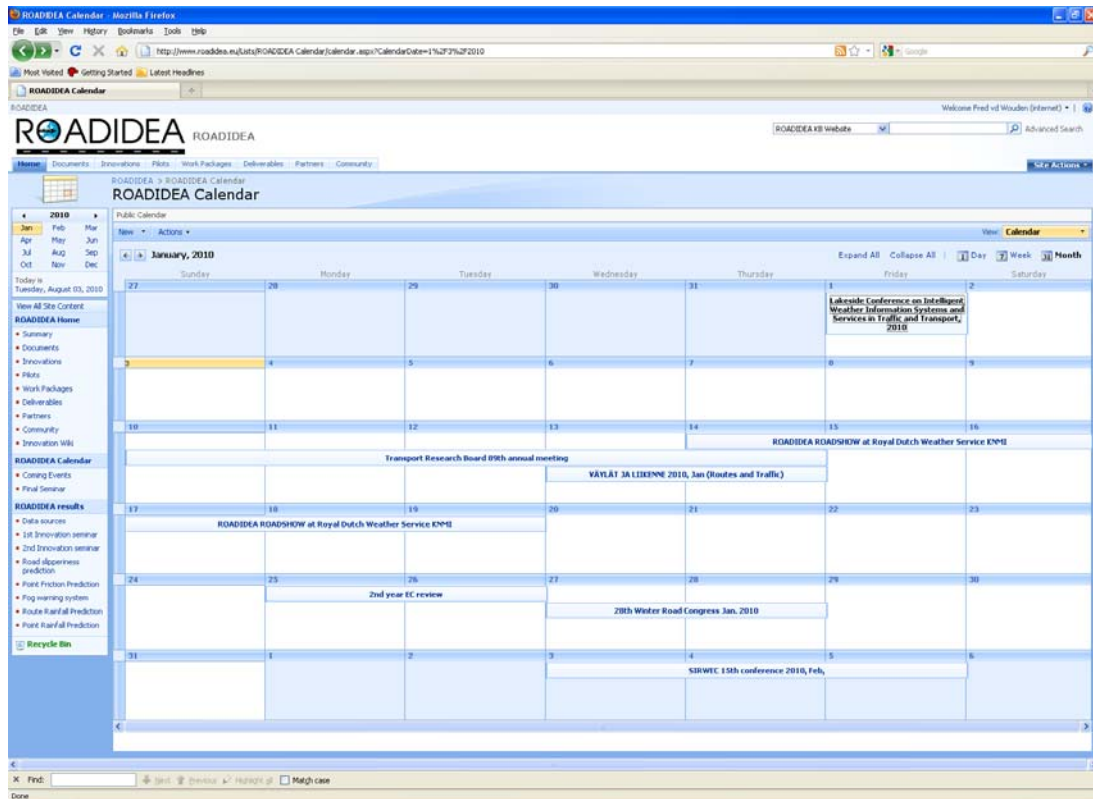


Figure 6: ROADIDEA Calendar

As part of the home page, the ROADIDEA Calendar is available to all visitors of the web-site so they can see the past and upcoming events of the ROADIDEA project. Individual events can be selected and viewed, however editing or adding events is only possible when the visitor is signed in (restricted part). The calendar is shown in figure 6. The “coming events” link now shows an empty list as the project is now finished.

### 3.1.2 ROADIDEA Announcements

The Home page contains an announcement list to keep visitors informed on the latest developments within ROADIDEA in general and the latest changes to the site in particular. Visitors can view but not edit or add announcements.

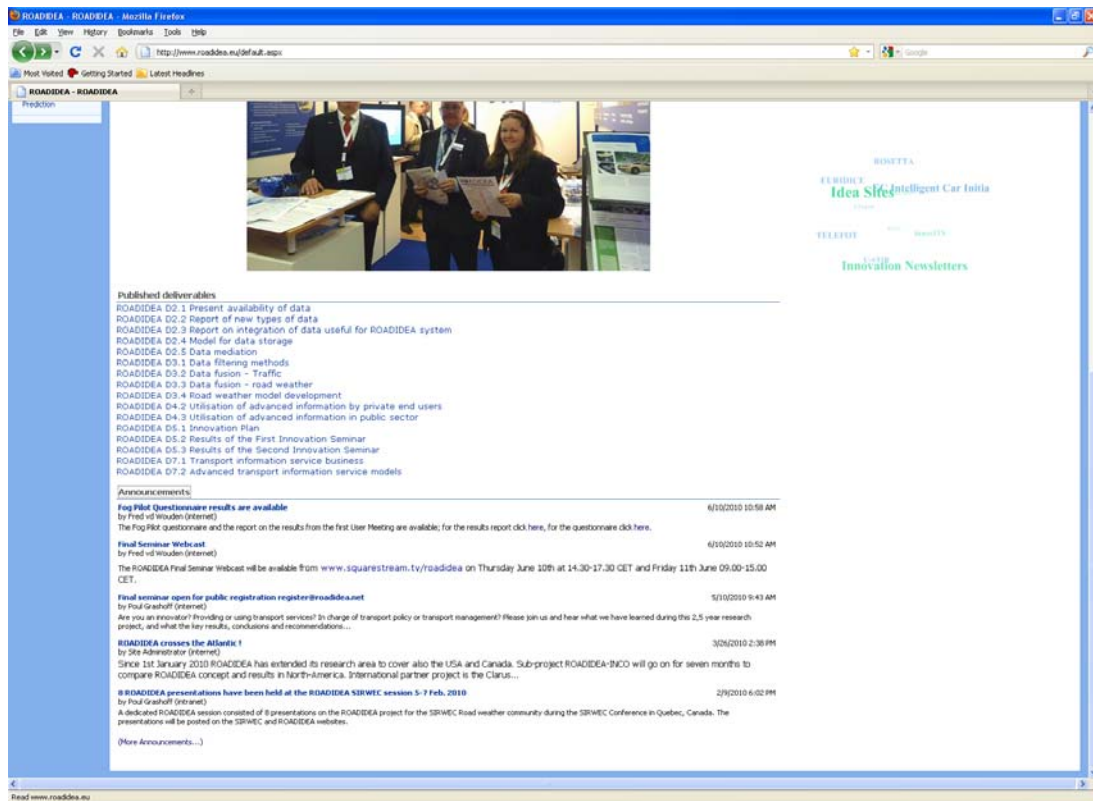


Figure 7: ROADIDEA Announcements

### 3.2 Documents Page

The Documents Page provides a library of all (public) documents; the restricted documents part is only visible when a visitor is logged with a ROADIDEA account. On top a list of the most recent additions to the site are presented.

Documents page	Features
URL	<a href="http://www.roadidea.eu/documents/default.aspx">http://www.roadidea.eu/documents/default.aspx</a>
Purpose	Provide overview of latest public documents (i.e. deliverables and scientific papers) and access to documents organised in folders
Available navigation	Documents quick launch menu, general tab sheets.
Things to see	Overview of Recent additions and Public documents.
Things to do	Browse and download public documents, browse by keyword.

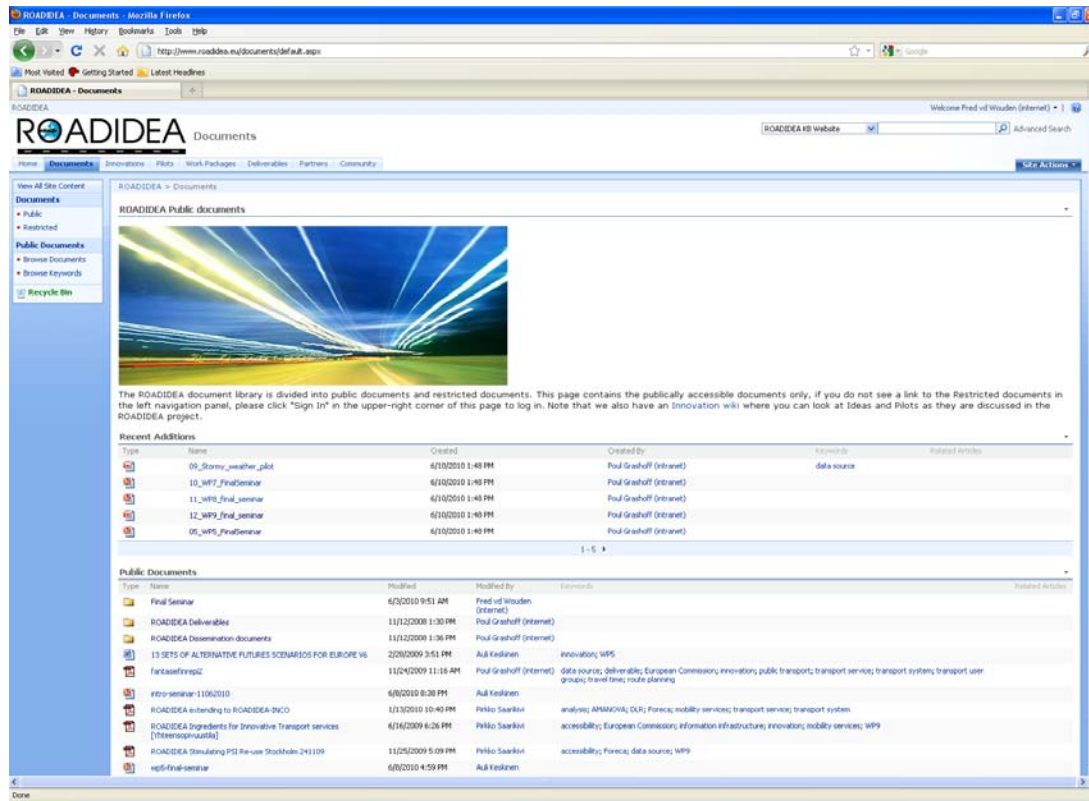


Figure 8: ROADIDEA Documents page

### 3.3 Innovations Page

The innovations page describes the innovation process methods and contains the innovation seminars and their results. Each innovation seminar has its own site with pages for the program, location, documents and results of the seminar. The final seminar page also contained a webcast of the seminar, which was broadcasted live during the seminar.

Innovations page	Features
URL	<a href="http://www.roadidea.eu/innovations/default.aspx">http://www.roadidea.eu/innovations/default.aspx</a>
Purpose	Explains the innovation process methods and the results of the innovation seminars, provides access to innovation seminar meetings sites and the Innovation wiki
Available navigation	Quick launch to innovation seminars and innovation topics.
Things to see	Description of Innovation methodology.
Things to do	Search the innovation site.

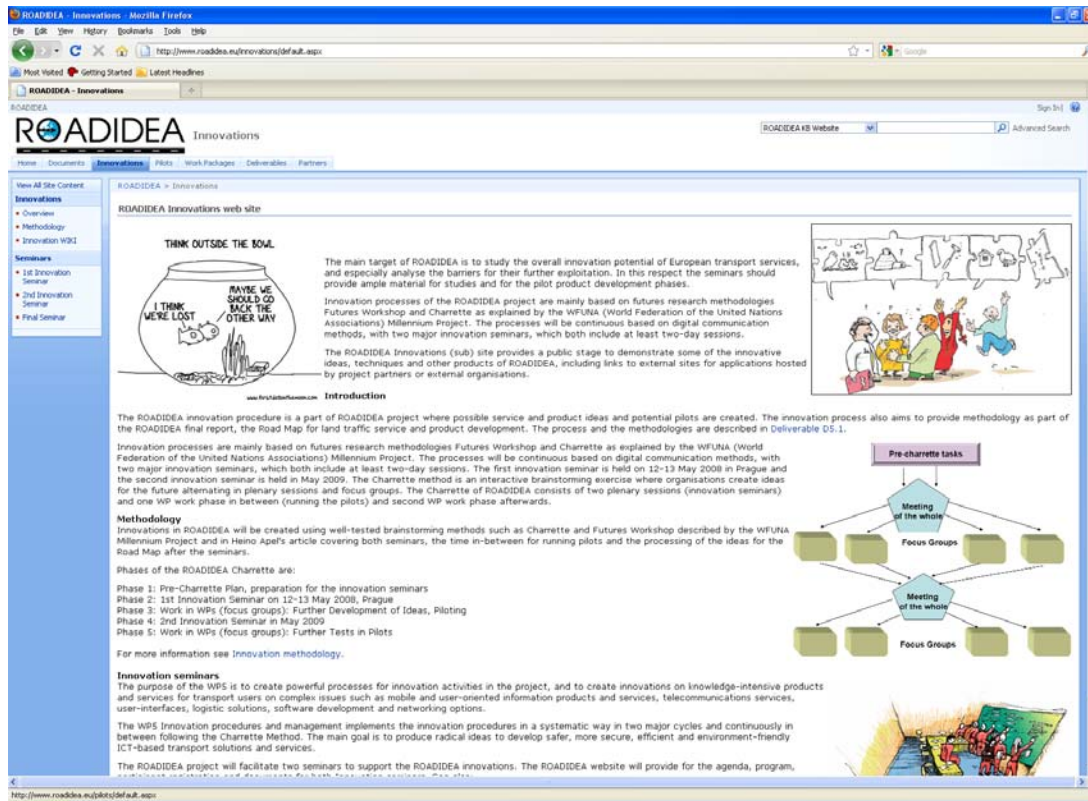


Figure 9: ROADIDEA Innovations page

### 3.3.1 First and Second Innovation Seminar Sites

The sites for the innovation seminars have been given the same look and feel by applying the same Sharepoint meeting template. The sites include a home (overview) page, a program for each seminar day and description of the venue, relevant documents and photos and an overview of attendees. The Innovation Seminar Sites were used consistently throughout the life cycle of the Seminar:

- Preparations: announcement and presentation of the Seminar, registering attendees, posting relevant (preparation) documents;
- Just before / during the seminar: making last minute adjustments, posting documents and presentations that are used during the seminar;
- After the seminar: presenting the results, epilogue and / or photos of the seminar.

In figures 10 and 11 respectively a snapshot of the First and Second Innovation Seminar is given.

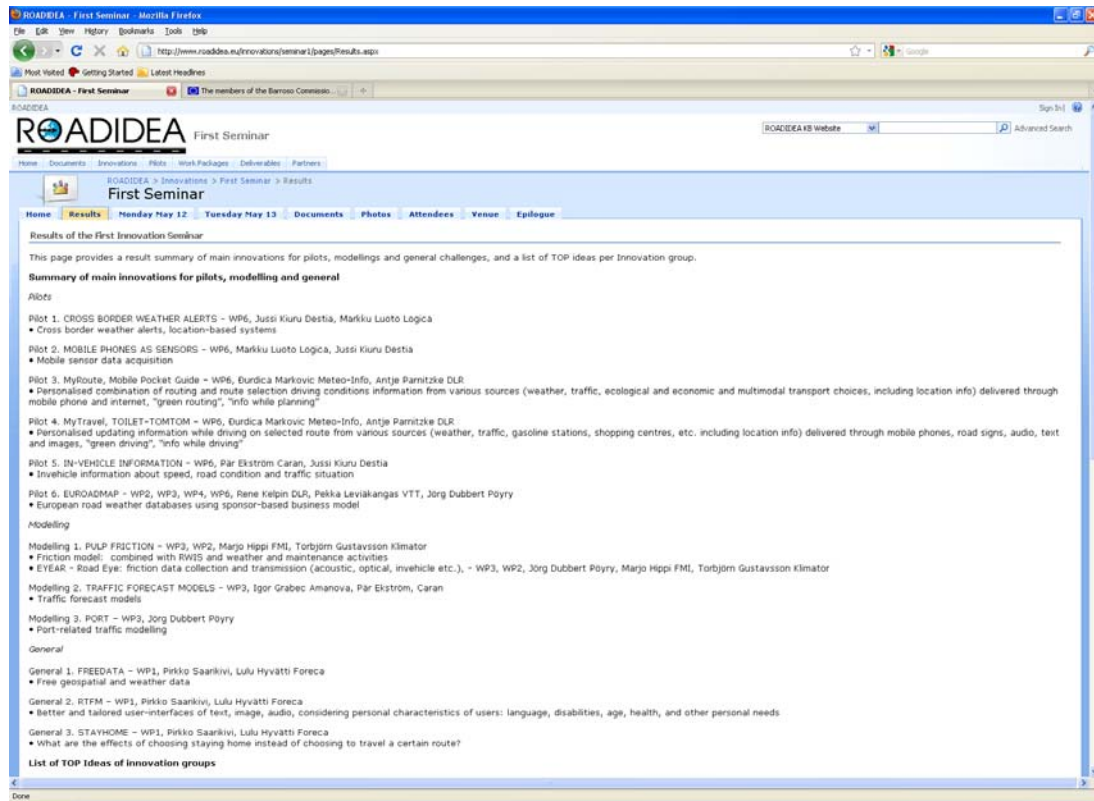


Figure 10: First Innovation Seminar Results page

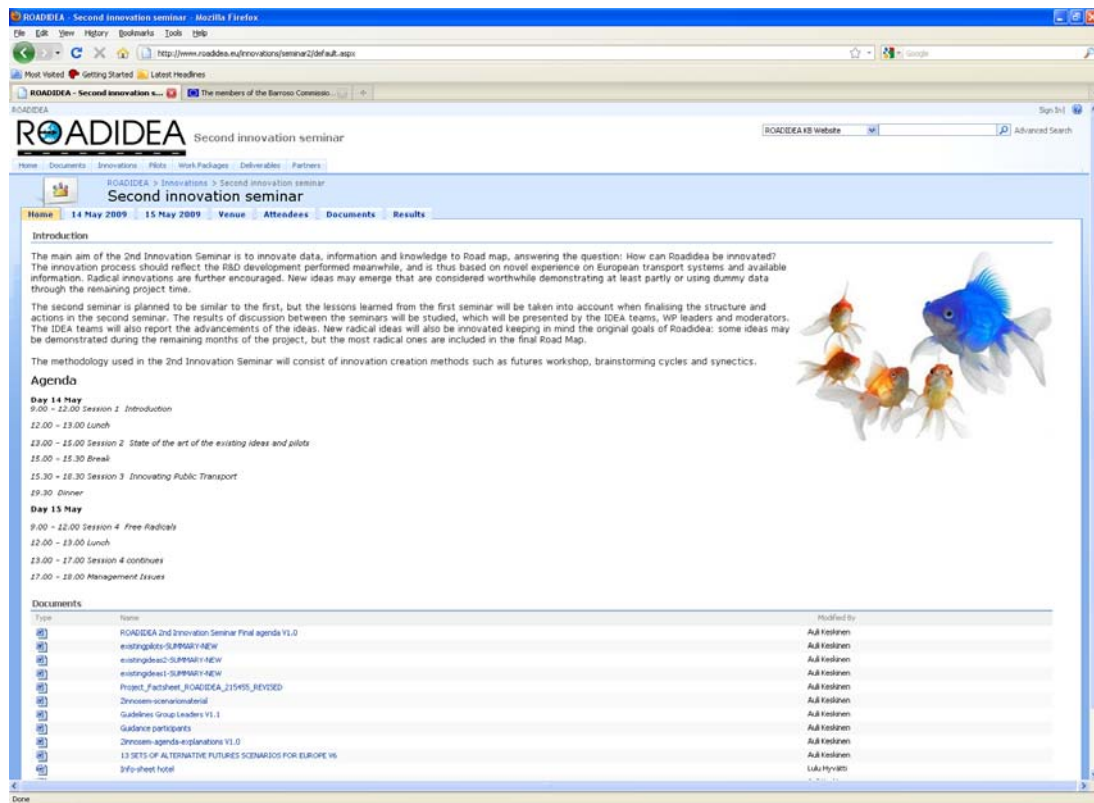


Figure 11: Second Innovation Seminar Home page

### 3.3.2 Final Seminar Site

In the design of the Final Seminar site, the emphasis was on attracting a broad audience of interested and involved parties as to acquire a maximum response to the Final Seminar. This involved the personal invitation by all ROADIDEA partners of business associates affiliated with the contents of the ROADIDEA project. Also more attention was paid to the dynamic presentation of the site, which include results and ideas tag clouds (dynamic presentations of lists) and a live web cast of the seminar, allowing people unable to attend the seminar to follow the proceedings on internet. This was a big success as it attracted more than 200 viewers per day.

