D5.1 Plan for Innovation Procedures in ROADIDEA

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Executive Summary

The objectives of the WP5 are to create powerful processes for innovation activities in the project, and to create innovations on knowledge-intensive products and services for transport users on complex issues such as mobile and user-oriented information products and services, telecommunications services, user-interfaces, logistic solutions, software development and networking options.

Innovation processes are mainly based on futures research methodologies Futures Workshop and Charrette as explained by the WFUNA (World Federation of the United Nations Associations) Millennium Project. The processes will be continuous based on digital communication methods, with two major innovation seminars, which both include at least two-day sessions. The first innovation seminar is held on 12-13 May 2008 in Prague and the second innovation seminar is held in April 2009 in Stockholm. The Charrette method is an interactive brainstorming exercise where organisations create ideas for the future alternating in plenary sessions and focus groups. The Charrette of ROADIDEA consists of two plenary sessions (innovation seminars) and one WP work phase in between (running the pilots) and second WP work phase afterwards.

Preparations for the first innovation seminar included a participant survey on their present knowledge of innovation activities in January 2008. Since the results of the survey indicated that prior knowledge on brainstorming is not on a very high-level suitable study material was needed in advance. Thus, a collection of reading material is prepared. The innovation areas, approaches and challenges need more reflective discourse among WPs. The Technical Committee is used as the platform to clarify the codes of conduct for creating innovations for piloting. Here the Three Preliminary Ideas described in the DoW were also taken under consideration. All this material is sent to participants in advance in April 2008.

Further preparations of the seminars consisted of defining working methods, group work, and different tasks for participants. There will be two major grouping methods namely Simple Random Sampling and Self-Organised Selection. The Coordinator, the Technical Coordinator and the Innovation Manager worked as the pre-Charrette team planning the preparatory actions. They also form the moderators' team guiding the work in the seminar and monitoring the success factors during the seminar. To promote the innovative thinking a special slide show is running all through the workdays.

The best ideas are sought for during the seminars using first individual idea creation (there may be ideas created already before the seminar by participants in their own professional environment) and then in group work using various methods: flip papers on the wall, post-it adhesives, Socratic Walking seminar, Pub seminar, in groups, subgroups and plenary sessions. Work will be assisted by group rapporteurs who are selected by the groups for 1-2 sessions alternating. The evaluating of the ideas will be done using "heart stickers" and the new "basketing" procedure, where ideas are given labels according to their character. An important feature is the "development of idea" process that is applied through the seminar: around the idea relevant information on its operational environment is accumulated in a continuous manner by studying questions such as added-value, actors and collaborators, structures, obstacles and drivers of the ideas. To ensure the full exploitation during the project life cycle of the ideas created, a 2-3 person team (IDEA Team) is appointed to take care of each idea.

Table of Contents

1. PURPOSE AND BACKGROUND

The purpose of the WP5 is to create powerful processes for innovation activities in the project, and to create innovations on knowledge-intensive products and services for transport users on complex issues such as mobile and user-oriented information products and services, telecommunications services, user-interfaces, logistic solutions, software development and networking options.

The WP5 Innovation procedures and management implements the innovation procedures in a systematic way in two major cycles and continuously in between. The main goal is to produce radical ideas to develop safer, more secure, efficient and environment-friendly ICT-based transport solutions and services.

Innovation processes are mainly based on futures research methodologies Futures Workshop and Charrette as explained by the WFUNA Millennium Project (2003). The processes will be continuous based on digital communication methods, with two major innovation seminars, which both include at least two-day sessions. Innovation Seminar Plan and Advance Reading Material are delivered before the first seminar.

1.1 Complexity of the Present World

We are living in a complex world – the ubiquitous information and communications technology and globalisation of the economies demand evermore increasing collaboration of peoples and nations. Today we face global problems that need new solutions through interdisciplinary approach – global warming and climate change, ever increasing energy demand, energy exploding transport activities of carrying people and cargo, just to mention a few. To be able to find new solutions we need to gather various international expertises to come together and create broad-based innovations.

Many real-world organisational problems appear intractable and are difficult to resolve. Part of the difficulty arises when only single causes are sought, when such problems arise from the interaction of multiple, underlying, and interrelated conditions (Mitleton-Kelly 2007). Making sense in an organisation is part of understanding the full context in which decisions are made. It is important to analyse a problem space to identify the multiple underlying and interacting conditions, and understand why mono-causal explanations are inadequate when facing volatile, uncertain, complex and ambiguous problems in organisations. (More on complexity, see Gell-Mann 1995, Keskinen & Aaltonen & Mitleton-Kelly 2003).

1.2 Innovation

"The process of innovation is a rhythm of search and selection, exploration and synthesis, cycles of divergent thinking followed by convergence." (Innovation 2007).

Divergence, or creative synthesis, is the interlocking of previously unrelated skills, or matrices of thought. The creation of such intellectual ferment is important to innovation - the more options offered, the more likely that an out-of-the-box perspective will be available for selection. Just hearing a very different perspective challenges the mindset of others sufficiently that they will search beyond what initially appears to be an obvious

solution. This is the reason why intellectually heterogeneous cross-functional teams are more innovative than homogenous functional ones.

As soon as a sufficient choice of innovative ideas has been generated, a solution – convergence upon acceptable action – needs to be defined and agreed upon. In addition to explicit knowledge, three types of tacit knowledge – overlapping specific, collective, and guiding - need also to be taken into consideration and managed. (Innovation 2007).

1.3 Participants' Codes of Conduct

In the process of free brainstorming the basic codes of conduct for participants are listed below. These guidelines are then elaborated again in the beginning of the seminar.

- Remember there is no right or wrong!
- Don't be practical!
- Criticising others' ideas is not allowed, taking advantage of them is!
- Don't avoid ambiguity!
- Feel free to err!
- Think outside the box!
- Create "we" spirit!
- Insist that the ideas are "ours"!
- Be honest in your comments and encourage others to debate!
- Remember that you represent only yourself!

2. APPLICATION OF CHARRETTE AND FUTURES WORKSHOP METHODS

Innovations in ROADIDEA will be created using well-tested brainstorming methods such as Charrette and Futures Workshop described by the WFUNA Millennium Project and in Heino Apel's article (see chapter 3: Methodologies) covering both seminars, the time in-between for running pilots and the processing of the ideas for the Road Map after the seminars. Charrette is an intensive face-to-face process carefully designed to bring people from various disciplines and expertise to create new solutions to problems within a short period of time. The first round (the innovation seminar) will produce the ideas to the focus groups that will take on the ideas and develop their work accordingly. The second round will further develop the ideas under piloting and create new ones for further consideration.

Before the first innovation seminar, participants are expected to orientate themselves to the methodology and towards a positive, creative stance towards the tasks at hand. The results of the first seminar – the pool of different ideas (ranging between realistic ready-to-be-used and most outrageously utopian) – are further developed in focus groups as decided. In between the innovation seminars the ideas are also freely commented and further developed through the web-site. Actually, the second innovation seminar will collect the feedback from the focus group and further develop the ideas as well as throwing in new ones. In ROADIDEA, focus groups are primarily WPs but may be enhanced if seen feasible.

Thus, the ROADIDEA Charrette consists of 5 phases as follows:

Phase 1: Pre-Charrette Plan, preparation for the innovation seminars
Phase 2: 1st Innovation Seminar on 12-13 May 2008, Prague
Phase 3: Work in WPs (focus groups): Further Development of Ideas, Piloting
Phase 4: 2nd Innovation Seminar in April 2009, Stockholm
Phase 5: Work in WPs (focus groups): Further Tests in Pilots

In this deliverable D5.1 the plenary work of the phase 2 and the focus group work of phase 3 are described under the title: 2.3. First Innovation seminar and likewise, the phases 4 and 5 are described under the title: 2.4 Second Innovation seminar. These include basic information for reporting of work success in deliverables D5.2 and D5.3.

Futures Workshop method is used in the seminars for free brainstorming. It is necessary to guide the brainstorming by using rules and codes of conduct that lead conscious effort to create ideas for products and services. In theory, the two-to-three-day futures creation seminar is facilitated by 1-2 professionals and usually follows the following steps: preparation, imagination and creation process, options for realisation, task allocation for moving from intention to action. The main features of the workshop include: free collaboration of various experts from different fields, anonymous criticising process, innovative creation of solutions, and defining concrete results and actions. However, the criticising process is left out since the aim is to create new fresh ideas and not to criticise existing ones. Some ideas have been taken onboard from a similar type of brainstorming method called Future Search, as mentioned in chapter 2.3.

To ensure the full exploitation of the ideas created, a 2-3 person team (IDEA Team) is appointed to each idea whose task is to "cherish" the idea, i.e. to take care of the idea's proper execution in the piloting processes and WPs during the project life cycle. The team members represent the corresponding WPs that work with the ideas. The team will act self-organisingly but will periodically discuss development with consortium members through the dedicated ROADIDEA web-site.