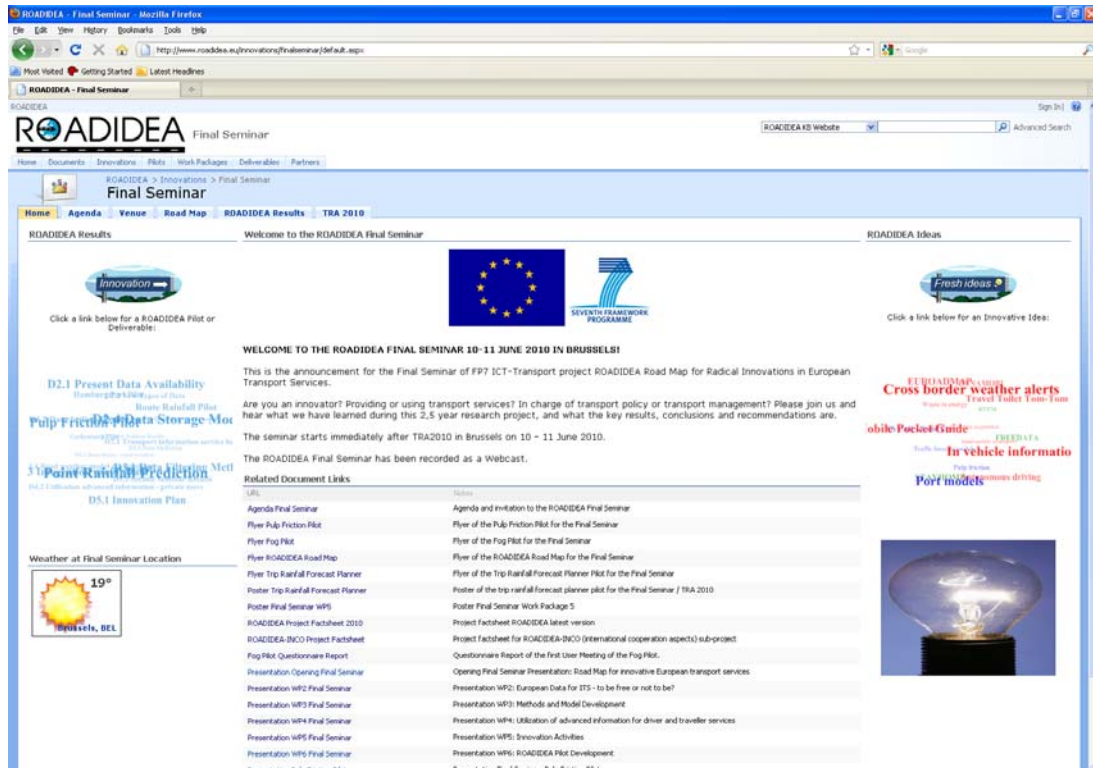


Figure 12: Final Seminar Home page



Figure 13: Final Seminar Webcast => success with 200+ virtual viewers!

### 3.4 Pilots Page

The Pilots page contains a presentation of all ROADIDEA pilots and demonstrations projects. It also contains numerous links to live demonstration projects, such as the pulp friction pilot, the fog pilot and the Route Rainfall Forecast Pilot. The pilot presentation was updated whenever sufficient new information was available and attracted considerable attention. The pilot pages will be discussed individually in the next sections.

Pilots page	Features
URL	<a href="http://www.roadidea.eu/pilots/default.aspx">http://www.roadidea.eu/pilots/default.aspx</a>
Purpose	To present the development and status of ROADIDEA pilots and demonstrations.
Available navigation	Quick launch to ROADIDEA pilots and demonstrations, links to external live demonstrations.
Things to see	Overview and description of the ROADIDEA pilots.
Things to do	Search and view the pilots sub site.

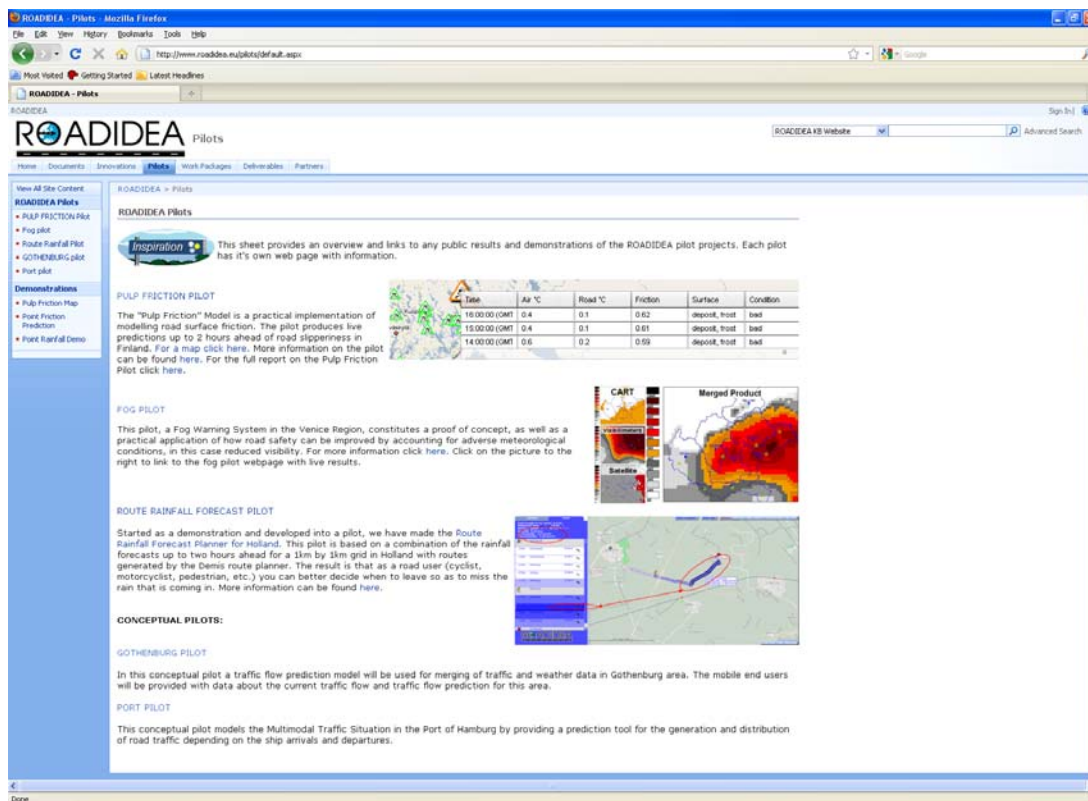


Figure 14: ROADIDEA Pilots main page

#### 3.4.1 Pulp Friction Pilot

The Pulp Friction Pilot entails a statistical forecast model for road surface friction. As slippery road conditions increase traffic incident risk dramatically, especially in wintertime when poor driving conditions result from ice, snow or frost being present on the road surface. By measuring the friction, meaning the grip between car tires and the road surface, in combination with surface and other parameters, the friction can be modelled.

The friction model presented was developed by performing a statistical analysis of road weather observations measured with the Vaisala DSC111 sensors which measure the thickness of water/snow/ice layer on the surface optically and produce an estimate of prevailing friction. There are presently more than 110 road weather stations along the Finnish road network equipped with the DSC111 sensor. The techniques used to present the results of the friction model will be discussed in section 5.5.1. Figure 15 shows the Pilot presentation on the ROADIDEA Pilots site.

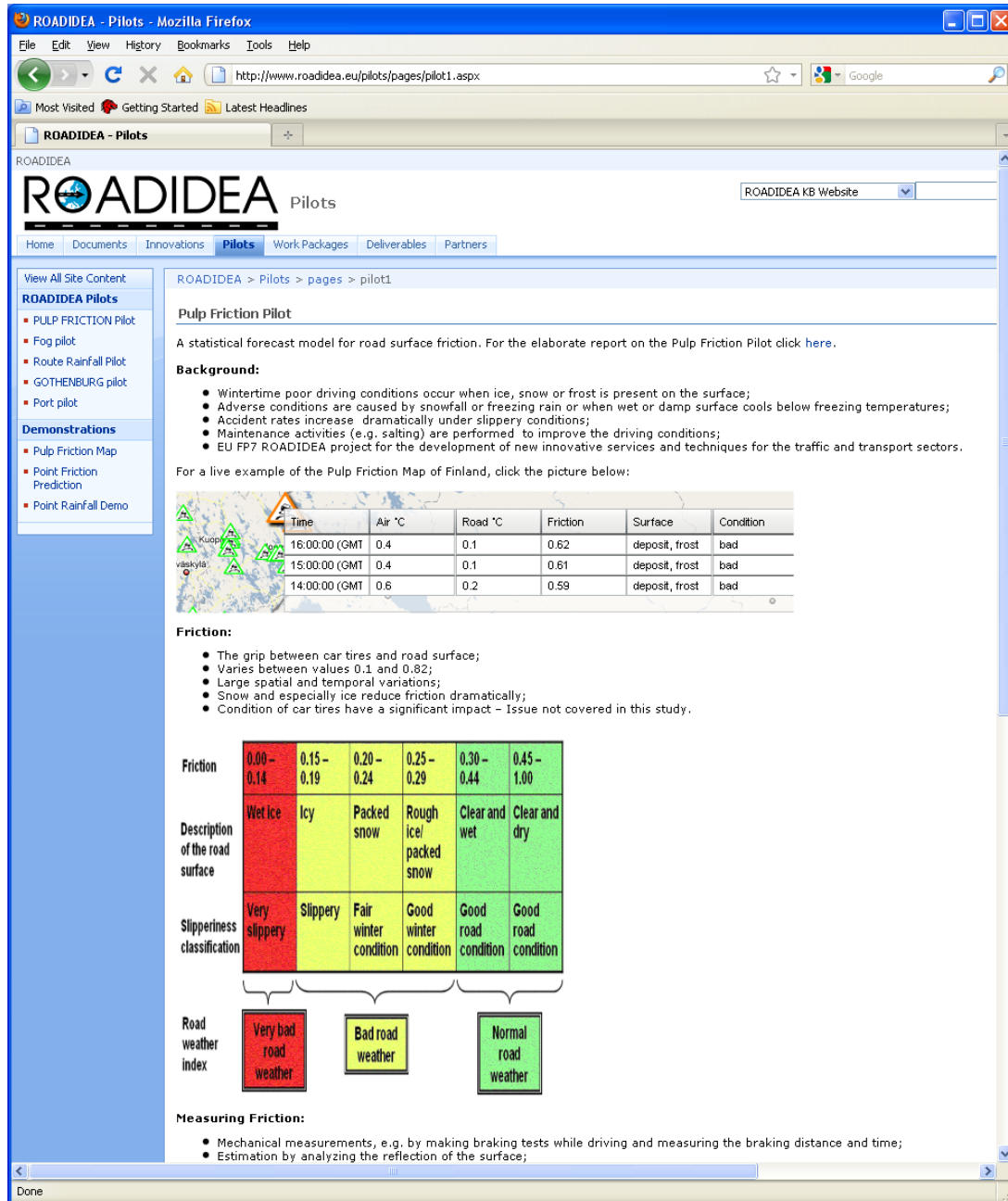


Figure 15: Pulp Friction presentation on the Pilot site

### 3.4.2 Fog Pilot

The Fog Pilot, a Fog Warning System in the Venice Region, constitutes a proof of concept, as well as a practical application of how road safety can be improved by accounting for adverse meteorological conditions, in this case reduced visibility. The presentation of the Fog Pilot on the ROADIDEA site is shown in figure 16.



Figure 16: Fog Pilot presentation on the ROADIDEA website

### 3.4.3 Route Rainfall Forecast Pilot

This pilot is developed as a pre-trip route planner with rainfall forecast for road users most exposed to weather, such as bicyclists, pedestrians and motor cyclists. This is based on a combination of the rainfall forecasts up to two hours ahead for a 1km by 1km

grid in Holland with routes generated by the Demis route planner. The result is that as a road user (cyclist, motorcyclist, pedestrian, etc.) you can better decide when to leave so as to miss the rain that is coming in. The rainfall forecasts have kindly been made available by the KNMI; a forecast can be seen at the Buienradar.nl web site. The Dutch road network data come from the OpenStreetMap project (originally provided by AND). Figure 17 shows the pilot presentation on the ROADIDEA website. In section 5.5.3 the Pilot will be discussed further in terms of the (GIS-) techniques that were used.

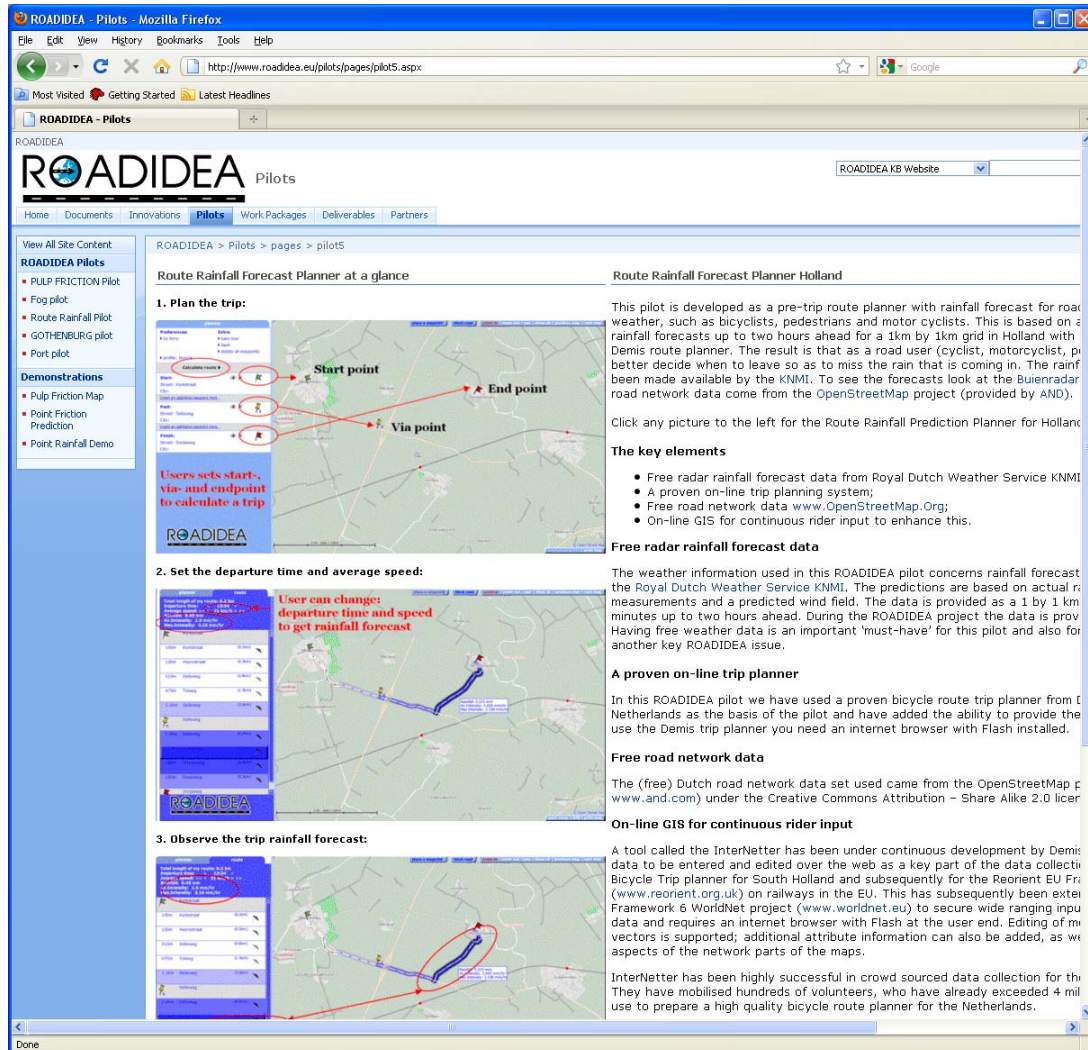


Figure 17: Route Rainfall Forecast Pilot presentation on the ROADIDEA website

### 3.4.4 Gothenburg Pilot (Conceptual)

The capacity of the roads in many cities has not grown as rapidly as the traffic flow has increased and this requires big efforts to meet the traffic needs now and in the near future. To test the ideas, Gothenburg is proposed as a ROADIDEA pilot, due to data access from several sources in the area and also that both the Swedish ROADIDEA partners, Semcon and Klimator, are located there. In a practical sense, the pilot uses data from Vägverket to make traffic flow predictions. In figure 18 the presentation of the pilot on the ROADIDEA site is shown.

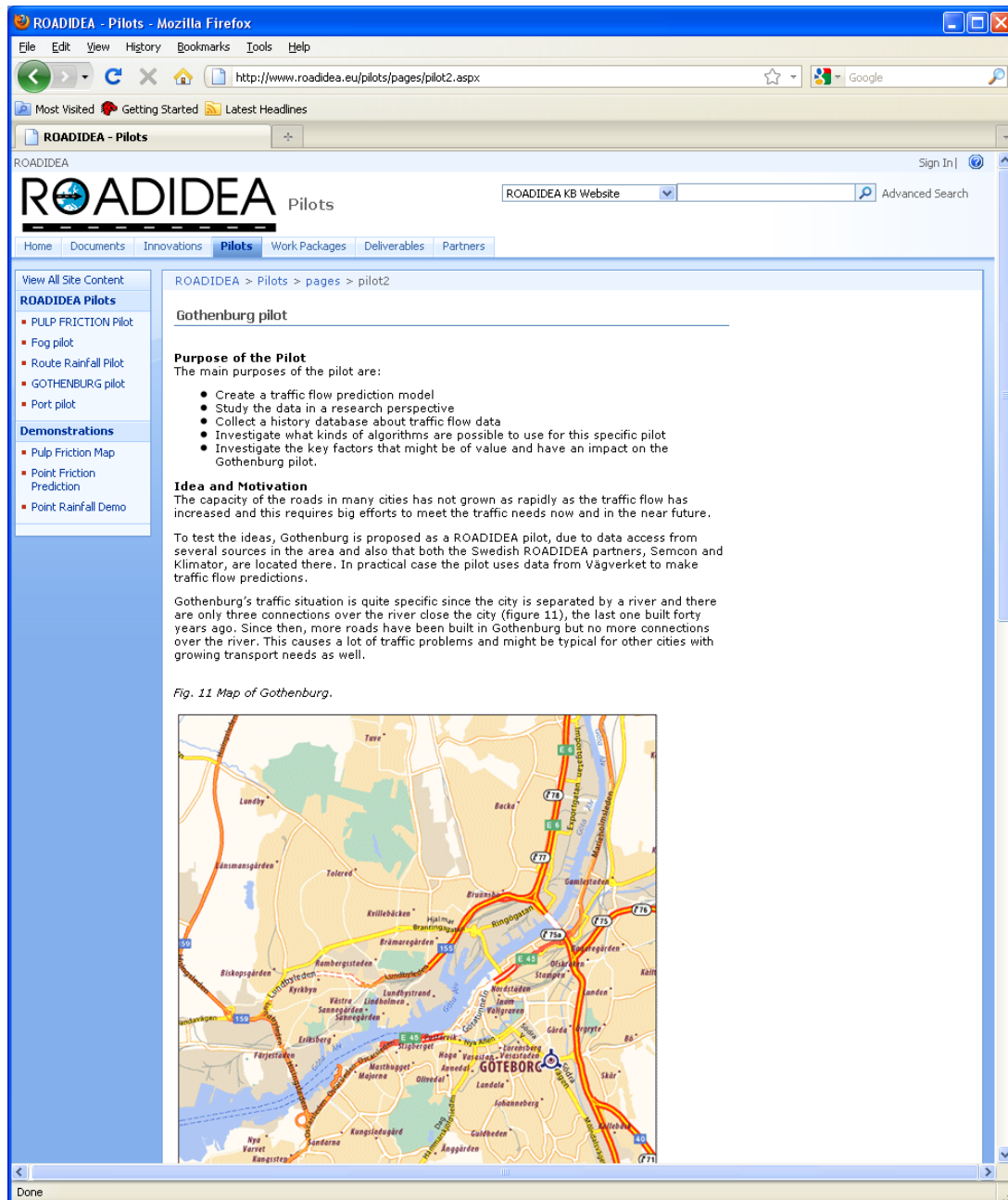


Figure 18: Gothenburg Pilot presentation on the ROADIDEA website

### 3.4.5 Port Pilot (Conceptual)

The purpose of this conceptual pilot is providing a prediction tool for the generation and distribution of road traffic depending on the ship arrivals and departures. The problem consists of two parts: the determination of a correlation between ship arrivals and road traffic generated by the container terminals and the distribution of the generated road traffic on the road network (building on the available VISUM approach). In figure 19 the presentation of the pilot on the ROADIDEA site is shown.

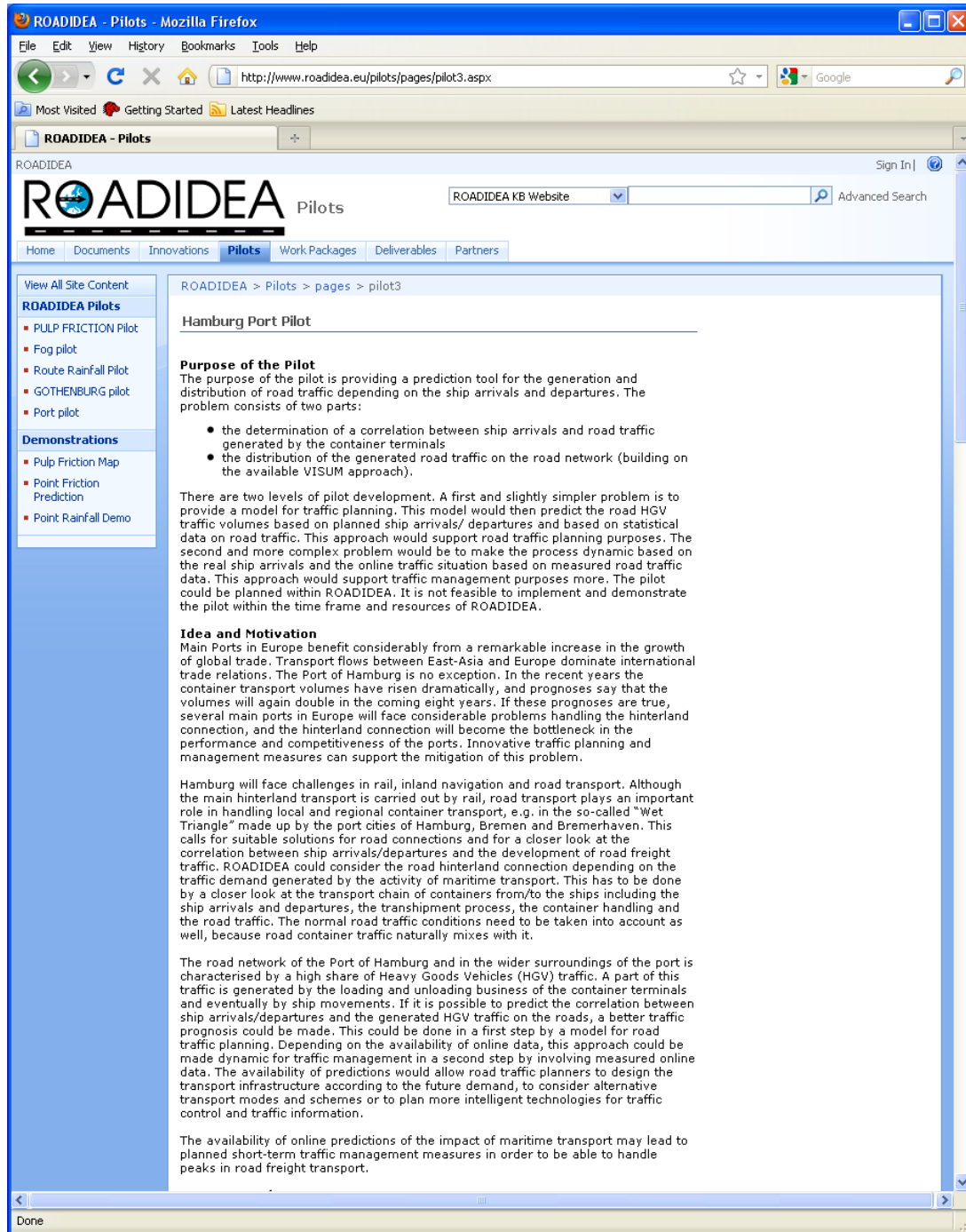


Figure 19: Hamburg Pilot presentation on the ROADIDEA website

### 3.4.6 Point Friction Demonstration

The Point Friction Demonstration project uses the Point Friction model and uses a client device geo-location (according to the W3C Geo-location API) to return the closest Friction measurement based on this location. The site includes a few links to this live demonstration, of which the applied techniques are described in sections 5.5.2 and 5.5.4.

### 3.4.7 Point Rainfall Demonstration

For this ROADIDEA demonstration the recently published Geo-location API by the World Wide Web Consortium (W3C) is used. The Point Rainfall Prediction for Holland demo is accessible by a device with an internet browser that supports the Geo-location API, such as Windows mobile phones, PC and laptops. Alternatively, Google gears needs to be installed. The location information available from the device is used to report the position and accuracy and get the point rainfall forecast from KNMI data. Location information is obtained through IP address / Wi-Fi address / Bluetooth MAC address, RFID, Wi-Fi connection location, or device GPS or GSM/CDMA cell IDs. In figure 20 the Point Rainfall Demo is shown. In section 5.5.4 the applied (GIS) techniques are presented.

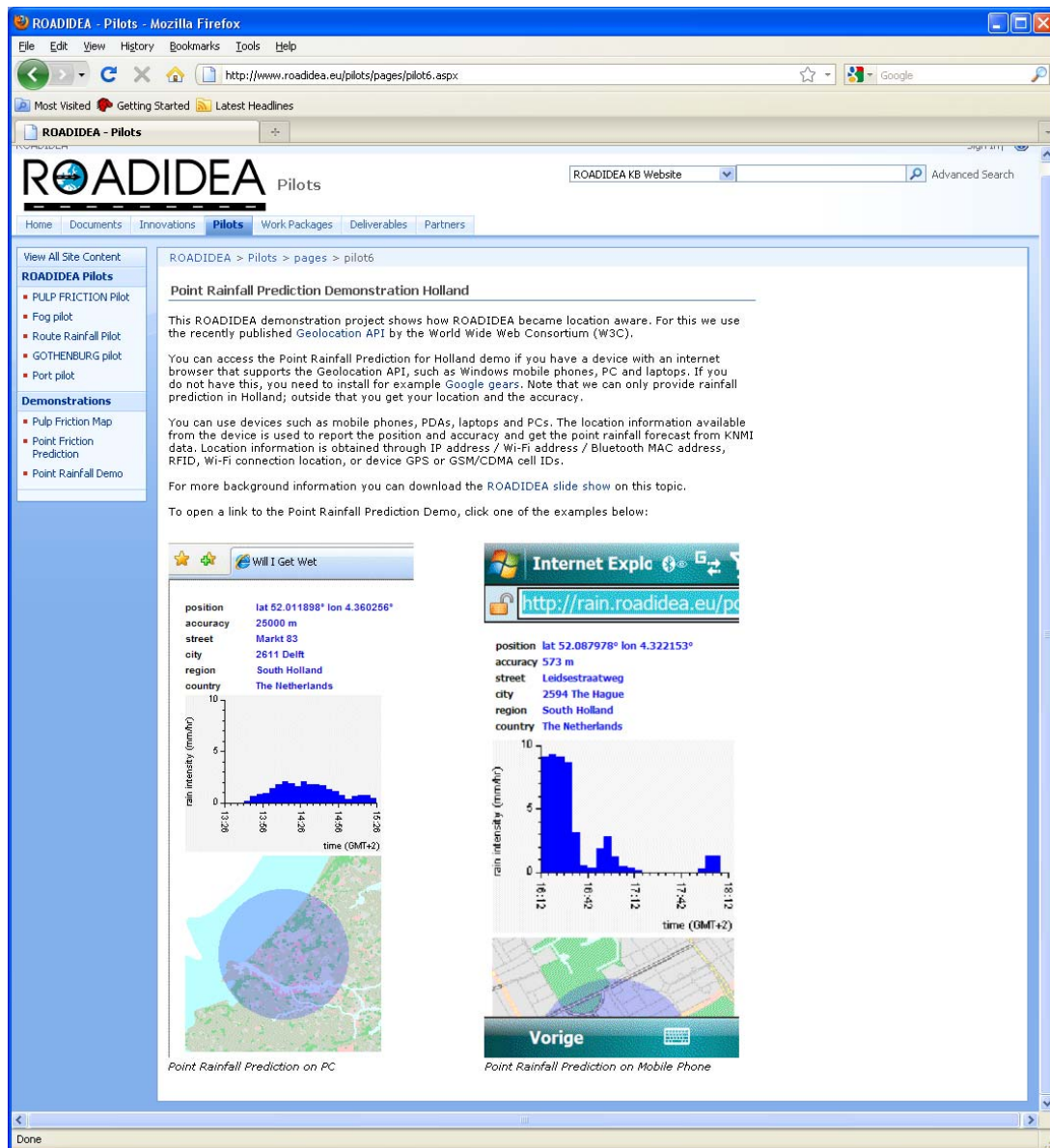
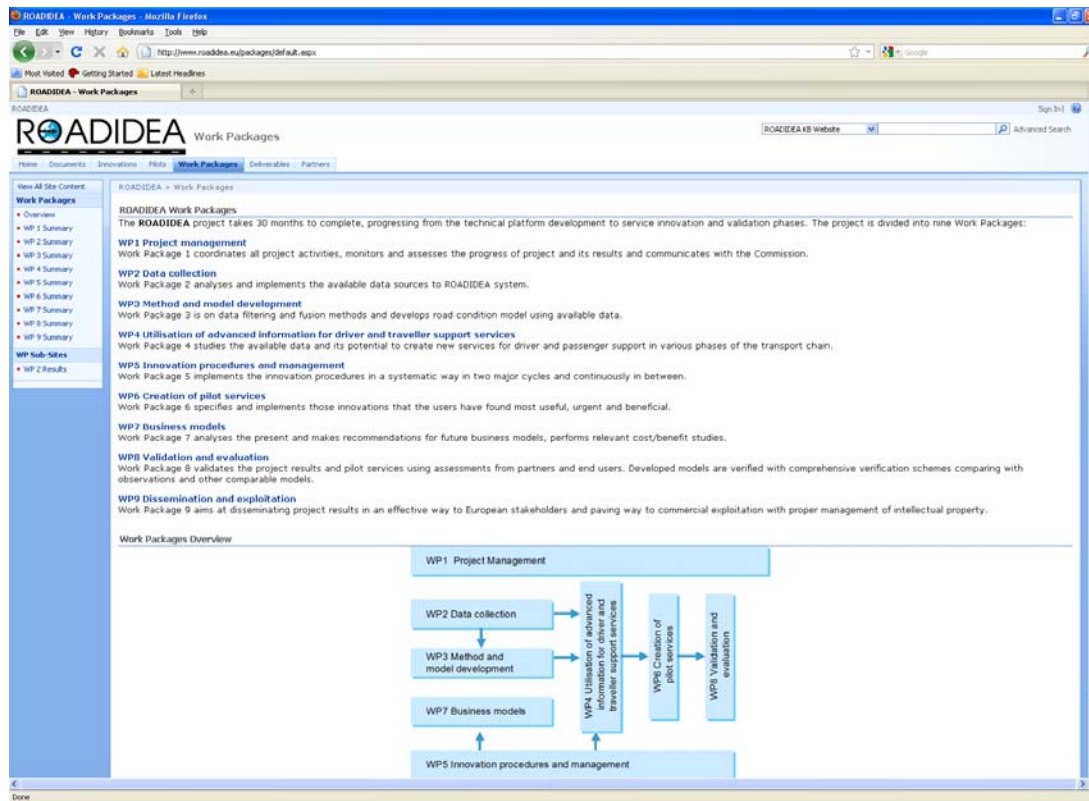


Figure 20: Point Rainfall Demonstration on the ROADIDEA website

### 3.5 Work Packages Page

The Work Packages page contains an overview of the (organization of) work packages and more detailed information per work package concerning work package objective, tasks and deliverables.

Work Packages page	Features
URL	<a href="http://www.roadidea.eu/packages/default.aspx">http://www.roadidea.eu/packages/default.aspx</a>
Purpose	Description of the organisation of the ROADIDEA project per work package. Access to WP2 Results site (thematic topographic map of data sources by country).
Available navigation	Quick launch links to work package sub sites.
Things to see	Overview of Work packages content.
Things to do	Search the work packages site.



**ROADIDEA Work Packages**

The ROADIDEA project takes 30 months to complete, progressing from the technical platform development to service innovation and validation phases. The project is divided into nine Work Packages:

- WP1 Project management**  
Work Package 1 coordinates all project activities, monitors and assesses the progress of project and its results and communicates with the Commission.
- WP2 Data collection**  
Work Package 2 analyses and implements the available data sources to ROADIDEA system.
- WP3 Method and model development**  
Work Package 3 is on data filtering and fusion methods and develops road condition model using available data.
- WP4 Utilisation of advanced information for driver and traveller support services**  
Work Package 4 studies the available data and its potential to create new services for driver and passenger support in various phases of the transport chain.
- WP5 Innovation procedures and management**  
Work Package 5 implements the innovation procedures in a systematic way in two major cycles and continuously in between.
- WP6 Creation of pilot services**  
Work Package 6 specifies and implements those innovations that the users have found most useful, urgent and beneficial.
- WP7 Business models**  
Work Package 7 analyses the present and makes recommendations for future business models, performs relevant cost/benefit studies.
- WP8 Validation and evaluation**  
Work Package 8 validates the project results and pilot services using assessments from partners and end users. Developed models are verified with comprehensive verification schemes comparing with observations and other comparable models.
- WP9 Dissemination and exploitation**  
Work Package 9 aims at disseminating project results in an effective way to European stakeholders and paving way to commercial exploitation with proper management of intellectual property.