2.1 Pre-Charrette Plan and Background Knowledge Upgrade of Participants

To clarify the state-of-the-art of participants' present knowledge of innovation activities a survey was conducted in January 2008. The email survey consisted of 5 questions concerning the experience of the partners on brainstorming (see annex 1). Two thirds of the participants replied to the survey questions (67%).

Summarising the most important findings, it was found that:

- About half of the people have attended some form of brainstorming, session, most of them for half a day or one day, but the other half had very little or not at all experience on such sessions.
- Majority of the people find such sessions interesting and valuable.
- Majority of the people find their knowledge on brainstorming methods modest or even negligible and the overwhelming majority regarded that they need more information on brainstorming.

The survey gives good indication that there is a need for more knowledge on innovation and brainstorming methods, and that the innovation sessions shall be well planned and conducted to achieve good results. Thus, it is necessary to prepare reading material for

the participants to study in advance. The reading material is sent to the participants in April 2008. The material consists of the following documents:

List of the Advance Reading Material

1. D5.1 Plan for Innovation Procedures in ROADIDEA (i.e. this document) consisting of additional reading material in annex 4.
2. Apel, Heino (2004) *Future Workshop*, http://www.die-bonn.de/esprid/dokumente/doc-2004/apel04_02.pdf
3. INNOVATION (2007) *Innovation Process: Diversion and Conversion of Ideas. The Jazz of Innovation. 29 Obstacles To Innovation*. http://www.1000ventures.com/business_guide/im_knowledge_idea.html#IP
4. Hiltunen, Elina (2007) *Where Do Future-oriented People Find Weak Signals?* FFRC eBook 2/2007. Finland Futures Research Centre, Turku School of Economics. 40 s. http://www.tukkk.fi/tutu/julkaisut/e_julkaisut/Sources%20for%20weak%20signals-%20Hiltunen_2007-2_3.pdf
5. List of innovation fields and guidance to work as prepared by the Technical Committee (available in April 2008).

The pre-Charrette planning is conducted by a team of three: Pirkko Saarikivi (FORC, Coordinator, WP1 leader), Pekka Leviäkangas (VTT, Technical Coordinator, WP4 leader) and Auli Keskinen (FORC, Innovation Manager, WP5 leader). The team members will also act as moderators in the seminar. The innovation procedures are explained here as the phases 1 to 5 covering the whole Charrette model. Lulu Hyvätti (FORC, Financial Manager) will assist the team in practical organisation.

In the pre-Charrette planning several issues are to be resolved (see chapter 3.1 Charrette Method). Issues that refer to determining stakes of the planners, selecting stakeholders, reviewing the methodology, have already been decided by the Project Plan of ROADIDEA. The practical arrangements such as site, schedule, food and lodging are organised by the Coordinator and the Financial Manager together with the Innovation Manager. Other issues defined in the Charrette Method are:

Documenting and communicating results: The project plan described in this deliverable is public and published on the www.roadidea.eu website. It is also meant that the participants read it. Other deliverables are restricted to the use of the participants, but a public summary will also be produced. The documents of the innovation seminar include: description of the ideas produced, list and task of the IDEA team members, list of the WP which will be the "home" of a particular idea, the task allocation during the time period between the two seminars (approx. 10 months), the feed-back that is expected from the participants and the overall description of the seminar activities. Also the list of expertise division of the participants will be produced. In addition, all the Power Point presentations (see chapter 2.3 First Innovation Seminar), posters and photos of flip-papers are attached. Each idea is discussed through chats, blogs or wikis in intranet and further discussions are also encouraged through extranet.

Worksheets and other material: name tags, flip papers, permanent drawing pens, post-it adhesives, "heart" stickers for evaluation, baskets, tape and sketchbooks for documenting and discussion.

The moderators also have to take care of the broad-based knowledge pool to function in practice. In fulfilling this task the issues listed below were discussed and considered in

planning the seminar processes. These discussions have led to the process practices as presented in this deliverable of plan for innovation seminars.

Ensuring Broad-based Knowledge Pool

To ensure multidisciplinary teams to work efficiently, certain presuppositions must be fulfilled as presented in Glenn & Gordon 2003 and Futures Search Network 2007 (slight modifications are done by the WP5 leader). The participatory futures innovation process should ensure that it will:

1. Involve the shy nontalker;
2. Allow for innovation during the process;
3. Create one-way/two-way or group communication;
4. Allow time to reflect and save face if an individual's mind is changed;
5. Mix participants to break-up cliques;
6. Make people feel comfortable enough to express private thoughts in public;
7. Develop a sense of interdependency or community by sharing common ground;
8. Encourage assessment of secondary and tertiary consequences of actions from alternative futures;
9. Include all perspectives on an issue through people representing those perspectives;
10. Have decision makers from government, business, and other authorities interact with the people affected by their decisions;
11. Insist on clearly stated conclusions to prevent later misinterpretation;
12. Guarantee full-news media coverage;
13. Empower all participants equally in the process; and

In order to have success:

- Get the "whole system" in the room. Invite a significant cross-section of all parties with a stake in the outcome.
- Explore the "whole elephant" before seeking to fix any part. Get everyone talking about the same world. Think globally, act locally.
- Put common ground and future focus front and centre while treating problems and conflicts as information, not action items.
- Encourage self-management and responsibility for action by participants before, during, and after the futures study.
- Urge full attendance - Keep part-time participants to a minimum.
- Meet under healthy conditions - This means airy rooms with windows, healthy snacks and meals, adequate breaks.
- Work across three days (sleep twice) - People need "soak time" to take in everything that happens.
- Ask for voluntary public commitments to specific next steps before people leave.

2.2 The Innovation Procedures

It is suggested by the pre-Charrette team that as the first hypothesis on judging the innovated ideas in general two levels are concerned: one very high in the sky with all visionary ideas, and then the realistic on-the-ground level, on which best ideas for the pilots are chosen. For radical innovations both are needed.

The starting point is that the innovation phase must not be restricted beforehand in any way. After the seminar hopefully a pile of fantastic ideas has been invented, but perhaps

no data to create the service on the ideas. Next step will be to think how to get the data. In some cases it may be easy enough to try again on the second innovation seminar (See chapter 2.4 2nd Innovation Seminar).

Phase 1. Preparation for the First Innovation Seminar

The pre-Charrette Plan has given sufficient knowledge for go ahead with the first innovation seminar. The overall plan and the first seminar are also discussed by the Technical Committee (the WP leaders) beforehand in April 2008. The task allocation of partners is presented in annex 3. The preparations for the 1st seminar are presented in the following table 1.

Table 1: Preparations for the 1st Seminar

Actors	Tasks Before the Seminar
Coordinator and Financial Manager	Organise site, schedule, invitations, lodging, refreshments, fruits, maps for walking and pub seminars. Collect seminar tools: name tags, tape, flip papers, permanent drawing pens, post-it adhesives, "heart" stickers for evaluation, baskets, sketchbooks.
WP5 leader	Prepare innovation areas for participants (together with Technical Committee). Prepare seminar programme and execution plan and posters on important issues. Prepare seminar presentations (ppt) and seminar survey plan. Prepare guidance for participants, moderators, WP-leaders, IDEA teams, rapporteurs.
Participants	Study the material provided by WP5 leader. Study the material provided by the Technical Committee. Pack casual wear, comfortable clothes and walking shoes.

Practical Issues and Execution of the Seminar

On the spot, the expertise of different participants is listed in the first phase of the seminar. The list will be open to inspection of all participants. The list will be studied to find the coverage of expertise in the field. This will be used for further complementing of the ideas' background knowledge, if need arises. It will also be filled in at the second innovations seminar. The sketch of the table is presented in the table 2.

Table 2. Division of Expertise among the Participants - Sketch

Name	Main WP	Partici-pation		Expertise Areas										IDEA team
		innov-sem 1st	innov-sem 2nd	road traffic	road safety	rail road traffic	ICT & techno-logy	public admin	strategy planning logistics	futures & foresight	meteor-ology, road weather	com-merce, SME	other area	member
Auli Keskinen	WP5	X	X				x	X		X	x			
...														

The ideas (and the non-ideas) are property of the ROADIDEA project. This means that everything produced by the seminars is openly discussed by all participants along the way. This can be called an "idea-hyper-cycle", which is encouraged to continue all through the project. Note however, that the results of the seminar are to be shared by the participants and their companies and organisations only.

The **BASKET PROCESS** is conducted to classify the ideas along the way. The ideas will be given an illustrative name and are grouped into 4 baskets during the first day sessions ("basketing"). On the second day they are studied further and possibly grouped again as presented in the following table 3:

Table 3. Classifying Ideas to Baskets - Basketing

Basket	Naming	Contents
Ready-to-go Basket	Clear & Realisables	Ideas that are judged to be ready for implementation, or at least mature enough to be further developed by WPs.
Pub Basket	Radicals	Ideas that need further free brainstorming by various combinations of expertise, i.e. self-organising teams in a pub.
Wild Basket	Debatables	Ideas that cannot be seen as to be applied straight on or need more research: technology is not ready or facts are missing, debate is on, etc.
Waste Basket	Left-overs	Ideas that have been discarded during the sessions for whatever reason (possibly to be studied later), controversial ones.