**Work Packages Overview**

```

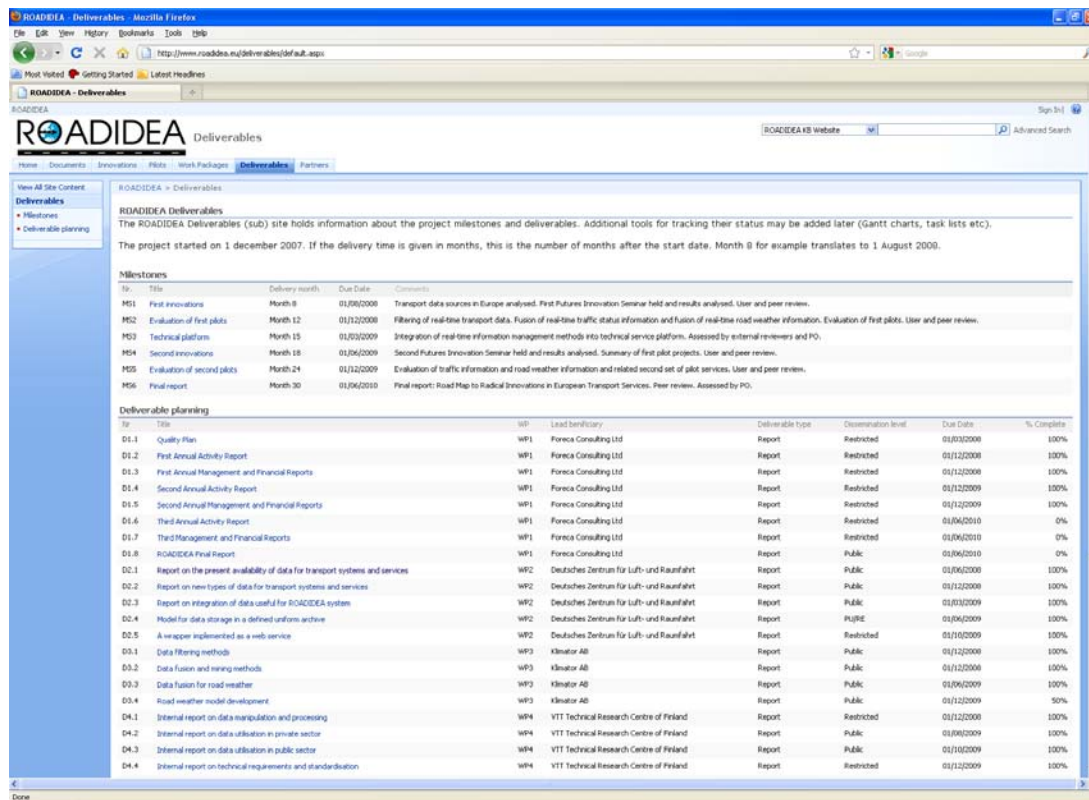
graph TD
    WP1[WP1 Project Management] --> WP2[WP2 Data collection]
    WP2 --> WP3[WP3 Method and model development]
    WP3 --> WP4[WP4 Utilisation of advanced information for driver and traveller support services]
    WP4 --> WP5[WP5 Innovation procedures and management]
    WP5 --> WP6[WP6 Creation of pilot services]
    WP6 --> WP7[WP7 Business models]
    WP7 --> WP8[WP8 Validation and evaluation]
    WP8 --> WP9[WP9 Dissemination and exploitation]
  
```

Figure 21: ROADIDEA Work Packages page

### 3.6 Deliverables Page

The deliverables page presents an overview of (the status of) ROADIDEA deliverables and milestones, both public and restricted. The links to the actual (public) deliverables are available on several other locations, such as the home page, the final seminar page and the documents page.

Deliverables page	Features
URL	<a href="http://www.roadidea.eu/deliverables/default.aspx">http://www.roadidea.eu/deliverables/default.aspx</a>
Purpose	Overview of the project milestones and the (status of) ROADIDEA public and restricted deliverables.
Available navigation	Links to complete Milestones and Deliverables list.
Things to see	Overview of (status of) ROADIDEA milestones and deliverables.
Things to do	Search the deliverables site.



**ROADIDEA Deliverables**

The ROADIDEA Deliverables (sub) site holds information about the project milestones and deliverables. Additional tools for tracking their status may be added later (Gantt charts, task lists etc).

The project started on 1 december 2007. If the delivery time is given in months, this is the number of months after the start date. Month 0 for example translates to 1 August 2008.

St	Title	Delivery month	Due Date	Comments
MS1	First innovations	Month 0	01/08/2008	Transport data sources in Europe analysed. First Futures Innovation Seminar held and results analysed. User and peer review.
MS2	Evaluation of first pilots	Month 12	01/12/2008	Filtering of real-time transport data. Fusion of real-time traffic status information and fusion of real-time road weather information. Evaluation of first pilots. User and peer review.
MS3	Technical platform	Month 15	01/03/2009	Integration of real-time information management methods into technical service platform. Assessed by external reviewers and PO.
MS4	Second innovations	Month 18	01/06/2009	Second Futures Innovation Seminar held and results analysed. Summary of first pilot projects. User and peer review.
MS5	Evaluation of second pilots	Month 24	01/12/2009	Evaluation of traffic information and road weather information and related second set of pilot services. User and peer review.
MS6	Final report	Month 30	01/06/2010	Final report: Road Map to Radical Innovations in European Transport Services. Peer review. Assessed by PO.

St	Title	WP	Lead beneficiary	Deliverable type	Classification level	Due Date	% Complete
D1.1	Quality Plan	WP1	Foreca Consulting Ltd	Report	Restricted	01/03/2008	100%
D1.2	First Annual Activity Report	WP1	Foreca Consulting Ltd	Report	Restricted	01/12/2008	100%
D1.3	First Annual Management and Financial Reports	WP1	Foreca Consulting Ltd	Report	Restricted	01/12/2008	100%
D1.4	Second Annual Activity Report	WP1	Foreca Consulting Ltd	Report	Restricted	01/12/2009	100%
D1.5	Second Annual Management and Financial Reports	WP1	Foreca Consulting Ltd	Report	Restricted	01/12/2009	100%
D1.6	Third Annual Activity Report	WP1	Foreca Consulting Ltd	Report	Restricted	01/06/2010	0%
D1.7	Third Management and Financial Reports	WP1	Foreca Consulting Ltd	Report	Restricted	01/06/2010	0%
D1.8	ROADIDEA Final Report	WP1	Foreca Consulting Ltd	Report	Public	01/06/2010	0%
D2.1	Report on the present availability of data for transport systems and services	WP2	Deutsches Zentrum für Luft- und Raumfahrt	Report	Public	01/06/2008	100%
D2.2	Report on new types of data for transport systems and services	WP2	Deutsches Zentrum für Luft- und Raumfahrt	Report	Public	01/12/2008	100%
D2.3	Report on integration of data useful for ROADIDEA system	WP2	Deutsches Zentrum für Luft- und Raumfahrt	Report	Public	01/03/2009	100%
D2.4	Model for data storage in a defined uniform archive	WP2	Deutsches Zentrum für Luft- und Raumfahrt	Report	Public	01/06/2009	100%
D2.5	A wrapper implemented as a web service	WP2	Deutsches Zentrum für Luft- und Raumfahrt	Report	Restricted	01/10/2009	100%
D3.1	Data filtering methods	WP3	Klimator AB	Report	Public	01/12/2008	100%
D3.2	Data fusion and mining methods	WP3	Klimator AB	Report	Public	01/12/2008	100%
D3.3	Data fusion for road weather	WP3	Klimator AB	Report	Public	01/06/2009	100%
D3.4	Road weather model development	WP3	Klimator AB	Report	Public	01/12/2009	50%
D4.1	Internal report on data manipulation and processing	WP4	VTT Technical Research Centre of Finland	Report	Restricted	01/12/2008	100%
D4.2	Internal report on data utilisation in private sector	WP4	VTT Technical Research Centre of Finland	Report	Public	01/06/2009	100%
D4.3	Internal report on data utilisation in public sector	WP4	VTT Technical Research Centre of Finland	Report	Public	01/10/2009	100%
D4.4	Internal report on technical requirements and standardisation	WP4	VTT Technical Research Centre of Finland	Report	Restricted	01/12/2009	100%

Figure 22: ROADIDEA Deliverables page

### 3.7 Partners Page

The Partners page provides an overview and links to ROADIDEA partners. In addition an overview of the ROADIDEA key staff is available.

Partners page	Features
URL	<a href="http://www.roadidea.eu/partners/default.aspx">http://www.roadidea.eu/partners/default.aspx</a>
Purpose	Provide information on and links to all partners, provide a ROADIDEA face book for all key staff involved.
Available navigation	Links to ROADIDEA partner pages, partner websites and ROADIDEA key staff.
Things to see	Overview and description of ROADIDEA partners.
Things to do	Search the Partners site.

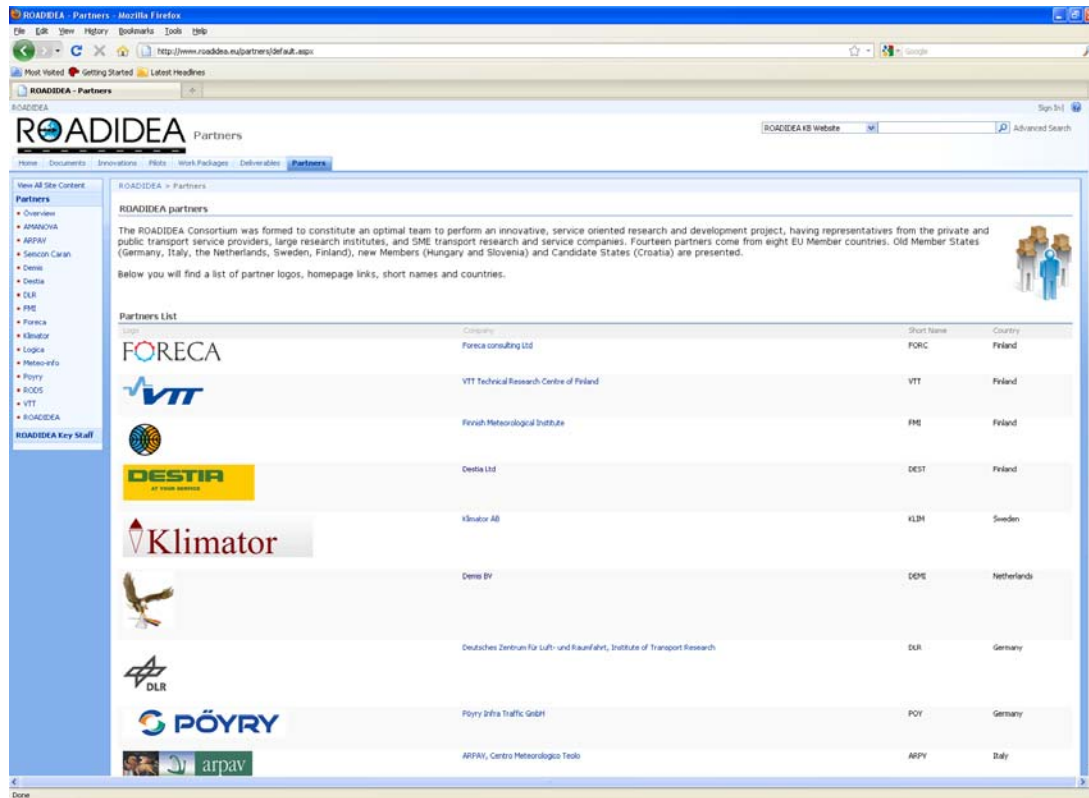


Figure 23: ROADIDEA Partners page

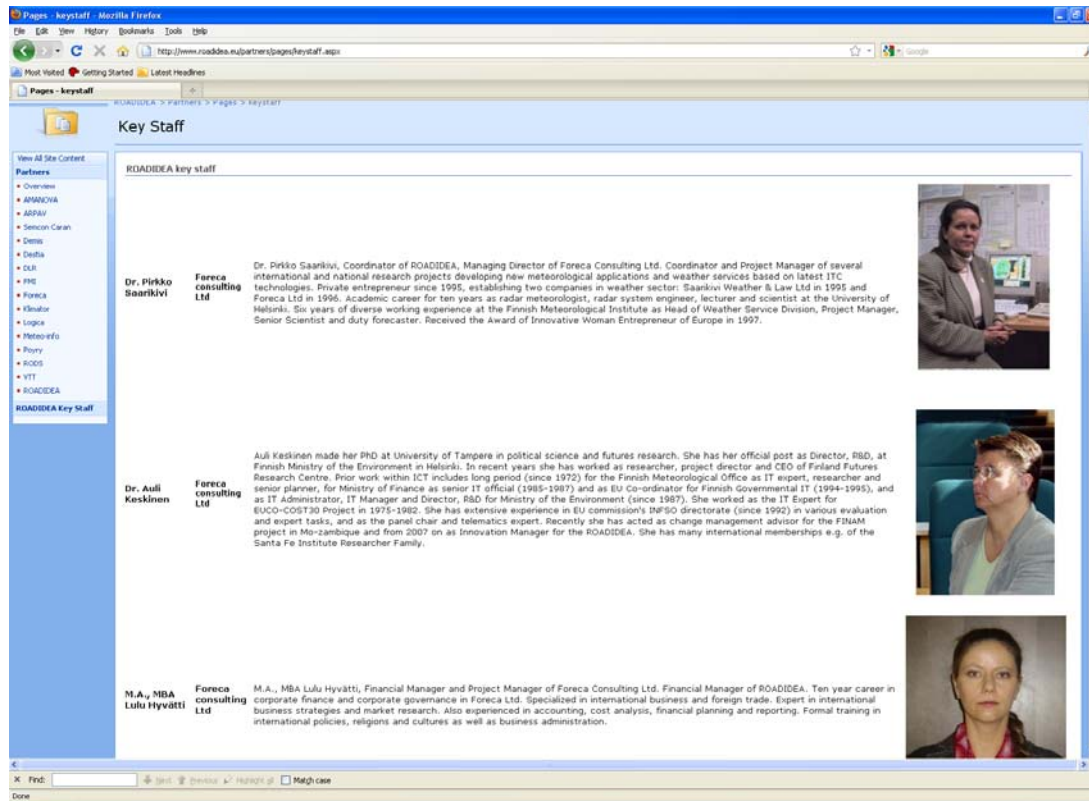


Figure 24: ROADIDEA Key staff page

### 3.8 Innovation WIKI Page

Within the (mostly restricted) Community site, this is the only part that is available for public users. However, to contribute to the WIKI discussions, it is necessary to sign in or request a visitor account. Viewing the information on the WIKI site is not restricted.

Innovation Wiki	Features
URL	<a href="http://www.roadidea.eu/community/wikis/Innovations/Home.aspx">http://www.roadidea.eu/community/wikis/Innovations/Home.aspx</a>
Purpose	Shows the ongoing discussions taking place on the ROADIDEA Ideas and Pilots. Has taken the form of a wiki to allow for easy extension of the information provided.
Available navigation	Quick launch to Ideas categories, WIKI baskets and recent changes.
Things to see	Overview and description innovation ideas and pilots WIKI.
Things to do	As normal in a wiki one needs to sign in. Anonymous users can contact us by e-mail to get a visitors account so they can add to the discussion here.

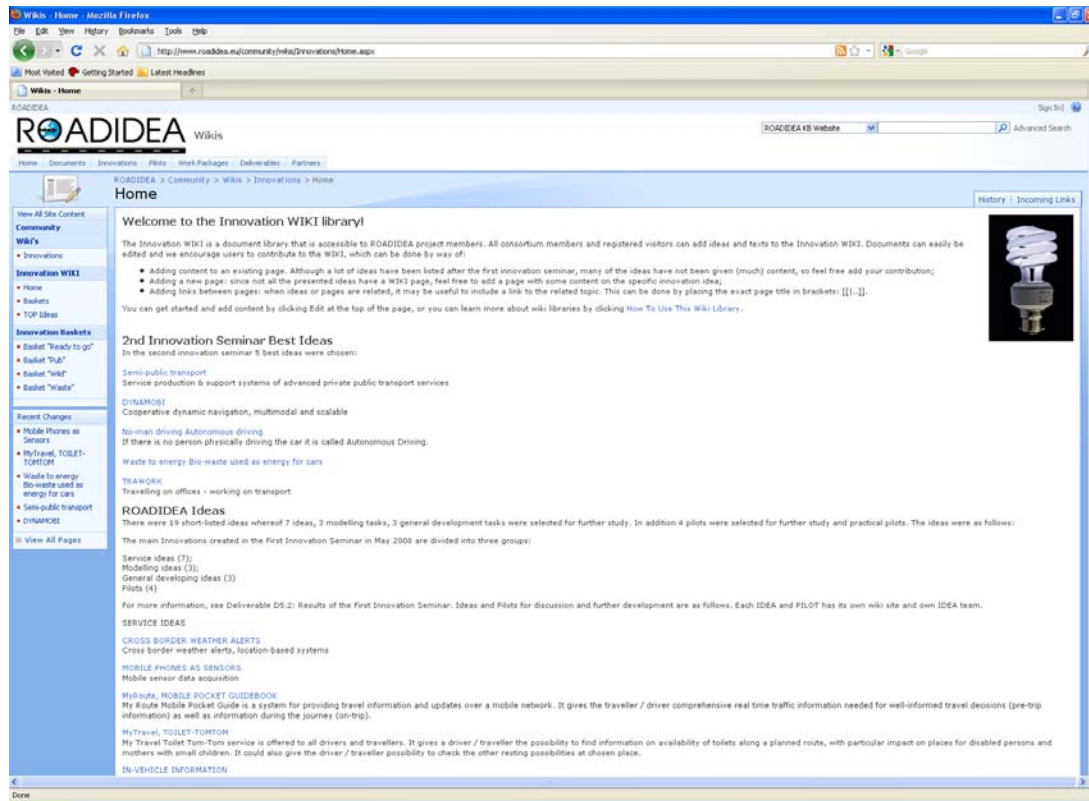


Figure 25: ROADIDEA Innovation WIKI site

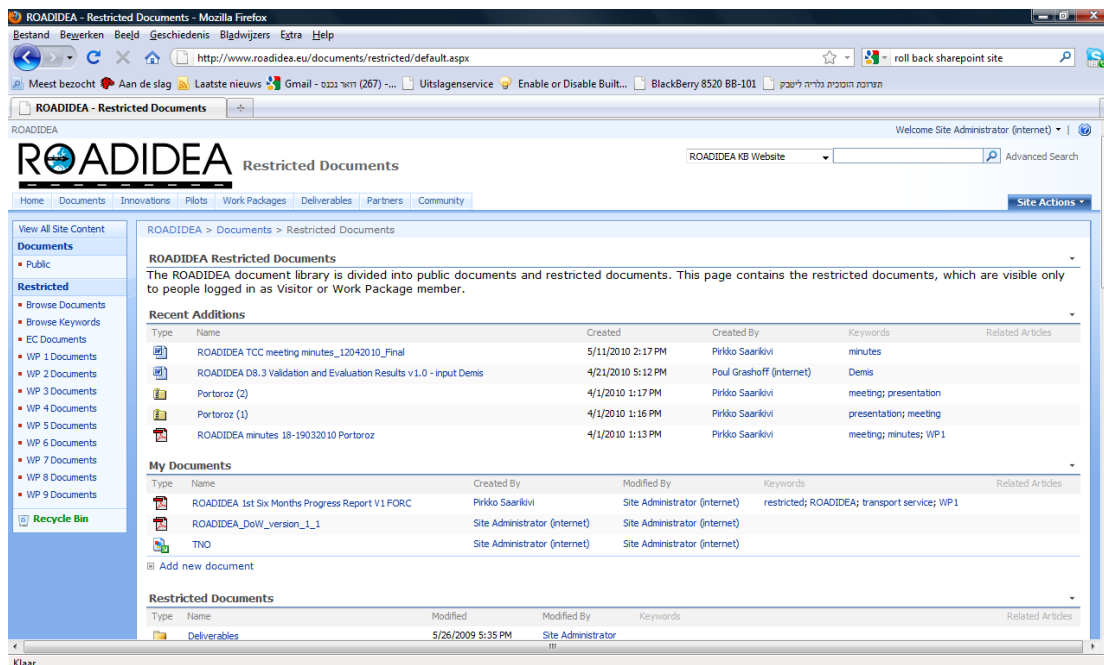
## 4. ROADIDEA Website Restricted Part

The restricted part of the ROADIDEA SharePoint website requires that a user acquires a user account with which he can log in to the site. Accounts have been made available to all project members and visitors requesting a user account have been provided with one. The restricted part of the website contains mainly documents and content which is intended for sharing and communication between project members.