In the last session of the innovation seminar the task allocation for the next 10 months (until the second innovation seminar) is made. This means that to each idea a 2-3 persons team is appointed to control the idea's implementation and further development. The ideas will have dedicated web-site areas where all relevant information on the life-cycle of the idea is saved by the IDEA team. The tasks of all seminar groups are presented in the following table 4.

Table 4: Seminar Groups and Their Tasks

Groups	Members	Number	Tasks
Moderators	Coordinator, WP4 leader (technical coordinator), WP5 leader (innovation manager) and financial manager	4	WP5 leader will lead the seminar. Financial manager will cover the practical actions and watch over time during the seminar. Moderators guide the group work by circulating among the groups and helping rapporteurs. They collect ideas, guide the idea development, evaluation and basketing. They document conflicts and disputes. They decide the grouping and timing, and solve any arising questions during the seminar. They ensure the successful outcome of the seminar during the work. (Note! They will also participate in actual brainstorming).
Rapporteurs	Each group selects a rapporteur within the group	1 per session per group, changing	Rapporteurs make notes of the ideas, and report the work of the group to the plenary and to the moderators. They guide the walking seminar and the pub seminar and document the subgroup members. They collaborate closely with the moderators.
Participants	All participants in the innovation seminar	ca. 30	Participants are divided in 4 groups in every session. They do the brainstorming, evaluation, naming and basketing. Each is asked to create 1-3 ideas to start with.
Innovation groups	Either randomly or self-organisingly selected participants	4 per session, changing	Brainstorming, evaluating, naming, basketing and reassessing of the ideas. Divided into subgroups for walking and pub seminars.
IDEA Teams	Persons appointed to each selected IDEA	2-3 per idea	IDEA team is appointed in the 4th session to each idea for taking care of the idea's life cycle together with WP leaders. (often IDEA team member = WP leader).

The groups will be organised in two principal ways: simple random sampling (SRS) and self-organised selection (SOS). Both methods have their pros and cons: SRS will ensure that different expertise will disperse among the groups simply but efficiently, whereas SOS is used when the ideas are discussed in more detail where the personal preferences and expertise come into play. The problem of SRS is the possible fear for unknown social contacts that can hinder free display of thoughts, whereas SOS may hinder interdisciplinarity to act in full force. Therefore, it is decided to use both methods alternating. Thus, in the first seminar group organising in sessions in various phases is done as follows in table 5.

Table 5. Grouping Methods in Sessions and Seminars

Session	Grouping
First session	Random grouping SRS
Second session	Self-organising SOS
Walking seminar	Session groups continue as such but shifts are possible
Pub seminar	Session groups continue as such but shifts are possible
Third session	Participants must choose between the groups of first and second sessions
Fourth session	Grouping is not necessary

Each group shall have a rapporteur to be chosen by the members of the group for each main session. The rapporteurs shall keep track on the ideas and place them in the correct basket (see table 3). The rapporteurs also lead the walking seminar and the pub seminar. The moderators (Saarikivi, Leviäkangas, Keskinen) circulate among the groups, facilitate the work and collect results of innovation. They are also responsible of monitoring the success factors presented in chapter 4. The WP5 leader is responsible for conducting guidance and surveys among the participants, and documenting the results.

The Three Preliminary Ideas

In order to ease the effective start of the innovation process and system development, the attendees of the first innovation seminar will be given three examples of future transport services. These will be crosschecked and evaluated by users and may be replaced by even more innovative ideas risen during the seminar. The Technical Committee will discuss in their April 2008 meeting these ideas together with the innovation areas, approaches and challenges of table 7. The preliminary ideas are:

1. Localised warning system for dangerous road stretches due to weather conditions

The present weather warning services for road users are quite general, often national and too coarse in time and space considering the extent of the weather problem. From the user point of view, this leads to many unnecessary warnings, which may lower the motivation of the road users to follow the advice and change their behaviour accordingly. More localised warnings are needed with new, targeted dissemination channels.

The hazardousness of the road network is first analysed using auxiliary information from sources such as accident, environmental and road structure registers and climatological archives. For the most hazardous points, very high-resolution weather and road condition forecasts are produced, tuning the present models with auxiliary information. The weather hazards in question may vary from the dangerous slipperiness caused by the freezing of the road surface in the north to thick fog formation in Northern Italy and gale winds in Adriatic coast. In fog warning case, the developed new visibility product as well as tendencies of fog development will be crosschecked with the main end users, i.e. the highway management companies.

The dissemination channels for these new types of warnings will be designed to reach most effectively the appropriate road users. The dissemination system may be a combination of many present means such as variable signs, push services for various mobile devices or radio. For pre-trip planning, Internet is useful.

2. Travel time and route planning

Different data fusion methods have been used widely in different kind of transportation applications. For example different neural networks have been used successfully in data fusion for forecasting traffic situation. Previously, the number of data sources that have been fused has been limited (inductive loop data with travel time data or road maintenance data with weather and road condition data) and the applications have concentrated on either traffic data or road weather data, seldom both. However, the development of the traffic situation is dependent both on prevailing and near-future traffic situation and on weather and road conditions. The effect of the weather is strongest in snowy, icy, foggy or stormy conditions.

The innovation of ROADIDEA is to combine several types of data: second-by-second up-to-date floating car data, most recent available point-based data (inductive loops etc.), link-based data measured with fixed stations (camera detectors etc.), point-based road weather data, area-based weather forecasts, incident data etc. together with history data from all the sources. This data is diverse by the update frequency (from one second to hours), by the age or the freshness of the latest available measurements (from few seconds up to 30 minutes or even more), by the geographic coverage (the penetration etc.), and by the area for which the information is measured or estimated (point-based data, road-link-based data, area-based data). Most of the data will be numerical but for example incident data may be verbal. A data fusion model will be developed.

There will be several user groups for the information produced by the data fusion model created in ROADIDEA. Two probably most important users will be private and public organisations that provide services to road users and road authorities. These services can provide either up-to-date online information or forecasts of the traffic and driving conditions (travel time etc.) that are based on latest measurements or the service can be based on historic data (i.e. routing services etc.) that predict the driving conditions based on past experience. Both private persons and truck companies can be clients for these services. Road authorities need full picture of both traffic situation and weather and driving conditions for both traffic management and road maintenance.

3. Public transport planning and passenger information service

Public transport vehicles, especially busses can generate data second by second about driving events. Electronic ticketing systems will be introduced widely in Europe in the future and these systems are able to store driving and passenger information. Busses and electronic ticketing systems are very useful data sources while analysing public transport system. This pilot will focus on information service development for the passengers and public transport system planning. Web based route guidance systems are already available in several European countries and these systems can be used as data sources mobile information services. Neural network methods are already used for analysing detailed driving data from busses.

In ROADIDEA, project data from many other sources like web, public transport registers, and real time information services for travellers will be merged for use of passenger information system development, public transport planning purposes and infrastructure developing procedures. Data will be gathered from vehicles, electronic ticketing systems, traffic signals, traffic count systems and even from video processing systems. All this versatile data will be merged using data fusion methods and the generated information will be made available for the public and private service providers. Weather information and forecasts are also valuable information for travellers while they consider the transport mode alternatives.

2.3 The First Innovation Seminar

Phase 2. First Innovation Seminar on 12-13 May 2008 Prague

Purpose and expected results:
The first innovation creation takes place in the beginning of the project (M6). Seminar will engage all partners and user-group representatives since the interdisciplinary approach to complex phenomena is vital in innovation creation. No boundaries are set to innovative ideas, which may be incremental or radical. For the invited users and representatives of other stakeholders, budget includes remuneration of travel and accommodation expenses.

ROADIDEA system supports also freight transport as one user segment. Some trucks are already equipped with CAN bus reader and GPRS connection. Safety is one key element in weather information distribution and trucks are one target group for this kind of services. Positioning information makes also the use of trucks more efficient in transportation operations. Pilot services innovated in WP5 and piloted in WP6 will include some examples with user guidance. Technological development is done continuously, but in two successive cycles, related to the two innovation phases of WP5.

WP2 Data collection and WP3 Method and model development provide necessary background information for the execution of WP4 Data utilisation, for operators and for driver and passenger support. The development work is steered through the outcome of WP5, innovation procedures and management, where the user community will have its central guiding role by participating in the two Futures Seminars. During these two events, innovative ideas are fostered and evaluated, to find and select the most promising ones for WP6, Creation of pilot services.

Methods to be used:
The methods to be used in the innovation seminars are Charrette and Futures Workshop, with some aspects from Future Search (see chapter 3: Methodologies). In addition weak signals are discussed in the early phases of the seminar.

The innovation seminar consists of brainstorming sessions applying the Charrette method and futures workshop method. During the innovation sessions it is important to create a feel of connectedness and "we"-spirit. This is done by employing the Socrates (Σωκράτης) method - Socratic Walking - seminar and a pub-seminar, which means free ad-hoc discussions to develop mutual understanding and get the participants to get acquainted with one another and agree on concepts and language to be used by the consortium. This is essential for the consortium to interconnect their expertise to allow emergent new ideas to become available. In short, the participants are guided to think outside the box, insist, that the ideas are "ours", try not to aim to consensus, remember, that they only represent themselves (not their employers), and to document the reasoning behind opposite or diverse views.

All in all, since varying expertise, language skills and cultural background of the participants may cause problems, it is necessary to have ad-hoc type discussions in various collections of people. Also, to realise how different people can create different illusions and understanding on the same issues a brief introduction is given in the beginning of the second day.

The aspects or the Future Search method (Future Search Network 2007) that are applied in ROADIDEA are listed as follows:

- Diverse groups put themselves into the future and describe their preferred future as if it has already been accomplished. (It is useful to imagine what the world would be like if this or that idea would be in full use)
- Whole group dialogues to agree on common ground. (In plenary sessions some degree of commonness must be found but diverse approaches are useful to be kept up in general knowledge of the whole consortium and maintaining these may prompt quite new understanding on complex issues. Towards the end when acceptance of the ideas are discussed it is advisable to find a common ground)
- Volunteers sign up to implement action plans. (It is important that there are conscious actions on the ideas that are chosen to be piloted. Intentions without actions are unacceptable in a R&D project)

The weak signals mean today's information that can foretell the changes in the future. This information might sound funny or strange and it can cause confusion, because it offers a totally new way of thinking or idea of innovation. This aspect is an important indicator to approach brainstorming with a free mind. Weak signals are discussed in the introductory plenary of the seminar and reminded to participants along the work. Explanation of the weak signals analysis is discussed in the advance reading material for the participants (Hiltunen 2007) (see section 2.1).

Programme of the first innovations seminar is as follows:

Monday 12 May, 12 June 2008, Prague, FALKENSTEINER Hotel Maria Prag

8.30 – 9.00	Registration List of expertise of the participants Introduction
9.00 – 12.00	1st Session
12.00 – 13.00	Lunch (timing may float according to work flow)
13.00 – 14.00	"Walking" Seminar
14.00 – 17.00	2nd Session
17.00 – 19.00	"Pub" Seminar
20.00 -	Dinner

Tuesday 13 May, 13 June 2008, Prague, FALKENSTEINER Hotel Maria Prag

9.00 – 12.00	3rd Session
12.00 – 13.00	Lunch (timing may float according to work flow)
13.00 – 14.00	"Walking" Seminar
14.00 – 15.00	Preparation for 4th Session
15.00 – 18.00	4th Session
19.00 -	Dinner and/or SIRWEC Get-together

The work in sessions and seminars is explained in the table 6. The actual detailed actions are presented in annex 2: Preliminary Plan of Innovation Details in Seminars. These details will further be developed and decided upon after the Technical Committee meeting in April 2008.

Table 6. The Work in Sessions and Seminars

Session	Work
Registration	List of expertise of participants is completed
1st Session	Introduction to work, items to be innovated, weak signals analysis (plenary). Random grouping of participants (4 groups, 6-8 persons per each group). Selection of group rapporteurs (groups). Brainstorming - individual ideas written on the wall using flip papers, permanent drawing pens and post-it adhesives. This task is first done individual without discussing. Grouping - discussion and grouping of ideas, creating more ideas. Evaluation - marking with "heart stickers" the favourites. Reporting - each group explains its work, others are commenting. (plenary) Naming and selecting ideas/areas for walking seminar, basketing. (groups)
"Walking" Seminar	The walking seminar is a Socratic Walking discussion continuing in the groups based on the selection of ideas in the first session. The groups are self-organisingly divided in subgroups. The rapporteur will guide the walk and collect the ideas of subgroups during the walk. Timing is essential.
2nd Session	The results of the walking seminar will be reported. (plenary) Former groups continue but shifts are allowed. Already produced ideas are redefined, or now new group structure will allow riding on others' ideas. (group work) Following questions are studied: actors, structures, (added) values, drivers, obstacles, collaborators, products and services. Brainstorming, grouping and evaluation of ideas, suggesting baskets and shortlist Basketed ideas are browsed and the most interesting ones are selected to the pub seminar.
"Pub" Seminar	Groups are formed self-organisingly, thus participants may change groups and new rapporteurs are selected by each group. The groups will further discuss the selected ideas freely in subgroups. Any new outcomes are reported to the moderators.
3rd Session	Introduction to work - illusions and possible weak signals are discussed (plenary) The moderators will report the results of the first day. (plenary) New self-organising groups are formed and rapporteurs selected. Creating more ideas through brainstorming, grouping and evaluation, (group work) Users and service providers are consulted for each idea.
"Walking" Seminar	The walking seminar is a Socratic Walking discussion continuing in the groups based on the selection of ideas in the first session. The groups are self-organisingly divided in subgroups of 2-3 persons. The rapporteur will guide the walk and collect the ideas of subgroups during the walk. Basketing of ideas, shortlist suggested. Timing is essential.
Preparation for the 4th Session	Preparation done by the moderators concerning the idea baskets, and selection of short-listed ideas, and decision on IDEA teams and further actions after this seminar. Participants can prepare for the task allocation and cool down
4th Session	Following questions are studied: actors, structures, (added) values, drivers, obstacles, collaborators, products and services. IDEA teams (2-3 persons) appointed to each idea. (plenary). Task allocation to WPs. Planning of next steps: reports to web-site, discussion fora, chat areas, blogs or wikis for each idea to intranet, public discussion fora to extranet.

Innovation Areas

Although it is necessary to keep the innovation space free of all restrictions it is however important to guide the process in order to use the available time efficiently, to focus and ensure good results. Therefore, the innovation areas are chosen beforehand in order to give the participants also possibilities to discuss with their colleagues beforehand possible ideas that they have in mind. It is not meant that all ideas must be born in the seminar, some may well be brought into discussion by the participants based on their prior innovative experience. Thus, choosing of the areas, approaches and challenges will happen through studying the items in table 7 and cover the Three Preliminary Ideas (see chapter 2.2), and find a successful merge of these. This study is conducted by the Technical Committee and pre-Charrette team. The chosen areas are then conveyed to the participants in April 2008 well before the actual seminar in May 2008.

Table 7. Innovation Areas, Approaches and Challenges

Inno-vation Areas	Challenges & Approaches					
	New techno-logies	Inter-opera-bility	Products and Services	Business Challenge	Equality Challenge	Sustainability Challenge
Data collection, aggregation and interchange	Are there new technologies to be applied?	Ensuring data acquisition & intercon-nectivity	Availability, anticipated uses	What new niches might arise?	Observe young and old, handicapped, men and women	No products and services shall add to climate change! Recycling?
Data processing methodo-logies	Who, where and when; timing	Collaboration of service providers	Role of service providers	What new niches might arise?	Language problems must be considered	Will there be ICT experts in the future to maintain the services?
Safety: Warnings: c to c c to i roadside	Who, where and when; timing	Critical issue – if not existing should be innovated	Are safety issues taken into account sufficiently already? Collaboration with safety organisations	Observe the state-of-the-art, connect technology products in new ways	If visual or audio displays used, observe equality needs, personal position data problematic	Use of visual and audio alarms dependent on electricity – use of renewable energies important
Forecasting weather, traffic, accidents	Do pursue automation!	Important prerequisite; notice personal data security issues in personal position data processing	Different user groups: research, administrations, police, safety organisations	Service providers need free or low-cost data	Driving cultures vary even inside EU	Data and information could be used for efficient use of roads
Logistics	Controlling mobile goods and people	Collaboration of service providers and users	Available technologies might be used differently	New logistics services may arise	Not relevant	It's necessary to streamline actions!
Transport modes and cross-overs	How to improve moves between transport modes in real-time?	Collaboration of service providers is critical	Totally new insights needed here!	Totally new insights needed here!	Take into account different needs of elderly and other groups	Try to support land transport by rail
Legislation issues	Will there be obstacles on the way when applying new technologies?	Is it possible to ensure interopera-bility without new laws?	EU legislation may have the answer, or then again not!	Is it possible to do business within the existing legislative framework?	Take into account different needs of elderly and others	National legislation should be in line with EU legislation already
Immateriali-sation i.e. pursue knowledge-intensive services	Monitor information technology advancements!	Services should interoperate fully automatically	"Products must abhor paper" – i.e. move bits not paper or disposables!	New approaches are desperately needed here	ICT is still new to many immigrants – do they get necessary services?	Recycling is a must! Rather move bits not goods or people!
End-users: person cars & transport	Human and social restrictions should be appreciated	Critical for end-users: user-friendly interfaces	User-friendly interfaces, personal data security critical	Pursue low-cost, eco-efficiency	Special needs of the elderly ever increasingly	Eco-efficiency wanted!
Foresight visions	Emergent technologies will give new unforeseeable tools	Will remain constantly on the drawing board	Emergent and visionary products and services	Globalisation tilts over to CHINDIA? China+India	Multinational immigration will challenge the visual and audio services	Accelerating climate change – warning functions increasingly important