Obviously the registered user has access to all public parts as described in the previous chapter. In addition a ROADIDEA community member can access a number of restricted web site parts, both to more general parts and to the community site in particular; these will be discussed next. The newly available parts on the community site will be described in full detail. The added functionality to public accessible parts will be mentioned briefly with reference to the description given in chapter 3.

### 4.1 General restricted parts

The ROADIDEA site contains some general restricted parts that are only available to registered users. This is reflected by the fact that either (this part of) the site becomes available or some features of the site such as editing or adding content become available. The table on the next page shows some more general parts that are available to members after logging in as a registered user. The figure below shows the ROADIDEA restricted documents repository. For the Calendar and Announcements lists as described in sections 3.1.1 and 3.1.2 respectively some additional functionality is available.



The screenshot shows the ROADIDEA Restricted Documents repository. The page is titled "ROADIDEA Restricted Documents" and includes a navigation bar with links like Home, Documents, Innovations, Pilots, Work Packages, Deliverables, Partners, and Community. A sidebar on the left lists "View All Site Content" and "Documents" with sub-categories like Public, Restricted, and various Work Package (WP) documents. The main content area displays "Recent Additions" and "My Documents" as tables.

Type	Name	Created	Created By	Keywords	Related Articles
	ROADIDEA TCC meeting minutes_12042010_Final	5/11/2010 2:17 PM	Pirkko Saarikivi	minutes	
	ROADIDEA D8.3 Validation and Evaluation Results v1.0 - input Demis	4/21/2010 5:12 PM	Poul Grashoff (internet)	Demis	
	Portoroz (2)	4/1/2010 1:17 PM	Pirkko Saarikivi	meeting; presentation	
	Portoroz (1)	4/1/2010 1:16 PM	Pirkko Saarikivi	presentation; meeting	
	ROADIDEA minutes 18-19032010 Portoroz	4/1/2010 1:13 PM	Pirkko Saarikivi	meeting; minutes; WP1	

Type	Name	Created By	Modified By	Keywords	Related Articles
	ROADIDEA 1st Six Months Progress Report V1 FORC	Pirkko Saarikivi	Site Administrator (internet)	restricted; ROADIDEA; transport service; WP1	
	ROADIDEA_DoW_version_1_1	Site Administrator (internet)	Site Administrator (internet)		
	TNO	Site Administrator (internet)	Site Administrator (internet)		

Below the "My Documents" table, there is a section for "Restricted Documents" with a table showing:

Type	Name	Modified	Modified By	Keywords	Related Articles
	Deliverables	5/26/2009 5:35 PM	Site Administrator		

Figure 26: Restricted documents repository

Part	Purpose	Additional available actions	Usage
Restricted documents [Documents site]	The library for all internal documents	Add documents and edit Dublin Core metadata	Very Often
Calendar [Home page]	The ROADIDEA calendar	Add and edit events in the ROADIDEA calendar (par. 3.1.1)	Occasionally
Announcements [Home page]	Tell members what is happening	Post and edit announcements (section 3.1.2)	Occasionally

## 4.2 ROADIDEA Community site

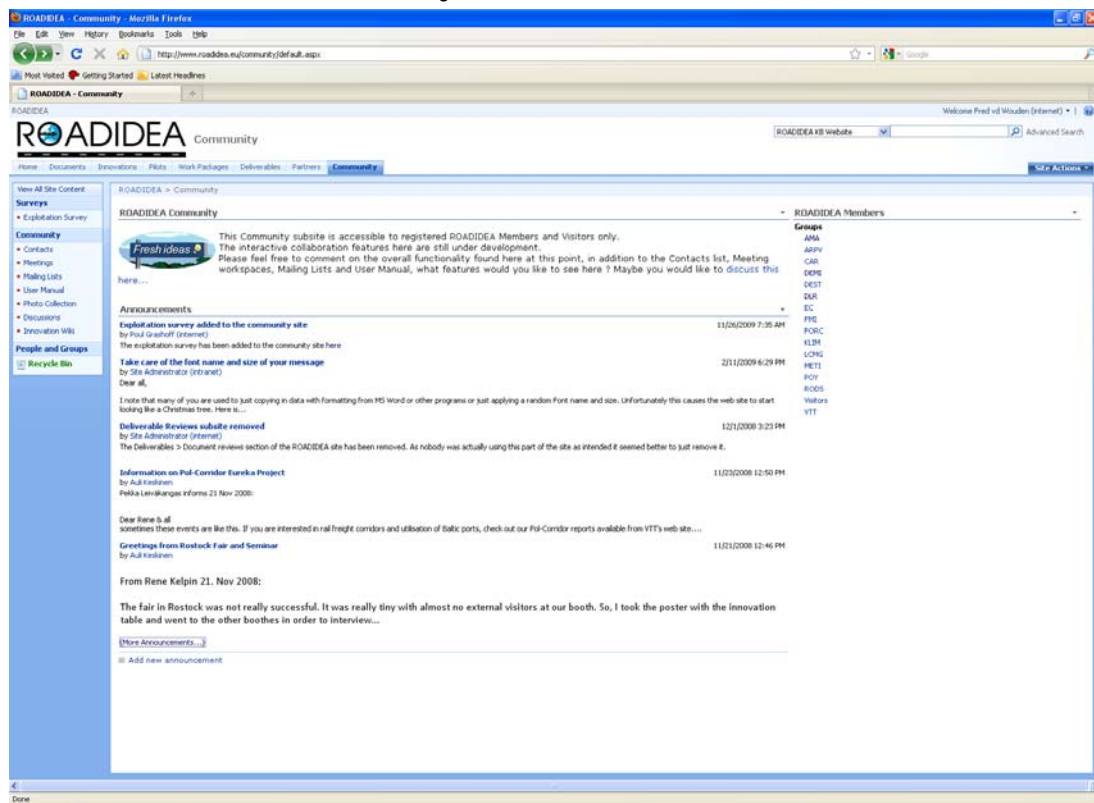


Figure 27: Restricted ROADIDEA Community site

The ROADIDEA community site is mainly designed for project members and other registered users. Only the Innovation WIKI is available to public users and then only for viewing the WIKI content. When signing in as a registered user, the community site becomes visible and the following options become available:

Part	Purpose	Things a member can do additionally	Usage
Exploitation Survey	Used to collect exploitation plans of partners	Place and edit exploitation survey questionnaire	All partners
Contacts	Overview of project member details	Add and edit contacts	Kept up to date by the site administrator (Demis)

Part	Purpose	Things a member can do additionally	Usage
Meetings	Support for meetings with information and meeting specific repositories	Add / edit agenda items, upload documents, manage attendees, view all information	Initial meetings were put here, not much interest in using this feature.
Mailing lists	Store all mails sent to the mailings lists (the e-mail archive). Includes suggestions by visitors.	View the mails as if they were discussions. Export mail discussion lists to MS Excel or MS Access.	Archive is automatically filled by Share-Point
Photo Collection	Upload and manage pictures	Add a folder and upload pictures to it.	Is often used for exchanging pictures
Discussions	Discuss financial or general matters using discussion board	Add a discussion thread and edit it	Occasionally
People and groups	ROADIDEA members are grouped by company to set access rights and to manage mailing lists	Manage the groups by adding or changing contacts	Kept up to date by the site administrator (Demis)

Screenshots of the most used restricted community parts are given on the next pages.

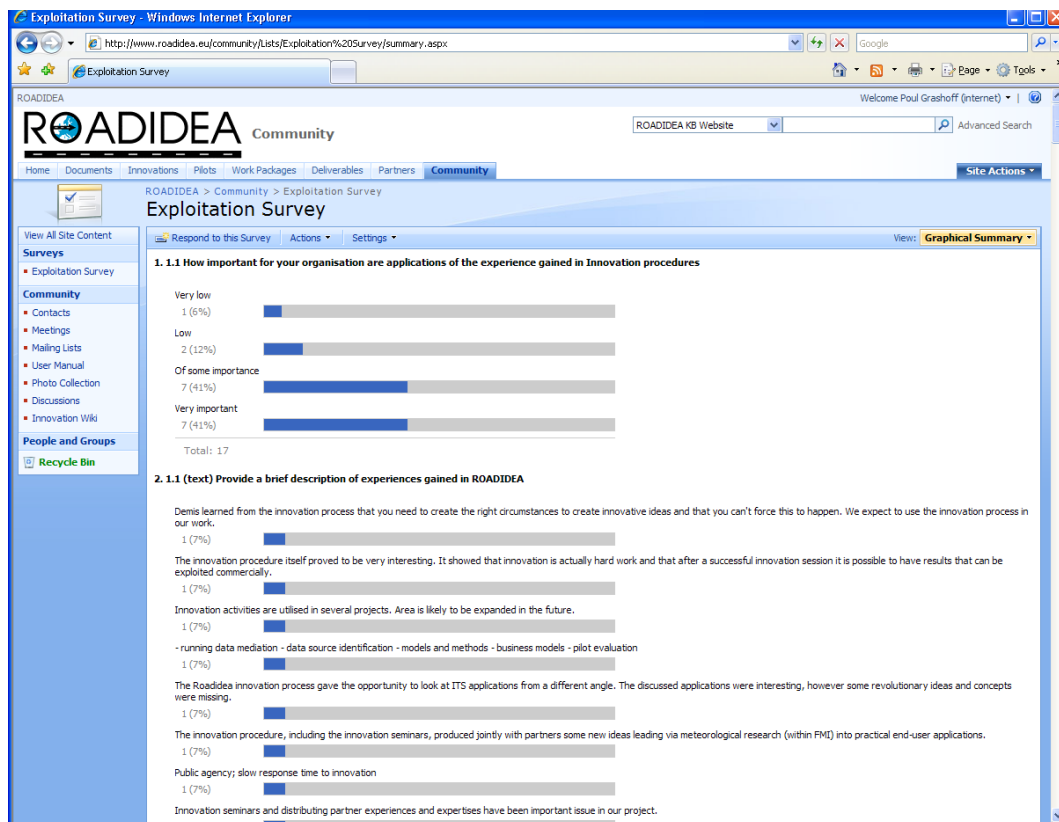
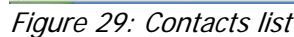


Figure 28: Exploitation survey



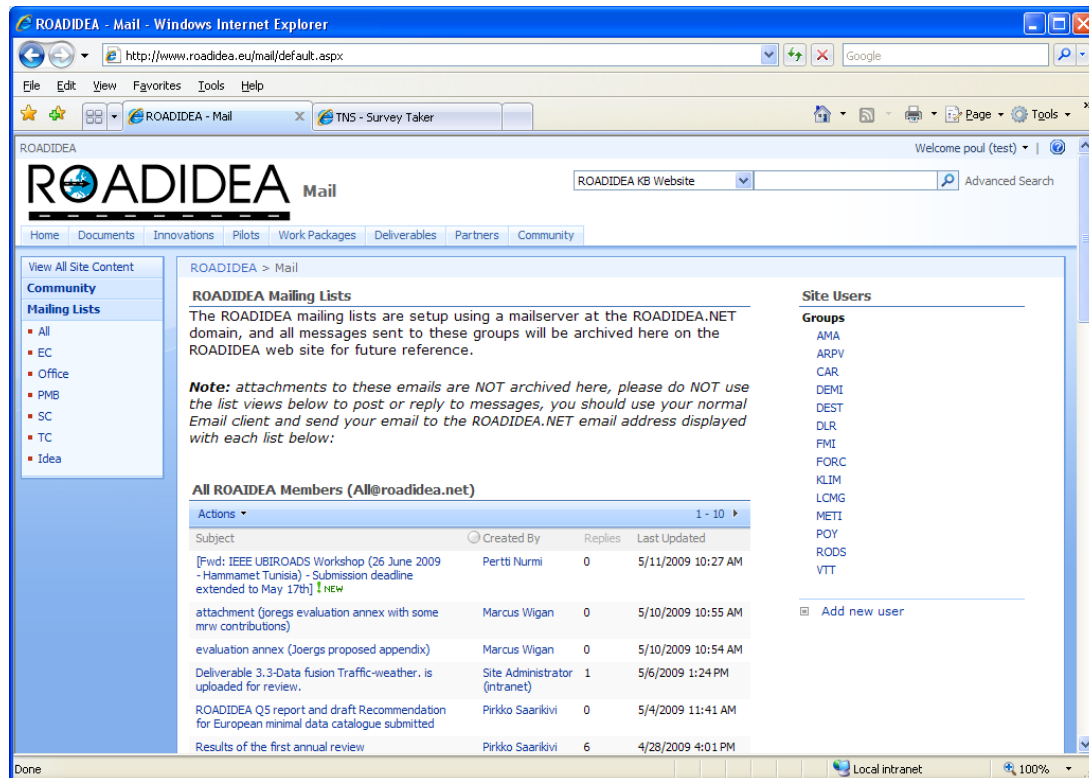


Figure 31: ROADIDEA Mail archive site

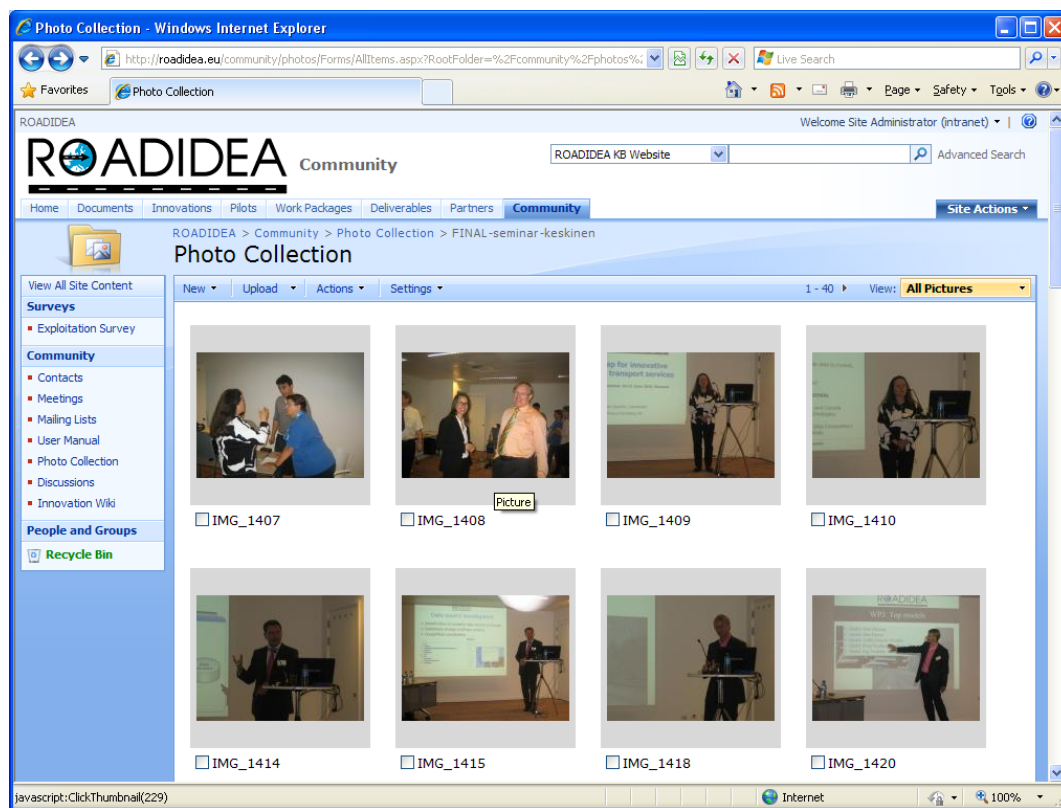


Figure 32: Community Photo Collection repository

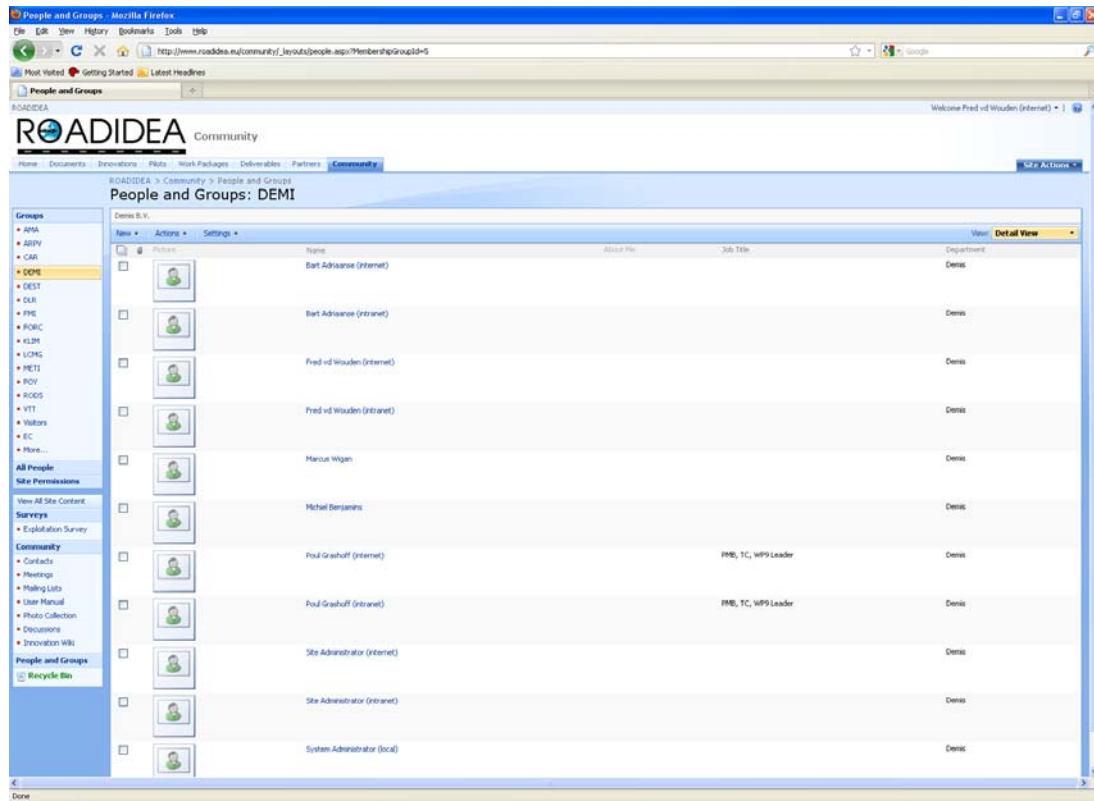


Figure 33: People and groups management

### 4.3 WIKI

The Innovation WIKI shows the ongoing discussions taking place on the ROADIDEA Ideas and Pilots. This has taken the form of a wiki to allow for easy extension of the information provided. The Sharepoint User Manual has also been presented in the form of a Wiki, to allow users to respond with questions they have and resolve them adequately.