To illustrate the type of ideas that are likely to come up the following examples are helpful:

Examples

- Question: How to improve ever-growing traffic flow from and to Hamburg harbour and surroundings including transport mode cross-overs?
- Idea: It would be good to network together all GPS-equipment in the cars in a certain area so that they could optimise road and traffic at any given moment.
- Question: Will there be detection of traffic data from airborne sources and from space?
- Idea: It would be good to merge extended FCD with fixed detectors.
- Question: How to develop weather data detection by car-to-infrastructure systems?
- Question: What kind of systems are needed for traffic control based on environmental data?
- Question: What are the likely C2C/ C2I technologies?
- Idea: Development of in-vehicle warning device for railway level crossings.
- Idea: Automatic detection of vehicle interactions in a signalised intersection.

Phase 3. Work in WPs, Further Development of Ideas, Piloting

The ideas decided to be suitable for piloting are handed over to the WPs to be taken into account. The IDEA teams will work together with the WP-leaders - in practice the most favourable situation is that most WP leaders will be in one or other IDEA team. Following the Charrette, the ideas are implemented into the pilots and they will further be developed using intranet at www.roadidea.eu web-site which will include discussion fora for each idea or alternatively, blogs are opened for each idea or roadideawiki is constructed. Also, new ideas may emerge from discussions in the web-site within the consortium (intranet) and through public discourse (extranet). This work will be developed in detail after the innovation seminar and reported in the D5.2 deliverable.

Reporting: The D5.2 report compiles user input and output, results from innovation procedures and concludes the best ideas for most potential pilot services to be developed and implemented. For more explanation see the table 6 explaining the work in sessions and seminars in detail for the first innovation seminar. The flap top papers are photographed for proper reporting. The seminar presentations (power point files) are attached. In the following table 8 the Power Point presentations used in the seminar are explained.

Table 8. Seminar Presentations

Power Point File Name	Contents
Kick-off WP5-revised	Introduction to day 1: Innovation processes and background philosophy of brainstorming
INNOSEM2008-intromaterial	Introduction to the seminar work, explaining the Charrette process, weak signals analysis
INNOSEM2008-guide-to-participants	Practical guidance for all participant groups
INNOSEM2008-process-details	Detailed description of the working processes in sessions
INNOSEM2008-idea-connections	Development of the idea from the early suggestion to full description of ideas and the fact-finding needs
INNOSEM2008-encouragement	Continuous slide show giving impetus for innovation
INNOSEM2008-day2-illusions	Introduction to day 2: How differently people see things! How unreliable our eyes can be! How certain impetus can lead to quite different results!

User satisfaction level on first service pilots is studied (seminar survey) and reported. Number of contacts to service operators with exploitation capability is documented as is the number of new, advanced ideas. The survey questions will also cover aspects such as how the process was received and understood by the participants, and how they rate the ideas and what kind of lessons there are to be learned for next phases, and for the 2nd innovation seminar in particular. These will be included in the innovation seminar reports in relevant chapter on success of seminars. (see chapter 4: Ensuring Success).

2.4 The Second Innovation Seminar

Phase 4. Second Innovation Seminar in April 2009, Stockholm

Purpose and expected results:
The innovation process should reflect the R&D development performed meanwhile, and is thus based on novel experience on European transport systems and available information. Radical innovations are further encouraged, though ideas may now be more realistic considering their actual implementation. New ideas may emerge that are considered worthwhile piloting at least partly through the remaining project time.

The second seminar is planned to be similar to the first, but the lessons learned from the first seminar will be taken into account when finalising the structure and actions in the second seminar. The results of discussion between the seminars will be studied, which will be presented by the IDEA teams, WP leaders and moderators. The IDEA teams will also report the advancements of the ideas. In addition, the idea baskets are studied once more - what type of ideas have been left from the first seminar - but new ideas will also be innovated keeping in mind two goals: the ideas should be suitable to be tested in the existing pilots during the last 6 months or the ideas may be suitable to be included in the final Road Map.

The second innovation seminar will consist of sessions and seminars similar to those in the first one, modified by the lessons learned from the first one (see table 6). The preliminary plan of innovation work is revised according to the lessons learned from the first seminar. Thus the preliminary programme of the second innovation seminar is as follows:

The Second Innovation Seminar, April 2009, Stockholm

Day 1

11-12	Registration & introduction
12-15	1st Session: Lessons learned from the 1st seminar, results from studies and piloting of ideas by WPs, IDEA team reports, used ideas reconsidered
15-16	Walking seminar: Further analysis of used ideas
16-18	2nd Session: Ideas of basket 3 and 4 reconsidered, new ideas
18-19	Pub seminar: Further development of all ideas
20-	Dinner

Day 2

9-12	3rd Session: Selecting ideas for additional piloting
12-13	Lunch (timing may float according to work flow)
13-16	4th Session: Task allocation, suggesting ideas for road plan

Choosing the areas, approaches and challenges to be innovated will happen through discussions between the Technical Committee and other consortium members. The chosen areas are then conveyed to the participants in March 2009. This will give the participants ample time and impetus to create idea "germs" already at home with their colleagues.

Phase 5. Work in WPs, Further Tests in Pilots

The ideas produced by the second innovation seminar are handed over to the WPs that are working with respective issues to be included in the running pilots. There may be new ideas that can be added or there may be reinvented ideas that bring forth some new aspects that have been seen essential. Some reconsidered ideas will further enhance a given pilot, some new ones may be suitable to be piloted in the end of the project life cycle. The IDEA teams will continue to work for the ideas to be fully exploited.

The results of the second seminar will consist of two categories of ideas: ideas that are new are modified from those innovated in the first one and piloted by other WPs and ideas that are suitable to be moulded in the work for defining the final Road Map. The selection of final ideas for new user services is presented.

Reporting of the results of the second seminar in deliverable D5.3 will include a summary of the seminar, comparing the results to the first one and assessing the lessons learned from the development work after the first seminar (of phase 4 of Charrette). The selection of final ideas for new user services are presented as well as suggestions for the Road Map. In addition the presentations, posters and other material will be documented in the deliverable together with the study on success factors (see table 10). Also the success factors are studied in the same manner as in the first innovation seminar.

3. METHODOLOGIES

3.1 Charrette Method

Charrette is a French word meaning "little cart." A little cart was originally used during the 19th century by art and architectural students to carry their work to the university in Paris. Like students today, they did not always make the deadline and would jump in the charrette to finish their design. As they moved along the country roads in route to the university, farmers, innkeepers, and everyone else they passed would suggest improvements - a little more red here, a little less green there. Hence, the final work would be a "Charrette design" with input by the general public against a tight deadline. (Glenn & Gordon 2003).

Participation can involve a group in one location, meeting face-to-face, or geographically and temporally dispersed but connected by telecommunications. The greater the range of alternative futures considered in the process, the more likely the conclusions will have a positive and lasting impact.

Once people genuinely and actively participate, the process is seldom neat and tidy, especially if important and controversial issues are raised. Anger will and should flow and unlikely ideas will be aired. Only if this kind of free-for-all occurs -- and is allowed to occur -- will participants recognise that they have neither the time nor the interest to make comments and decisions about everything. This leads to a new sense of focus, responsibility, and cooperation, but only if the previous phase is allowed to run its course. What is especially wanted is the attitude to "think outside the box".

In general, Charrette is an intensive face-to-face process carefully designed to bring people from various segments of society into consensus within a short period of time. The pre-Charrette planning breaks the main issue into its component parts. These parts become groups that periodically report to the whole. Feedback from the whole on these group reports is then addressed in the next round of group discussions. This sequence is repeated until consensus is reached at the final deadline for a report of the whole to whomever-the news media, government officials, or the larger public drawn to the final event through media coverage of the process. Charrettes vary in size, from 50 to over 1,000 people, and in time, from one day to two weeks.

The Charrette is illustrated in the following figure (phase levels have been added):

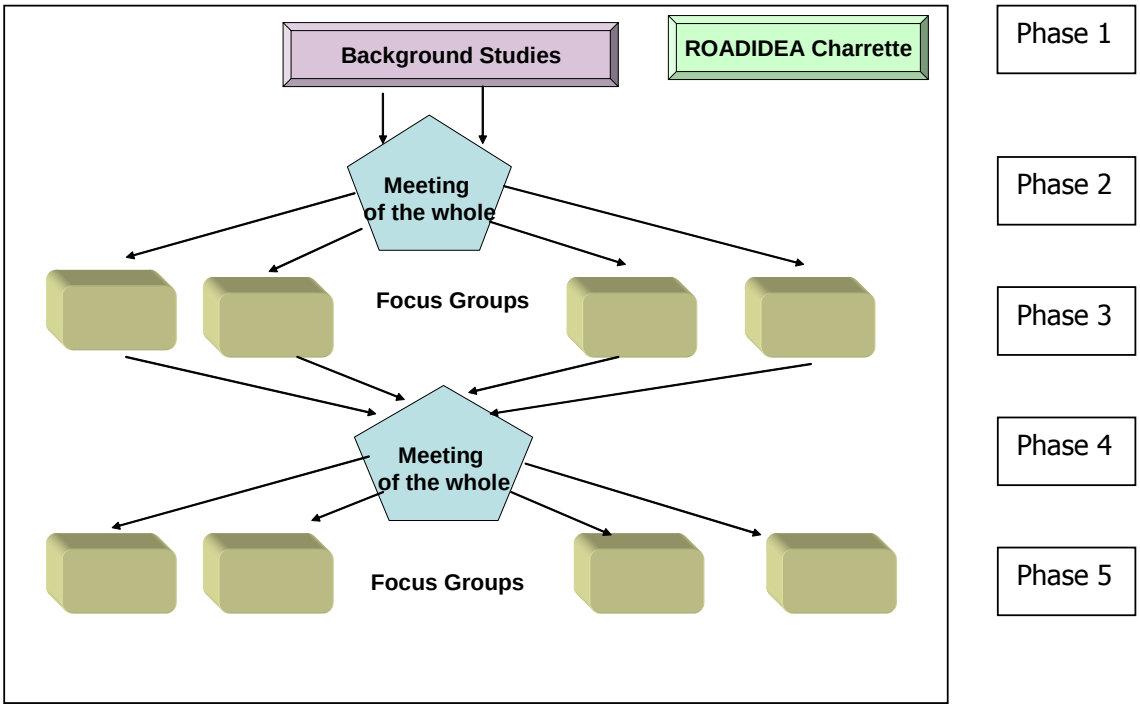

Figure. *Charrette process pulses back and forth from small groups to the large or whole until general consensus is reached. (Glenn & Gordon 2003, modified by Auli Keskinen)*

In practical terms, the participants must ensure enough time to work through the ideas, assess their feasibility and impacts to others' ideas. Also, when conferencing, participants should not break for lunch but eat in working groups. Breaks should be according to need, not schedule, so that loss of momentum can be kept to a minimum. Lastly, the trick of a Charrette is to eliminate the distinction between "them" and "us." No restrictions on participation exist, only a strict deadline.

Pre-Charrette Plan

According to the description of the Charrette Method (Glenn & Gordon 2003) during the pre-Charrette planning the steering committee should (1) identify the four to ten sub-elements of the issue that become the four to ten discussion groups during the Charrette; (2) list the key questions for each group; (3) agree on what is a proper range of views on these questions; (4) find people to participate in the Charrette who will represent this range; (5) gather all available and relevant information to answer these questions; (6) select a group facilitator, outside futurists, consultants, and other necessary resource people (such as for financial management, public relations, media coverage, publicity, music, etc.); and (7) create an initial design of the process, a budget, and hire a Charrette director and administrative staff.

This advice was applied by the pre-Charrette team and discussed further by the Technical Committee. Hence the results of the discussions have been actuated in this plan.

3.2 Futures Workshop Method

The Futures Workshop Method as originally invented by the Austrian sociologist Robert Jungk in the 1980s. The Method has been developed by many other scientists. It is widely used in various forms by many organisations in the world. The most important phases of the workshop are: preparation, brainstorming, grouping, evaluating and task allocation. The futures Workshop method is described in Apel, Heino (2004): Future Workshop, http://www.die-bonn.de/esprid/dokumente/doc-2004/apel04_02.pdf

1. The *Preparation phase*: Here, the method, its rules and the scheduled course of the workshop (in accordance with the participants) is introduced. As a first step, it is possible to prepare the room for the workshop together with the participants (if not already done before). All tables that might separate the participants from one another should be removed from the middle of the room or put outside. Pinboards, paper, pencils etc. should be available and at hand. The participants should be seated in an open circle to be able to interact and go to the pin-boards at any time.
2. Originally, the *Critique phase* is the start of the workshop. Here, the problem is investigated critically and thoroughly. First of all, a visualised brainstorming is performed and a general and critical question concerning the problem is framed. The critique points are written on small cards. Normally, this is made in groups and in the sense of brainstorming, where the following rules apply: no excessive discussions, associative linking to ideas already existent, no 'killer phrases', quantity having first priority (collecting), etc.
3. After dealing with the problem, the future workshop does not immediately search for the solution. First, all participants try to work out a utopia, to draw an exaggerated picture of future possibilities. In this so-called *Fantasy phase* a relaxed atmosphere should prevail that must be created both with regard to the room and by playing games. The transition may be made e.g. by fantasy trips, meditation, medial support, etc. One can also begin with the conversion of the selected essential critique points found in the critique phase (negation of the negation). That way, the participants are free from inherent necessities and may use brainstorming techniques and creative games to find and to reflect utopian solutions. The basic criterion for the selection of the presentation form is that they should be completely different from usual, only rationally orientated problem solutions. The solutions/strategies found that way should be an original and rich source of really trend-setting ways. All ideas are collected and put into an 'idea store', regardless of their practicability.

   In a second step (which can be also performed later in the implementation phase), all those ideas have to be 'transformed', that is, they must be reduced to a practical and realisable core. According to Robert Jungk, the social fantasy of the participants is developed in this phase. Or, to be more pragmatic, it is the point to alienate a problem solution and to present it in 'false', 'untypical' and not strictly rational forms and/or texts like e.g. painting, role plays, sketch, reports and so on. This has a creativity-promoting effect, because here, in a very relaxed atmosphere, far away from the stress of everyday life and profession, expression forms can be found and things and ideas may outcrop which could possibly not be figured out by using a direct and 'rational' approach.

4. In the *Implementation phase* the ideas found are checked and evaluated in regard to their practicability. If a solution has been found, it is finally written down, who does when, what, where and how (action plan). This notebook of duties is the log book for the subsequent permanent workshop (5th phase).

3.3 Weak Signals Analysis

It is clear that not only trends are meaningful in foresight studies, but also the unexpected happenings, their probabilities and possible impacts for the future must also be considered. The Weak Signals Analysis is often incorporated in every futures studies seminar.

What is a weak signal and what is the purpose of weak signal research? In organisational dynamics, a weak signal is (Coffman 1997):

- An idea or trend that will affect how we do business, what business we do, and the environment in which we will work
- New and surprising from the signal receiver's vantage point (although others may already perceive it sometimes difficult to track down amid other noise and signals
- A threat or opportunity to your organisation
- Often scoffed at by people who "know"
- Usually having a substantial lag time before it will mature and become mainstream, therefore represents an opportunity to learn, grow and evolve.

Weak signals mean today's information that can foretell the changes in the future. This information might sound funny or strange and it can cause confusion, because it offers a totally new way of thinking or idea of innovation. As time passes, it might come out that weak signals were the first signs or symptoms of a big change, even megatrends. However, weak signals are not always clues about big changes. They might simply be information about strange things that have happened. A practical example of weak signals is an article about some new technical innovation in a magazine (Hiltunen 2007)

Once you perceive a weak signal and understand it, a whole host of other signals may become visible. These comprise the complete ecosystem of ideas and trends that will support each other in the journey from dream to manifestation. No weak signal ever rises to dominance by itself, but is accompanied by shifts in political, economic, technological, and social thought and invention. (Coffman 1997).

4. ENSURING SUCCESS

The first innovation seminar will provide comprehensive analysis of user requirements and selection of concrete ideas for testing. The results are analysed after the seminar and the innovation work continues using www.roadidea.eu website where intranet for participants and extranet for stakeholders, end-users and other interested parties are founded. Number of participants in the seminars and their professional coverage are documented.

User satisfaction level on first service pilots is studied (seminar survey). Number of contacts to service operators with exploitation capability is documented as is the number of new, advanced ideas. The survey questions will also cover aspects such as how the process was received and understood by the participants, and how they rate the ideas and what kind of lessons there are to be learned for next phases, and for the 2nd innovation seminar in particular.

Risks and Mitigations

The risks and mitigations of the innovation seminars is explained as follows in the DoW (table 9). The results will be reported in the seminar deliverables D5.2 and D5.3.