Part	Purpose	Things a member can do additionally	Usage
User Manual	A Wiki that has the user manual for the project website	Add and edit Wiki pages to enhance the manual	Kept up to date by Demis
Innovation Wiki	The library for all idea-related information and articles.	Add pages and edit them	Often

Screenshots of the Innovation WIKI and User Manual WIKI are given on the next page.

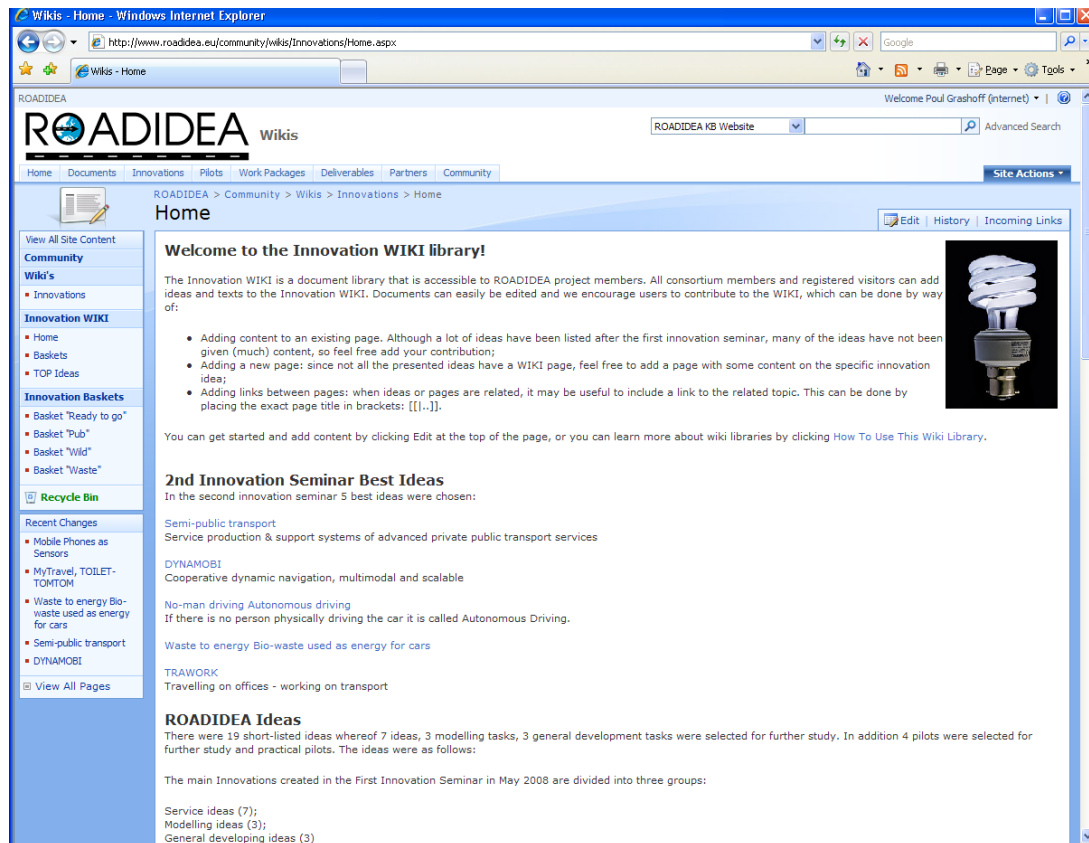


Figure 34: Community Innovation Wiki

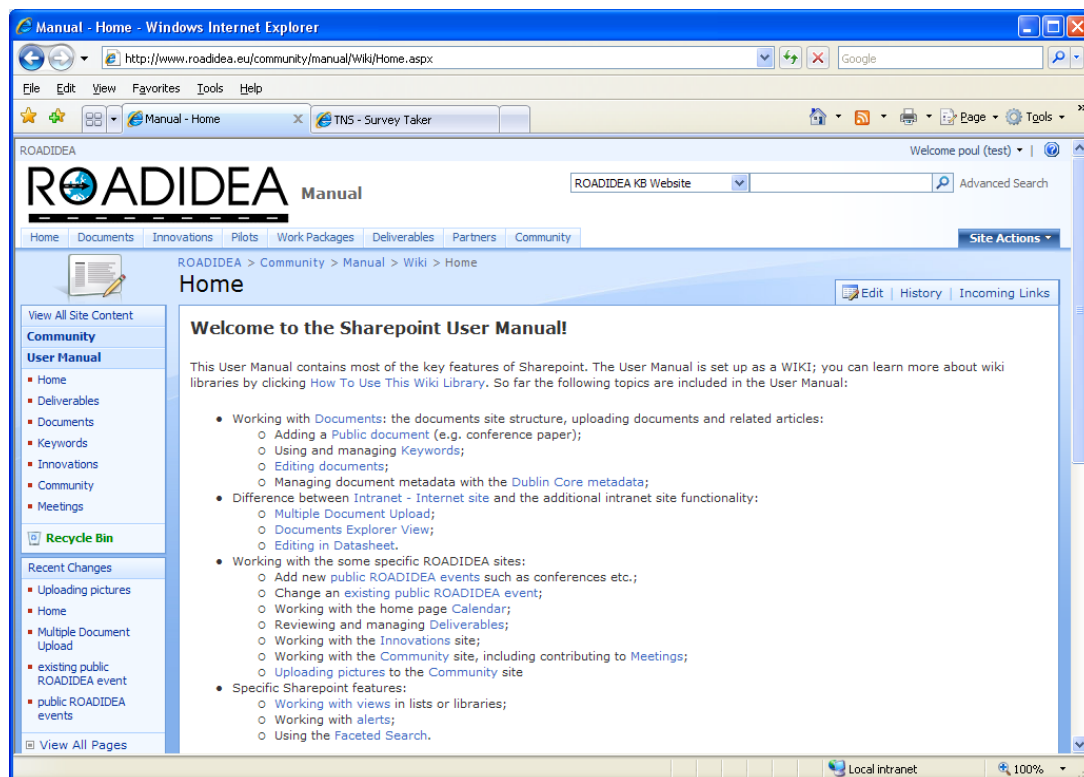


Figure 35: Community ROADIDEA user manual Wiki

## 5. ROADIDEA website techniques

The ROADIDEA website has been developed and maintained in a Microsoft SharePoint environment. SharePoint is a Microsoft platform that serves as a framework for setting up a website or portal for information-exchange and online collaboration within a group or organisation, as happens often within an intranet environment. An important concept of SharePoint is the availability of libraries in which documents can be stored. The saved documents can be provided with Metadata to describe the document and its properties. The libraries furthermore support versioning of documents, which can be not just Microsoft Office documents (Word, Excel, PowerPoint) but basically any digital format.

SharePoint offers a wide variety of functionality for sharing and presenting information and data, but notably exchange of information through web forums, surveys, tasks and an agenda. A full description will be given in the following chapters. The main purpose is to share the information in the right way with the right audience, given the fact that there are multiple target groups, both internally and externally to the project.

SharePoint 2007 which was used for this project has two variants: Windows SharePoint Services (WSS) en Microsoft Office SharePoint Server (MOSS). SharePoint 2007 presents WSS version 3 and MOSS has been introduced as successor of SharePoint Portal Server (SPS). MOSS can be seen as an extension to WSS and offers additional functionality, such as integration with other applications and databases and an enterprise Management system. However this functionality is considered to be superfluous, so instead of choosing the server heavy MOSS, in ROADIDEA the Windows SharePoint Services (WSS) was selected as platform for the website, which will be described in section [5.1](#).

The main features of WSS that were implemented in the ROADIDEA site are described in section 5.2. Any additional functionality that would be required, such as an enhanced editor or search engine, can be supported by integrating special web parts. These are described in section [5.3](#). An important feature of Sharepoint is the ability to reproduce the Sharepoint site on another server, making it possible to reproduce the ROADIDEA site, which is described in section 5.4. Some additional techniques (mostly GIS related) used for the ROADIDEA pilots are described in section 5.5.

### 5.1 Windows SharePoint Services (WSS)

Windows SharePoint Services is a Windows Server technology that provides a robust storage and collaboration infrastructure, a foundation platform for building Web-based applications and services, and easy to use tools for information-sharing that help people stay connected across organizational and geographic boundaries and gain access to the information they need. Windows SharePoint Services helps teams stay connected and productive by providing easy access to the people, documents, and information they need to make more informed decisions and get the job done. Enhancements in Windows SharePoint Services 3.0 make it easier than ever to share documents, track tasks, use e-mail efficiently and effectively, and share ideas and information.

Windows SharePoint Services 2007 is basically similar to the previous WSS version, but has added a WIKI module and a blog module. The integration with Microsoft Office 2007 is one of the most important features, although this sometimes results in lacking functionality in combination with Office 2003. In addition, integration with other Microsoft products such as Active Directory for Authentication and Exchange has been provided.

SharePoint uses amongst others the .NET framework, IIS, SQL server en WSS version 3 runs on Windows Server 2003 and 2008. SharePoint is available in multiple languages.

The installation package of Windows SharePoint Services is usually available in the Windows Server 2003, but can also be downloaded from the Microsoft website. The framework is a Microsoft .NET application that uses 'web-part' technology. With this, the designer can build up a webpage from multiple components. A web-part can consist of news items, lists, links, text, recommendations, discussions and many more components. Windows SharePoint Services can be extended by choice to include self built web parts (for which a development environment such as Visual Studio is required) or web parts that have been acquired from third parties. With the SharePoint Designer program, certain functionality in SharePoint can be adjusted, such as creating site templates that are used for the ROADIDEA meetings or seminars.

SharePoint Services also offers the possibility to create so-called 'document workspaces' in which project teams can work on documents, enabling features as providing annotations, additional source material en discussions. The owner of the document can invite other members to participate in the team and members will be automatically informed of document changes. In particular the document reviewing functionality is available to take documents (deliverables) from the initial draft phase to the final deliverable.

## 5.2 Applied SharePoint Services

Services	Used for	Location
Site Navigation	Navigation to other ROADIDEA site pages (quick cross links through the quick launch menu or tabs for )	Throughout the whole site
Search	Searching the site (extended to faceted search, see section 5.3.1)	Whole site
Document Library	Public and restricted document libraries	Document site
Collaborative editing with Microsoft Office integration	Online management (check-in-check-out) and editing of documents.	Documents site
Custom Pages	Work packages specific pages Innovations Pilots presentation and external links Innovation and Final Seminar sites	Work packages Site Innovations site Pilots site Innovation site
Announcements	General announcements and more (community) specific notes.	Home page, community site
Discussion Boards	General purpose discussion boards and specific topics (i.e. financial)	Community
Link Lists	Lists containing links to relevant / useful ROADIDEA pages or external sites	Throughout the site, sometimes as tag clouds (section 5.3.5)
Mailing lists	Adding users to specific mailing lists (e.g. Technical Committee and Project Management Board) enhances e-mail effectiveness and e-mail archiving	Community site
WIKI	Innovation WIKI	Community site

The Windows SharePoint Services platform described in the previous section offers a lot of built-in functionality. In the table the functionality that was actually used for the ROADIDEA site is summarized. In the next section the additionally installed web parts are being described, that are not incorporated as basic functionality in Windows SharePoint Services.

### 5.3 Added web parts

The ROADIDEA SharePoint site makes use of a number of utilities (plug-ins), which are available on the site as web parts. These web parts are integrated on various locations on the ROADIDEA website in order to:

- Enhance the usability and presentation of the site to users;
- Improve on basic SharePoint functionality where this is required;
- Enable better searching and navigating the ROADIDEA site;
- Improve the appeal and variation of presenting content on the websites to users.

The various web parts that were used to enable these improvements are described in the next sections.

#### 5.3.1 Faceted Search (MS search 4)

The basic search functionality in SharePoint has already proven to be limited in previous EC Projects such as WORLDNET ([www.worldnetproject.eu](http://www.worldnetproject.eu)). This especially is noticeable in elaborate document libraries, where it may become difficult to find specific documents using the basic search facility. MOSS Faceted Search is a set of web parts that provide an intuitive way to refine search results by category (facet). Apart from providing advanced search possibilities, the results are shown allowing selection of sub categories by for instance specific author, content type or content source. More information can be found on: <http://facetedsearch.codeplex.com/>.

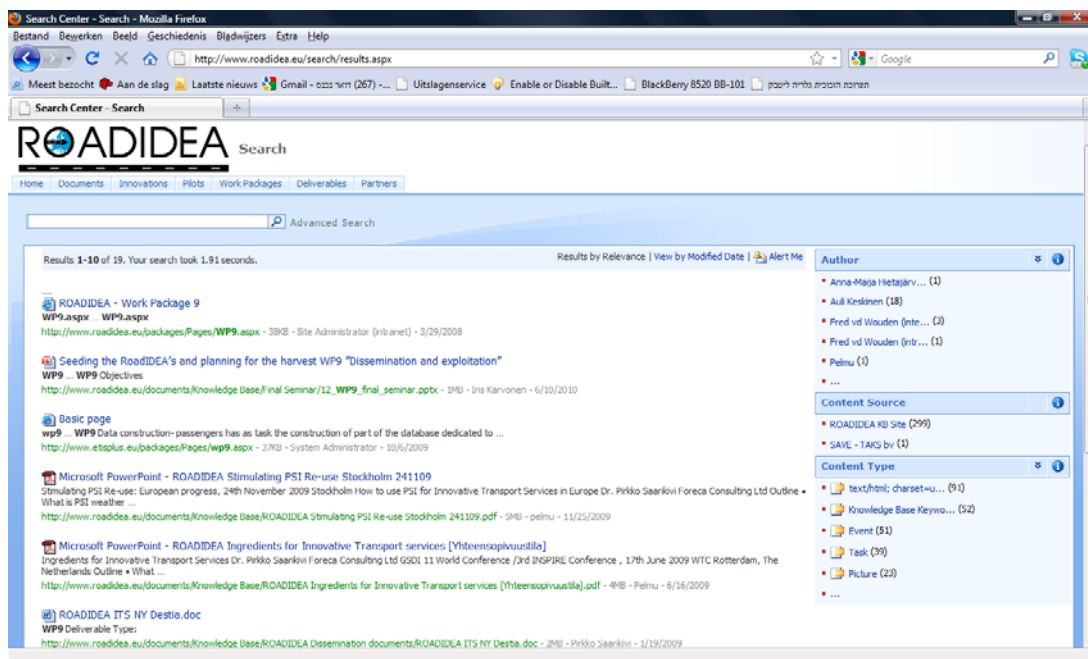


Figure 36: Faceted search results page

The facets are implemented using a SharePoint API and are stored within a native SharePoint METADATA store. The solution demonstrates the following key features:

- Grouping search results by facet;
- Displaying a total number of hits per facet value;
- Refining search results by facet value;
- Update of the facet menu based on refined search criteria;
- Displaying of the search criteria in Bread Crumbs;
- Ability to exclude the chosen facet from the search criteria;
- Flexibility of the Faceted Search configuration and its consistency with MOSS administration.

### 5.3.2 RadEditor for SharePoint

The basic WSS Editor that facilitates adding content to web pages has some limitations and lack in user friendly handling, especially when working with more illustrated content including pictures and links. To make editing content and custom pages more user friendly, the RAD Editor web-part has been added to the ROADIDEA site.

In 2004 Microsoft first joined forces with Telerik to provide Telerik RadEditor as a free alternative to the default HTML placeholder in MCMS 2002. The cross-browser compatibility and usability of the product led to its quick adoption, and is currently implemented by hundreds of organizations worldwide. With the release of Microsoft Office SharePoint 2010 Telerik is committed to ensure enhancing the SharePoint platform by seamlessly plugging and deploying RadEditor for ASP.NET AJAX to replace the default HTML editor.

The Telerik rich text Editor comes with a custom wrapper that can be immediately plugged in any SharePoint project. Whether you need a mere Textbox with Google-like spellchecker, or a Word-like content authoring environment, the result is the same: clean XHTML output, fast rendering, widest cross-browser support, and more features.