Table 9. Risks and Mitigations

Risks	Mitigations
Futures seminars do not provide new, potential transport service ideas.	Invited experts and users in the Steering Committee ensure adequate basis for ideas based on real user needs. Well-known systematic methods are used in the innovation process. Three preliminary ideas exist to start the first development phase. Public part of the project web-site will be the channel for user feed-back
New ideas are too futuristic to implement and evaluate.	Radical innovations that are not yet technically feasible will be accepted as examples in the general Road Map. Three preliminary ideas can be used as basis for evaluation and validation.

Risk Management Plan

Actually, to determine the success of the innovation work the success factors are identified and studied in more detail, see the following table 10. These questions will be discussed by the Technical Committee in April 2008 well before the seminar in May 2008. They will be examined by the moderators and WP leaders along the seminar days coordinated by the WP5 leader. The needed survey questions and monitoring methods are planned by the WP5 leader with the help of Coordinator and Technical Coordinator. The results will be reported in the seminar deliverables D5.2 and D5.3.

Table 10. Measuring Success of Innovation Work

Work	Success Indicators	Successful Goal
Creating of ideas	Number of ideas Quality of ideas Degree of frustration	Many potential suggestions for ideas arise, discussion is enthusiastic, no-one feels frustrated.
Grouping of ideas	Number of intelligent cluster of ideas Quality of idea clusters	Intelligent and understandable clusters of ideas emerge.
Evaluation of ideas	Number of hearts given to ideas	Heart stickers ("I like this idea") are attached to ideas according to personal/professional preferences successfully.
Basketing of ideas	Number of ideas in baskets Quality of baskets	Result of basketing is seen appropriate and worthwhile.
Ideas *in toto*	Number and quality of new, advanced ideas	Ideas are innovative and good enough to be piloted and further developed throughout the project.
Coverage of expertise	Coverage of expertise among the participants	Division of expertise in the groups is documented and if there are fields with no or little expertise. This will be corrected along the continuation of the project.
Attendance	Number of participants Number of other contacted and informed stakeholders.	Successful contacts are maintained. Networking of experts has good coverage.
User satisfaction	User satisfaction level on first service pilots Number of contacts to service operators with exploitation capability	Results of seminar survey are satisfactory. First innovation seminar has provided comprehensive analysis of user requirements and a selection of concrete ideas for testing.

Further analysis on customer and user satisfaction in the seminars, trends revealed and the list of most potential innovations will be done through successive customer/user satisfaction surveys in the seminars and at the end of the project. This will give valuable information for exploitation planning.

The surveys conducted will contain concrete results and by being successive, they also reveal trends on the potential of exploitability of the pre-project status of the European transport services contra the ROADIDEA pilot services, reflecting also the exploitability of the most potential innovations to be developed in the future.

5. CONCLUSIONS

Innovations in ROADIDEA will be created using well-tested brainstorming methods such as Charrette and Futures Workshop described by the WFUNA Millennium Project covering both seminars, the time in-between for running pilots and the processing of the ideas for the Road Map. The main goal is to produce radical ideas to develop safer, more secure, efficient and environment-friendly ICT-based freight transport solutions and services.

Charrette is an intensive face-to-face process carefully designed to bring people from various disciplines and expertise to create new solutions to problems within a short period of time. The first round (the first innovation seminar) will produce the ideas to the focus groups (the WPs) that will take on the ideas and develop their work and piloting accordingly. The second round will further develop the ideas under piloting and create new ones for further consideration.

The participants will consist of members in the ROADIDEA consortium parties and voluntary members of the Advisory Committee. These will form the necessary actor groups for the innovation work: group and subgroup members, rapporteurs, IDEA team members and moderators.

Results of the first innovation seminar include user input and output, results from innovation procedures and a selection of the best ideas for most potential pilot services to be developed and implemented. The ideas will be chosen for piloting in between the seminars – approximately 10 months time. The lessons learned from the first seminar and the results of piloting are further brought to discussion in the second seminar. The results of the second innovation seminar will include a summary of the second seminar. The selection of final ideas for new user services is presented. Both seminar results as documented in respective deliverables will also include all presentations, posters and other seminar material.

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Annex 1 Results of the Survey on Experience

The survey on consortium participants' experience on brainstorming was conducted through email between 11 and 21 Jan, 2008. All the participants were included in the survey and so were the Advisory Committee members (of which those who will not attend the seminar were excluded from the results).

Detailed survey results:

Survey sample size was 45, of which 31 replied (67%) by 22 Jan 2008.

Q1: I have attended to brainstorming/innovation session/futures workshop (in the last 5 years):
(10) 0 times
(11) 1-2 times
(9) 3 or more times
(1) other, please specify:

Q2: The sessions I have attended to have lasted on average:
(6) two hours or less
(17) half a day to one day
(1) two days or more
(0) other, please specify:

Q3: I find these sessions in average to have been:
(0) non-sense
(6) somewhat beneficial
(19) interesting and valuable
(2) other, please specify:

Q4: I think that my general knowledge about brainstorming methods is:
(5) negligible
(19) modest
(4) good
(4) excellent
(0) other, please specify:

Q5: I'm presently well-informed to participate in ROADIDEA innovation seminars
(13) yes
(3) no
(19) I need more information on brainstorming methods
(1) other, please specify:

Annex 2 Preliminary Plan of Innovation Details in Seminars

The preliminary detailed plan for innovation work in seminar is stated as follows:

1st DAY

1st Session:
Randomly chosen members in groups
1. Write an idea on a yellow/green post-it – one or more – create 1-2 ideas - individually (some of these may be ideas that you have brought with you)
2. Attach post-its to a flip paper on the wall randomly
3. Study the ideas together in the group and group them on the wall – idea's inventor may explain what is meant – rapporteur documents these explanations if needed to additional post-its or other paper (sketchbook, etc.), add totally new ideas along the way through group discussion (go through 1 and 2 then group again)
4. When all ideas (for the moment) are presented, attach heart stickers to ideas to post-its according to your preferences – each person individually
5. Select the best ideas to go ahead – in groups - moderators will take a photo of the flip papers
6. Give the best ideas nice names and suggest a basket for all ideas – in groups
7. All groups go around to study other groups' results, listen to rapporteurs' explanations and suggest improvements or new ideas based on those already chosen (study round)
8. Select 3 ideas to walking seminar (in walking seminar, divide the members into 3 subgroups and give each an idea to discuss – rapporteurs collect the results)

2nd Session:
Groups continue as such but shifts are allowed according to preferences
9. Add more items to the chosen best ideas by discussing the actors, structures, values, collaborators, obstacles and drivers
10. Discuss/confirm basketing of ideas
11. Select 3 most interesting ideas for pub seminar – one for each subgroup of 2-3 persons for the pub seminar
12. Place the ideas with all additional material to baskets, suggest shortlist of ideas

2nd DAY

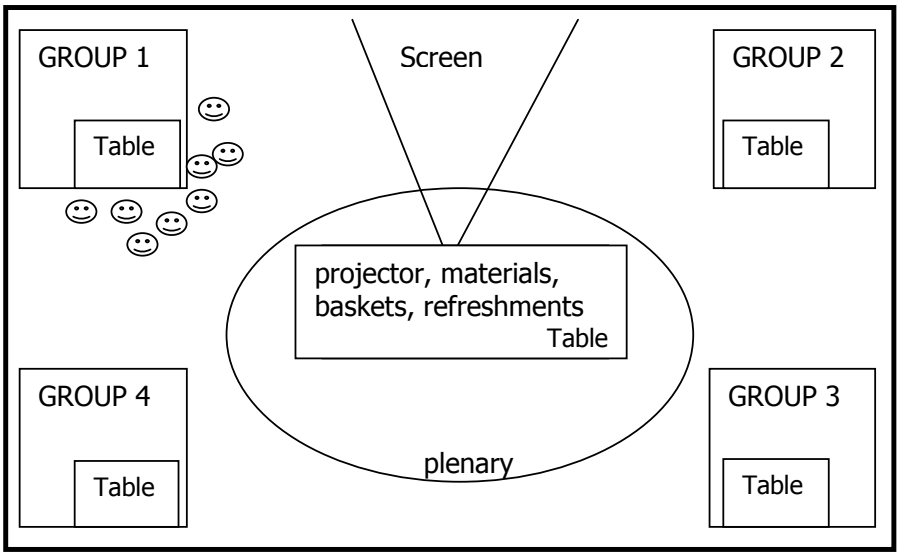
3rd Session:
1. New round of actions 1 to 8 with minor changes stemming from the first day
2. Groups: members can choose a group according their preferences

4th Session:
1. New round of actions 9 to 12
2. IDEA Teams selected, shortlist of ideas decided
3. Task allocation for work in focus groups of Charrette (WPs)
4. Survey among the participants on satisfaction to the innovation work

The Innovation Work Room (see picture) is planned to be organised so that groups work in their respective corners of the room. The moderators will go around in alternate groups and give guidance along the way. On the screen there will be a slide show displaying teasers and other innovation promoting images.