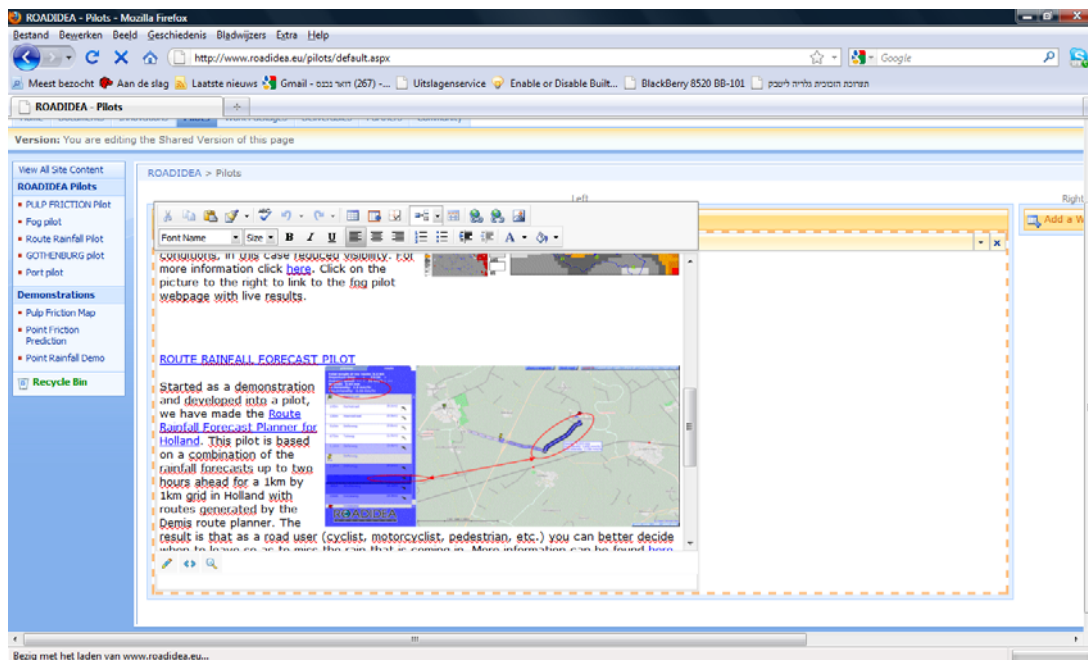


Figure 37: Working with the RadEditor

Furthermore, Telerik brings forth important accessibility enhancements in ASP.NET AJAX editor, which enable better management and content sharing. Built with ease-of-use in

mind, RadEditor is a flexible and adaptable technology chosen and successfully implemented in new accessible SharePoint-based websites. Further information can be found on: <http://www.telerik.com/products/SharePoint.aspx>.

### 5.3.3 Forms Based Authentication

As an extension to the user management and authentication, Forms Based Authentication was used to enhance the available features. Forms Based Authentication (FBA) is a way to provide your own data store to authenticate users against using a web form as the input method. Basically it functions as a dedicated login method. Authentication of users can be used by SQL Server, XML, Windows Live IDs and more. This way a distinction can be made between user rights on a read, write, contribute and design (administrative) level. Also user management in groups can be administered more conveniently, usually grouping users by company. For further information on FBA and links:

<http://wiki.threewill.com/display/enterprise/Forms+Based+Authentication+and+SharePoint>

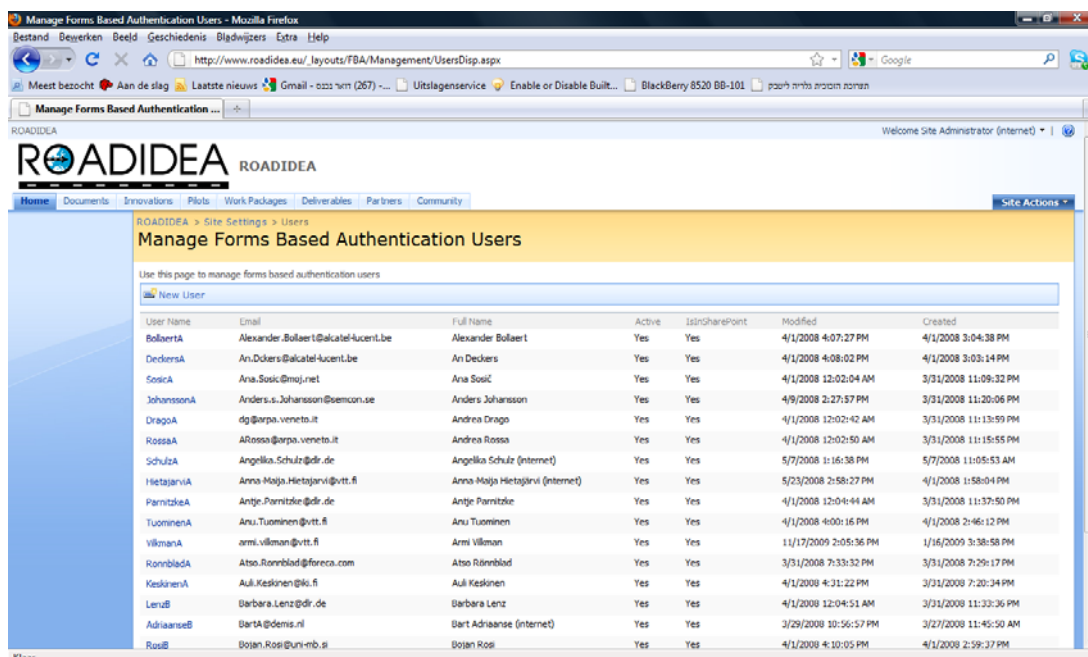


Figure 38: Forms Based Authentication user management

### 5.3.4 CKS Bamboo World Clock and Weather web part

To enhance the presentation of the site and draw focus to specific parts of a page, some dynamic pictures and other web parts have been added. Some enhancements will be described in section 4.1, such as the Tag Cloud which functions as a dynamic presentation of a list. To draw specific attention to upcoming events, the CKS Bamboo World Clock and Weather web part has been incorporated on various parts of the site. This web part allows the presentation of the current time and weather on a specific location, which has been used to draw attention to the next upcoming meetings or ROADIDEA events.

The CKS World Clock and Weather web part allows users to display local time and weather for selected major cities from around the globe. Many of the weather and clock display settings are configurable. The weather information is fetched from the MSN Weather service at <http://weather.msn.com>. The web part can be installed by running the setup routine.

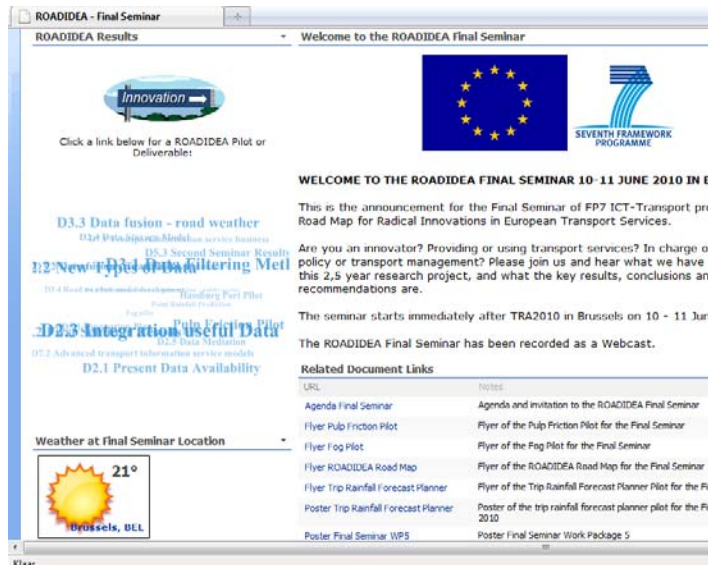


Figure 39: CKS Weather web-part applied to Final Seminar location

### 5.3.5 Tag Cloud

Although not a web-part in itself, the 'tag cloud' based on Adobe flash technology is described here as a useful extension to the Sharepoint features. Since it is integrated in the Sharepoint site, rolling back the site will automatically result in a proper functioning of the tag cloud, as will be described in the next chapter.

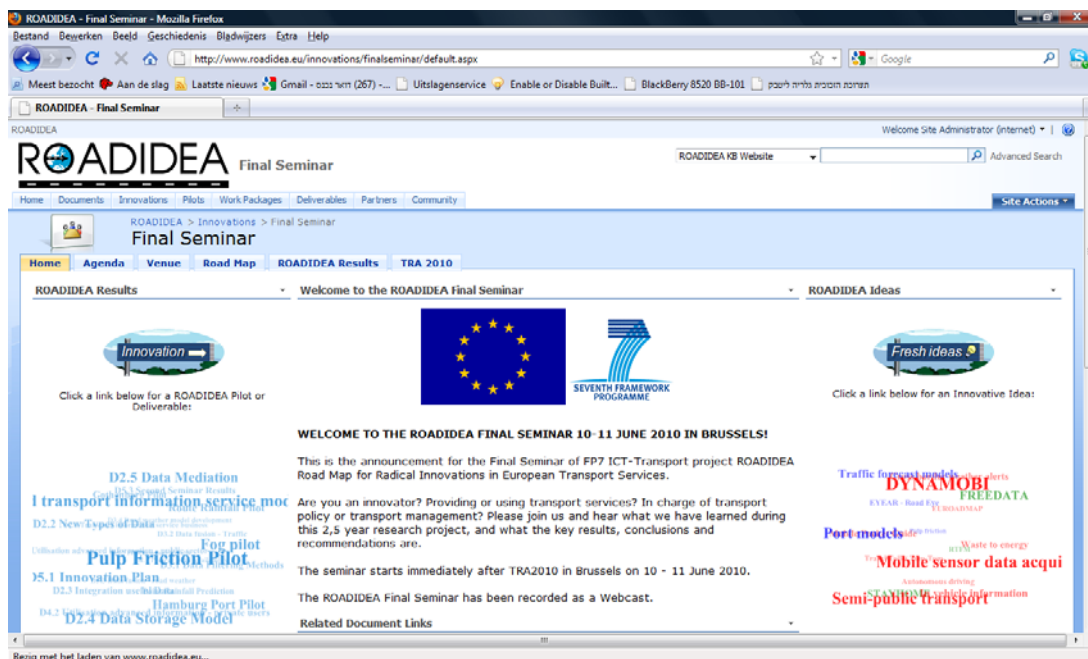


Figure 40: Final Seminar site featuring a result (left) and ideas tag cloud (right)

The presentation of listed items such as links or documents can give a site a fairly dull and repetitive appearance. To make the ROADIDEA site more varied and appealing to the general public, the tag cloud web part was included. A tag cloud is dynamic presentation of a list, the items in the list automatically being circulated when the list is visible on the site. When hovering over an item in the list, this item will highlight and by clicking

the item a link is activated. The tag cloud can contain any collection of links, for instance a collection of links to external projects or a collection of relevant documents / deliverables. The figure below shows two examples of the tag cloud implementation.

A summary of the features of the XML Tag Cloud:

- It is completely XML driven, so any website, blog, social network can use it;
- The speed of rotation is adjustable;
- The font colour is adjustable;
- The font face is adjustable;
- The mouse-over colour is adjustable;
- Images can be added over the cloud tags;
- The items can link to any URL;
- The size of the cloud is completely adjustable.

For more information: <http://www.artviper.net/website-design/xml-flash-tag-cloud.php>.

### **5.4 Restoring the SharePoint site**

The ROADIDEA website DVD that was provided contains a full back up of the latest version of the ROADIDEA site (August 2010). Restoring the ROADIDEA SharePoint site requires the installation of the WSS 3.0 but the steps taken can be different depending on the operating system you are using and the server environment (stand alone or single server installation), so the description for rolling back the site will be given in general terms, where variations between Operating systems may be expected.

To be able to restore the ROADIDEA site on your own system, basically the following steps have to be performed:

- Install Windows SharePoint Services (version 3.0). The installation is being described in Appendix A (stand alone) and B (single server). Since the ROADIDEA has been successfully running on a single server system, we will not go into detail on multiple server installation;
- Install the additional web parts that were described in section 4.3. The following links contain references to the relevant website, where there should be a description of how to install the web part:
  - Faceted search download: <http://facetedsearch.codeplex.com/releases/view/11723>
  - The RAD editor can be downloaded from: <http://www.telerik.com/download.aspx>;
  - Forms Based Authentication: <http://fba.codeplex.com/>;
  - For the CSK Bamboo world clock and weather web part download: <http://cks.codeplex.com/releases/view/7649>.
- Roll back the site from DVD selecting the corresponding option in the administrative part of SharePoint. This DVD will be made available at the end of the project;
- For additional support, please contact: [support@demis.nl](mailto:support@demis.nl).

### **5.5 Implementation of GIS techniques**

Within the innovations site of the ROADIDEA, a presentation has been made of the ongoing developments and results of the pilots. The general description of the pilots was presented in section 3.4 in the public part of the ROADIDEA website. From the ROADIDEA website there are multiple links to the actual implementation of pilots on dedicated websites. In this section the (online GIS) techniques will be described that were used to realize these pilot presentations.

### 5.5.1 Pulp friction Pilot

The "Pulp Friction" Model is a practical implementation of modelling road surface friction. The pilot produces live predictions up to 2 hours ahead of road slipperiness in Finland. The site uses Google maps as a background map, displaying location based weather conditions in the form of road warning icons. The live data is acquired from Vaisala optical sensor DSC111 measuring, with additional measurements of the thickness of ice/snow/water on the surface. This live data is within the Pulp Friction Model to determine the friction value and surface conditions. When moving over a specific location on the map, the detailed information is displayed in a separate table as shown in the figure below (taken from: <http://pilot.roadidea.eu/friction/>).

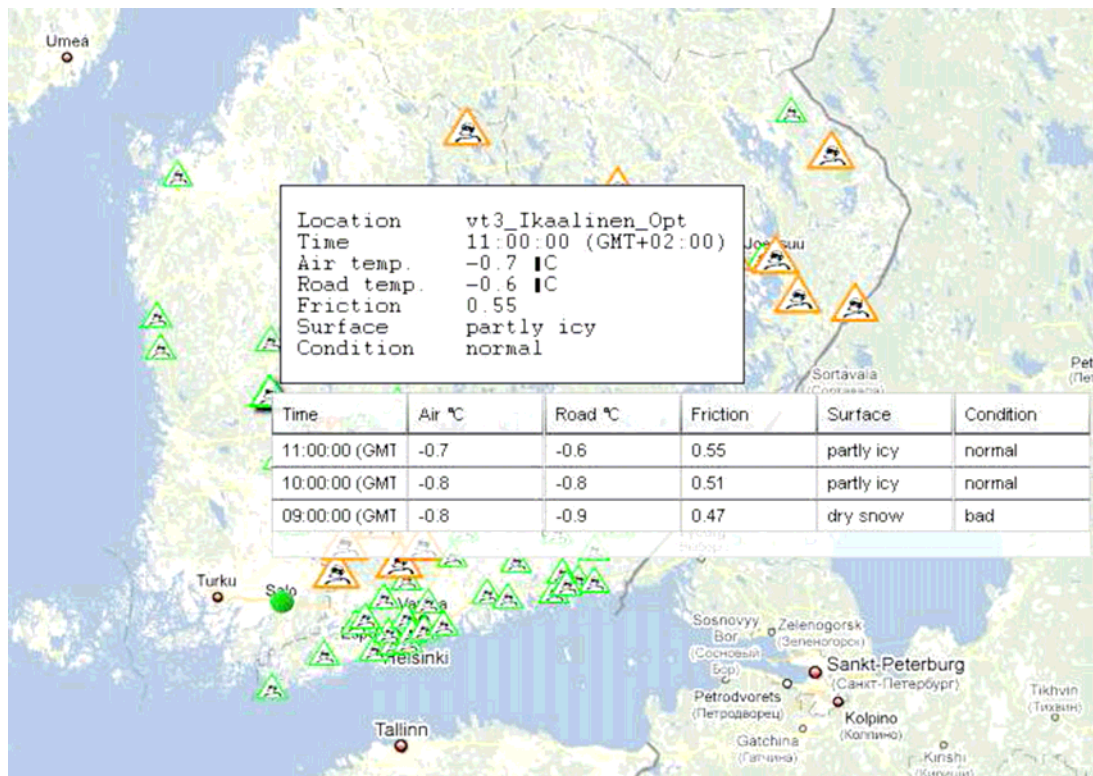


Figure 41: Pulp Friction implementation

### 5.5.2 Demis Web Map Server

The Demis Web Map Server (WMS) protocol defines a simple interface for web based mapping applications. The WMS protocol is an OpenGIS protocol and is based on simple query syntax for posting a request for the desired layers and zoom window to the server, which returns a map as a standard picture (GIF, PNG or other format). The WMS offers basic GIS map functionality such as zooming in and out, panning, showing the legend and manipulating map layers. The Demis WMS has been used in a few pilot projects in ROADIDEA, such as the Point Friction Demonstration described below and it has formed the basis for the Internetter tool as described in the next section.

The Demis WMS server offers some unique features:

- Optimized for performance, outruns most competitive products;
- Supports vector based GIS layers, imported from common GIS formats;
- Supports grid based GIS layers, including interpolation, contouring, relief shading;

- Support for image based GIS layers, including ECW and MrSID format images;
- Support for tiling, allowing huge data sets to be rendered efficiently;
- Plug-in interface, allows the programming of custom graphics on top of any map;
- Variety of output formats, GIF, PNG, BMP, JPEG, SWF;
- Specific support for developing clients using Macromedia Flash;
- Comes bundled with a huge 1:1,000,000 scale world map data set compiled from various sources.

### 5.5.3 Network editing tool InterNetter

From the beginning of the project, when the pilots were not yet in a state of sufficient presentation, two demonstration projects were developed by Demis to give an idea of what a pilot project might look like. For both these projects the use of GIS techniques was introduced: the route rainfall forecast planner and the point rainfall prediction demonstration. The route rainfall forecast planner specifically uses an on-line GIS editing tool called the InterNetter, which will be described here. The point rainfall demonstration using a Geo-location API will be discussed in the next section.

The route rainfall forecast planner started out as a demonstration project, but its usefulness and applicability proved to be a solid basis for turning this into a ROADIDEA pilot. The route rainfall forecast planner is developed as a pre-trip route planner with rainfall forecast for road users most exposed to weather, such as bicyclists, pedestrians and motor cyclists. This is based on a combination of the rainfall forecasts up to two hours ahead for a 1km by 1km grid in Holland with routes generated by the Demis route planner. The result is that as a road user (cyclist, motorcyclist, pedestrian, etc.) you can better decide when to leave so as to miss the rain that is coming in. The rainfall forecasts have kindly been made available by the KNMI. To see the forecasts look at the Buienradar.nl web site. The Dutch road network data come from the OpenStreetMap project (provided by AND).

The route rainfall forecast planner consists of the next key elements:

- Free radar rainfall forecast data from Royal Dutch Weather Service KNMI;
- A proven on-line trip planning system;
- Free road network data [www.OpenStreetMap.Org](http://www.OpenStreetMap.Org);
- On-line GIS tool InterNetter for continuous rider input to enhance this.

The online GIS tool called the InterNetter has been under continuous development by Demis BV since 2003 to allow data to be entered and edited over the web as a key part of the data collection stage of the first Dutch Bicycle Trip planner for South Holland and subsequently for the Reorient EU Framework 6 project ([www.reorient.org.uk](http://www.reorient.org.uk)) on railways in the EU. This has subsequently been extended to allow the EU Framework 6 WorldNet project ([www.worldnet.eu](http://www.worldnet.eu)) to secure wide ranging input of freight movement data and requires an internet browser with Flash at the user end. Editing of more than simply the vectors is supported; additional attribute information can also be added, as well as link and other aspects of the network parts of the maps.

InterNetter has been highly successful in crowd sourced data collection for the Dutch bicyclist union. They have mobilised hundreds of volunteers, who have already exceeded 4 million edits in operational use to prepare a high quality bicycle route planner for the Netherlands. To show how the Online-GIS network editor can help user groups to create their own network data we have given this network public access

(<http://rain.roadidea.eu/route/editor.aspx>, enter as username test and as password test). For more information on the background, the ROADIDEA slide show on this topic is available for download. Also participation in a survey on the need for rainfall prediction for online route planners is open for site visitors. For more information on this pilot: <http://www.roadidea.eu/pilots/pages/pilot5.aspx>

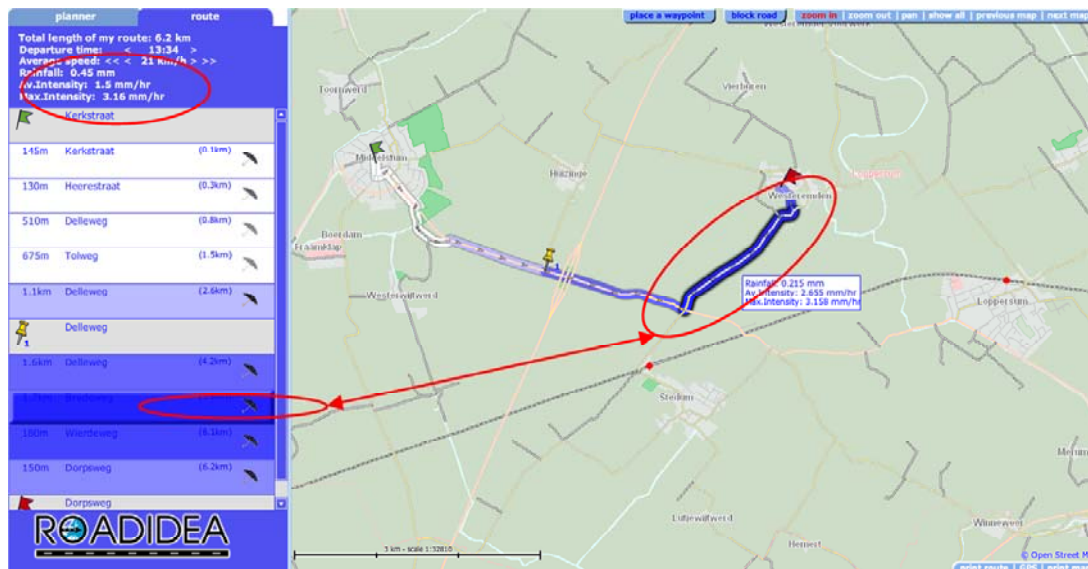


Figure 42: Route rainfall prediction planner based on the InterNetter technology

#### 5.5.4 Geo-location API and Google Gears

The ROADIDEA demonstration project Point Rainfall Prediction Demonstration shows how ROADIDEA became location aware. For this we use the recently published Geo-location API by the World Wide Web Consortium (W3C).

The W3C Geo-location API is an effort by the W3C to standardize an interface to retrieve the geographical location information for a client-side device. It defines a set of objects, ECMAScript standard compliant, that executing in the client application give the client's device location through the consulting of location information servers, which are transparent for the API. The most common sources of location information are IP address, Wi-Fi and Bluetooth MAC address, RFID, Wi-Fi connection location, or device GPS and GSM/CDMA cell IDs. The location is returned with a given accuracy depending on the best location information source available.

Web pages can use the Geo-location API in two ways: directly, if the web browser implements it (as is the case with Mozilla Firefox 3.5 and the latest version of Google Chrome); or through Google Gears. In the latter case, the client browser must have the (Google) Gears plug-in installed, and the web page must initialize Gears with HTML coding. Google Gears provides Geo-location support for Internet Explorer 7.0+ (as Gears plugin), and Google Chrome (which implements Gears natively). It also supports geolocation on mobile devices as a plugin for the Android Browser (pre version 2.0) and Opera Mobile for Windows Mobile.

The Point Rainfall Prediction for Holland demonstration is accessible through a device with an internet browser that supports the Geolocation API, such as Windows mobile phones, a PC or laptop. Alternatively Google gears needs to be installed. Note that only

rainfall prediction in Holland is provided; outside of Holland only the location and the accuracy is provided to the user.

The Point Rainfall Prediction Demo can be used through devices such as mobile phones, PDAs, laptops and PCs. The location information available from the device is used to report the position and accuracy and get the point rainfall forecast from KNMI data. Location information is obtained through IP address / Wi-Fi address / Bluetooth MAC address, RFID, Wi-Fi connection location, or device GPS or GSM/CDMA cell IDs.

For more information: <http://www.roadidea.eu/pilots/pages/pilot6.aspx>

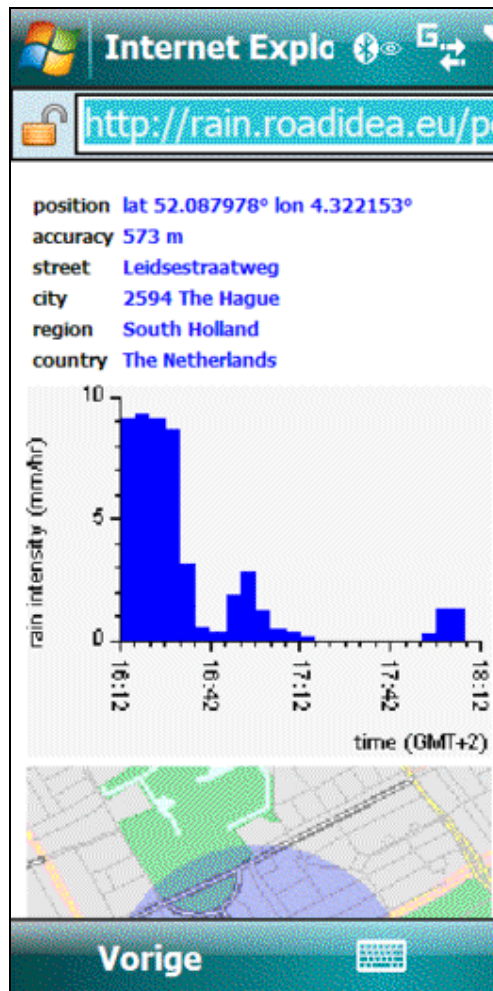


Figure 43: Point Rainfall Prediction on Mobile Phone

The Point Friction Demonstration as shown in the picture below uses a Geo-location from the user who requests the information and determines the closest measuring point that is sent back as Pulp Friction result information. Thus the user can get an estimate for road weather conditions for his current location promptly. The below figure shows the users' location (blue), closest measuring point (red) and other measuring points (green).

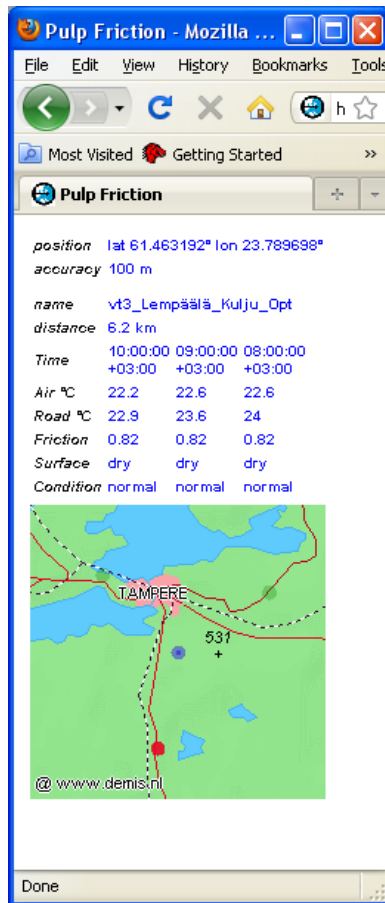


Figure 44: Sample of the Point Friction Demonstration

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## APPENDIX A. Install Windows SharePoint Services 3.0

When installing on a stand-alone computer the following issues have to be taken into account:

- Hardware and software requirements;
- Configure the server as a Web server;
- Install and configure Windows SharePoint Services 3.0 with Windows Internal Database;
- Post-installation steps.


This information applies to Microsoft Windows Server 2003. If you are in a Windows Server® 2008 environment, the steps to install and configure Internet Information Services (IIS), the Microsoft .NET Framework version 3.0, and Windows SharePoint Services 3.0 are different. For more information, see *Install a stand-alone server on Windows Server 2008 (Windows SharePoint Services)*.

### Important:

This appendix discusses how to install Windows SharePoint Services 3.0 on a single computer as a stand-alone installation. It does not cover installing Windows SharePoint Services 3.0 in a farm environment, upgrading from previous releases of Windows SharePoint Services 3.0, or how to upgrade from SharePoint Portal Server 2003. For information about how to do this, see the following articles:

- Deploy in a simple server farm (Windows SharePoint Services):  
<http://go.microsoft.com/fwlink/?LinkID=107358>;
- Upgrading to Windows SharePoint Services 3.0:  
<http://go.microsoft.com/fwlink/?LinkID=144289>.

You can quickly publish a SharePoint site by deploying Windows SharePoint Services 3.0 on a single server computer. A stand-alone configuration is useful if you want to evaluate Windows SharePoint Services 3.0 features and capabilities, such as collaboration, document management, and search. A stand-alone configuration is also useful if you are deploying a small number of Web sites and you want to minimize administrative overhead. When you deploy Windows SharePoint Services 3.0 on a single server using the default settings, the Setup program automatically installs the Windows internal Database uses it to create the configuration database and content database for your SharePoint sites. Windows Internal Database uses SQL Server technology as a relational data store for Windows roles and features only, such as Windows SharePoint Services, Active Directory Rights Management Services, UDDI Services, Windows Server Update Services, and Windows System Resources Manager. In addition, Setup installs the SharePoint Central Administration Web site and creates your first SharePoint site collection and site.

 Note: there is no direct upgrade from a stand-alone installation to a farm installation.

### ***Hardware and software requirements***

Before you install and configure Windows SharePoint Services 3.0, be sure that your servers have the required hardware and software. For more information about these requirements, see *Determine hardware and software requirements (Windows SharePoint Services)*.

## Configure the server as a Web server

Before you install and configure Windows SharePoint Services 3.0, you must install and configure the required software. This includes installing and configuring Internet Information Services (IIS) so your computer acts as a Web server, installing the Microsoft .NET Framework version 3.0, and enabling ASP.NET 2.0.

### Install and configure IIS

Internet Information Services (IIS) is not installed or enabled by default in the Microsoft Windows Server 2003 operating system. To make your server a Web server, you must install and enable IIS, and you must ensure that IIS is running in IIS 6.0 worker process isolation mode:

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| 1.  | Click <b>Start</b> , point to <b>All Programs</b> , point to <b>Administrative Tools</b> , and then click <b>Configure Your Server Wizard</b> ;                |
| 2.  | On the Welcome to the Configure Your Server Wizard page, click <b>Next</b> ;   |
| 3.  | On the Preliminary Steps page, click <b>Next</b> ;   |
| 4.  | On the Server Role page, click <b>Application server (IIS, ASP.NET)</b> , and then click <b>Next</b> ;   |
| 5.  | On the Application Server Options page, click <b>Next</b> ;  |
| 6.  | On the Summary of Selections page, click <b>Next</b> ;   |
| 7.  | Click <b>Finish</b> ;  |
| 8.  | Click <b>Start</b> , point to <b>All Programs</b> , point to <b>Administrative Tools</b> , and then click <b>Internet Information Services (IIS) Manager</b> ; |
| 9.  | In the IIS Manager tree, click the plus sign (+) next to the server name, right-click the <b>Web Sites</b> folder, and then click <b>Properties</b> ;          |
| 10. | In the <b>Web Sites Properties</b> dialog box, click the <b>Service</b> tab;   |
| 11. | In the <b>Isolation mode</b> section, clear the <b>Run WWW service in IIS 5.0 isolation mode</b> check box, and then click <b>OK</b> .                         |
- Note:
- The **Run WWW in IIS 5.0 isolation mode** check box is only selected if you have upgraded to IIS 6.0 on Windows Server 2003 from IIS 5.0 on Microsoft Windows 2000. New installations of IIS 6.0 use IIS 6.0 worker process isolation mode by default.

### Install the Microsoft .NET Framework version 3.0

Go to the Microsoft Download Centre Web site (<http://go.microsoft.com/fwlink/?LinkID=72322&clcid=0x409>), and on the Microsoft .NET Framework 3.0 Redistributable Package page, follow the instructions for downloading and installing the .NET Framework version 3.0. There are separate downloads for x86-based computers and x64-based computers. Be sure to download and install the appropriate version for your computer. The .NET Framework version 3.0 download contains the Windows Workflow Foundation technology, which is required by workflow features.

### Enable ASP.NET 2.0

ASP.NET 2.0 is required for proper functioning of Web content, the Central Administration Web Site, and other features and functions of Windows SharePoint Services 3.0.

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| 1. | Click <b>Start</b> , point to <b>All Programs</b> , point to <b>Administrative Tools</b> , and then click <b>Internet Information Services (IIS) Manager</b> ; |
| 2. | In the Internet Information Services tree, click the plus sign (+) next to the server name, and then click the <b>Web Service Extensions</b> folder;           |
| 3. | In the details pane, right-click <b>ASP.NET v2.0.50727</b> , and then click <b>Allow</b> .   |

## Install and configure WSS 3.0 with Windows Internal Database

When you install Windows SharePoint Services 3.0 on a single server, run the Setup program using the **Basic** option. This option uses the Setup program's default parameters to install Windows SharePoint Services 3.0 and Windows Internal Database. Windows Internal Database uses SQL Server technology as a relational data store for Windows roles and features only, such as Windows SharePoint Services, Active Directory Rights Management Services, UDDI Services, Windows Server Update Services, and Windows System Resources Manager.

### Notes:

If you uninstall Windows SharePoint Services 3.0, and then later install Windows SharePoint Services 3.0 on the same computer, the Setup program could fail when creating the configuration database causing the entire installation process to fail. You can prevent this failure by either deleting all the existing Windows SharePoint Services 3.0 databases on the computer or by creating a new configuration database. You can create a new configuration database by running the following command:

```
psconfig -cmd configdb -create -database <uniquename>
```

## Run Setup

1. On the **Read the Microsoft Software License Terms** page, review the terms, select the **accept the terms of this agreement** check box, and then click **Continue**;
2. On the **Choose the installation you want** page, click **Basic** to install to the default location. To install to a different location, click **Advanced**, and then on the **Data Location** tab, specify the location you want to install to and finish the installation;
3. When Setup finishes, a dialog box prompts you to complete the configuration of your server. Be sure that the **Run the SharePoint Products and Technologies Configuration Wizard now** check box is selected;
4. Click **Close** to start the configuration wizard.

## Run SharePoint Products and Technologies Configuration Wizard

1. On the **Welcome to SharePoint Products and Technologies** page, click **Next**.
2. In the dialog box that notifies you that some services might need to be restarted or reset during configuration, click **Yes**.
3. On the **Configuration Successful** page, click **Finish**. Your new SharePoint site opens.

### • Note

If you are prompted for your user name and password, you might need to add the SharePoint site to the list of trusted sites and configure user authentication settings in Internet Explorer. Instructions for configuring these settings are provided in the following procedure.

### • Note

If you see a proxy server error message, you might need to configure your proxy server settings so that local addresses bypass the proxy server. Instructions for configuring proxy server settings are provided later in this section.

## Add the SharePoint site to the list of trusted sites

1. In Internet Explorer, on the **Tools** menu, click **Internet Options**;
2. On the **Security** tab, in the **Select a Web content zone to specify its security**

- settings box, click **Trusted Sites**, and then click **Sites**;
3. Clear the **Require server verification (https:) for all sites in this zone** check box;
  4. In the **Add this Web site to the zone** box, type the URL to your site, and then click **Add**;
  5. Click **Close** to close the **Trusted Sites** dialog box;
  6. Click **OK** to close the **Internet Options** dialog box.

If you are using a proxy server in your organization, use the following steps to configure Internet Explorer to bypass the proxy server for local addresses.

### Configure proxy server settings to bypass the proxy server

1. In Internet Explorer, on the **Tools** menu, click **Internet Options**;
2. On the **Connections** tab, in the **Local Area Network (LAN) settings** area, click **LAN Settings**;
3. In the **Automatic configuration** section, clear the **Automatically detect settings** check box;
4. In the **Proxy Server** section, select the **Use a proxy server for your LAN** check box;
5. Type the address of the proxy server in the **Address** box;
6. Type the port number of the proxy server in the **Port** box;
7. Select the **Bypass proxy server for local addresses** check box;
8. Click **OK** to close the **Local Area Network (LAN) Settings** dialog box;
9. Click **OK** to close the **Internet Options** dialog box.

### Perform administrator tasks by using the Central Administration site

1. Click **Start**, point to **All Programs**, point to **Administrator Tools**, and then click **SharePoint 3.0 Central Administration**.
2. On the **Central Administration** home page, under **Administrator Tasks**, click the task you want to perform.
3. On the **Administrator Tasks** page, next to **Action**, click the task.

From this point on, the roll back of the ROADIDEA site can be performed using the content on the delivered DVD.