Each participant is appointed one chair that they can use in the group corners and around the central table in plenary sessions. By placing the groups into the same room the interaction between groups is facilitated – there may be free commenting and fact-finding along the way, and the results of each group are easily discussed in plenary sessions and study rounds.

Picture: Innovation Work Room



Annex 3 WP5 Task Allocation

WP5	Innovation Procedures and Management
WP leader	Foreca
Partner	All

WP5 Tasks	Partner Short Code	Contribution	Expected Result	Start	Stop	Person Months	Approval Date
5.1	FORC	Planning of the Innovation Procedures	D5.1 Plan of Innovation Procedures	M3	M20	3	20.3.2008
5.2	FORC FMI, DEST, KLIM, DEMI, DLR, POY, ARPV, RODS, METI, CAR, AMA, LCMG VTT	Planning, conducting and documenting of the 1st Innovation Seminar - 1 or 2 person months is allocated to each partner to cover the work that consists of: - prior study of the reading material for guidance - attending to the seminar in 2008 - participating to email discussions/web-chats for further development of the ideas after the seminar - VTT does additional associated moderator work during the planning and conduction of the seminars.	D5.2 Results of the First Innovation Seminar Innovated Ideas and their task allocation for further development	M3	M15	3 11 2	7.7.2008
5.3	FORC FMI, DEST, KLIM, DEMI, DLR, POY, ARPV, RODS, METI, CAR, AMA, LCMG VTT	Planning, conducting and documenting of the 2nd Innovation Seminar - 1 or 2 person months is allocated to each partner to cover the work that consists of: - prior study of the reading material for guidance - attending to the seminar in 2009 - participating to email discussions/web-chats for further development of the ideas after the seminar - VTT does additional associated moderator work during the planning and conduction of the seminars.	D5.3 Results of the Second Innovation Seminar Innovated Ideas and their task allocation for further development Data for Road Map development	M16	M20	4 10 1	15.7.2009
					SUM	34	

Annex 4 Additional Sources and Reading Material

Kotelnikov, Vadim (2008) The Jazz of Innovation - *11 tips*
http://www.1000advices.com/guru/innovation_jazz_11tips_kotelnikov.html

Provide strategic alignment. Create an inspiring vision and launch a crusade. Link the innovation strategy with corporate vision, goals, objectives, and strategy. Develop a strategic innovation roadmap to choose and do the right things.

1. **Define the innovation process publicly.** Rapid innovation requires an effective innovation process. Help people understand how they fit into the system as a whole. Document your innovation process explicitly via maps and charts, and communicate it implicitly by words and practice.
2. **Build cross-functional expertise** to harness the power of diversity and discover synergies. Develop cross-functional individuals. Shuffle portfolios. Establish diverse cross-functional innovation teams.
3. **Establish a creative chaos environment** to inspire creativity and trigger accidental discoveries. Encourage improvisation and wild play. Find the right balance between order and chaos.
4. **Challenge assumptions.** Think outside-the-box. Ask searching questions "Why?" and "What If?" to identify hidden problems and opportunities. Keep eyes open for inspiration. Brainstorm every day.
5. **Cross-pollinate.** Incorporate a wide range of styles, skills, and perspectives to inspire and develop winning innovative solutions. Encourage comments and ideas. Inspire advocates and critics. Invite outsiders – experts, customers, suppliers and partners. Change hats to generate and evaluate ideas.
6. **Reward idea generation.** People want to know their ideas make a difference. Recognition and rewards motivate and encourage people to participate and make quality contributions. They also demonstrate management commitment to the innovation program and to the employees.
7. **Experiment** to pursue opportunities, acquire new skills, learn from feedback and discover new opportunities.
8. Create prototypes to visualize and test your ideas, inspire new ideas, and sell your ideas to your sponsors and peers.
9. **Allow freedom to fail.** Failure provides a great learning opportunity and should be viewed as the lifeblood of success. Learn from failures, regroup, and start again more intelligently.
10. **Measure the progress** to take a corrective action and accelerate the pace of ideas to implementation.
11. **Make business fun** to make people excited about what they are doing, working as a team, and tackling new challenges.

Main Source of Relevant Methodology
WFUNA Millennium Project *The Millennium Project,* www.millennium-project.org

Main Source of Relevant Methodology
Glenn & Gordon: Report of the Millennium Project: *State of the Future 2007*, Executive Summary at http://millennium-project.org/millennium/sof2007-exec-summ.pdf

The Millennium Project is a global participatory futures research think tank of World Federation of United Nations Associations (WFUNA), that has worked over 10 years producing global understanding of future issues using Global Delfi method involving almost 3000 futurists, scholars, business planners, and policy makers who work for international organisations, governments, corporations, NGOs, and universities around the world. (Glenn & Gordon 2003). Its nodes are the Project's 30 global partners who ensure that the latest and most diverse research and information is fed into its work, Dubai becoming the 31st.

Sustainability Challenge

In ROADIDEA, also the ecological sustainability is to be considered. In developing new products the use of materials is one central issue. Consumption of materials in product and service development must be efficient. Immaterialisation and amaterialisation are issues that have to be included on the drawing board right from the beginning, as is the issue of recycling. To pursue sustainability and avoid increase of greenhouse gases one should take into account at least the four basic steps (Financial Times Sept/2007):

Four steps to aid recycling

Keep it simple. The more complex a product is – in design and the number of materials used – the longer it takes to disassemble. Time is a big deterrent when managers decide whether to recycle.

Avoid blending. Fused materials cannot be recycled. This may mean exploring new types of materials that have the same performance qualities as the blended versions.

Snap to it. As well as making disassembly faster and easier, snaps and other quick-release connections that are moulded into the main structure remove another material – the plastic or metal screw – from the product

Work with partners. Since post-consumer recycling remains hampered by lack of a collection infrastructure, getting suppliers to reuse waste is often where the greatest gains are to be found.

OECD Infrastructure to 2030, *Land Transport, Energy, Water, Telecom OECD 2006:*

Executive summary on transport

Road transport infrastructure requirements (2000 to 2030)
The key drivers of road transport infrastructure requirements are: *a)* the current existing stock of road infrastructure, as measured by asset value; and *b)* GDP growth, which reflects population growth and per capita income growth. Other factors are considered to

have marginal impact around a base-case forecast determined by these economic factors for road transport. Road transport infrastructure requirements (new construction) of between USD 220-290 billion/year are forecast between 2010 and 30; with perhaps as much as 20% of this amount subject to deliberate policy intervention (*e.g.* fiscal restraint, sustainable development, modal shift to rail) efforts to achieve greater infrastructure efficiency, reduce road congestion and/or improve deteriorating road quality. The largest component of road infrastructure requirement arises from the need to replace/upgrade existing road assets that deteriorate over time. A smaller component actually goes to augment the road capital asset value. Over the entire 2000-30 period, a declining ratio of road capital asset value-to-GDP is forecast – which implies an increase in the productivity of road transport infrastructure.

Rail-track infrastructure requirements (2000 to 2030)
While the same economic factors also determine rail-track infrastructure requirements, government policy to affect modal shift (from road to rail) has an important influence. Rail-track infrastructure requirements (new construction) of between USD 49-58 billion/year are forecast between 2010-30, with a range of ±20% of this amount subject to deliberate policy intervention to fully implement/ accelerate rail upgrading to achieve modal shift targets (or not, as the case may be).

OECD Infrastructure to 2030 (Volume 2): *Mapping Policy for Electricity, Water and Transport.* Summary: http://www.oecd.org/document /49/0,3343,en_2649_36240452_38429809_1_1_1_1,00.html

Demand for infrastructure is set to continue to expand significantly in the decades ahead, driven by major factors of change such as global economic growth, technological progress, climate change, urbanisation and growing congestion. However, challenges abound: many parts of infrastructure systems in OECD countries are ageing rapidly, public finances are becoming increasingly tight and infrastructure financing is becoming more complex.

See chapter 7. **Road Transport Infrastructure: Business Models, Trends and Prospects** *by* Peter J. Mackie and Nigel J. Smith

Rudinger, Georg & Donaghy, Kieran & Poppelreuter, Stevan: *Societal trends, mobility behaviour and sustainable transport in Europe and North America,* http://www.ejtir.tudelft.nl/issues/2006_01/pdf/2006_01_04.pdf

This contribution describes the work of Focus Group three of the European Union network Sustainable Transport in Europe and Links and Liaisons to America (STELLA). It examines especially social and behavioural aspects of sustainable transport from a transatlantic perspective. Significant societal trends (e.g. the ageing of societies) are surveyed and their implications for mobility behaviour are drawn. The sustainability of this behaviour is considered along with constraints and drivers of this behaviour in Europe and North America. The contribution takes up relevant policy issues and concludes with a discussion of a transatlantic research agenda on social and behavioural aspects of sustainable transport.

Keywords: Mobility, Traffic and transport, societal trends and mobility, European-American comparative research

Example:

2.2 Ageing and its implications for mobility behaviour

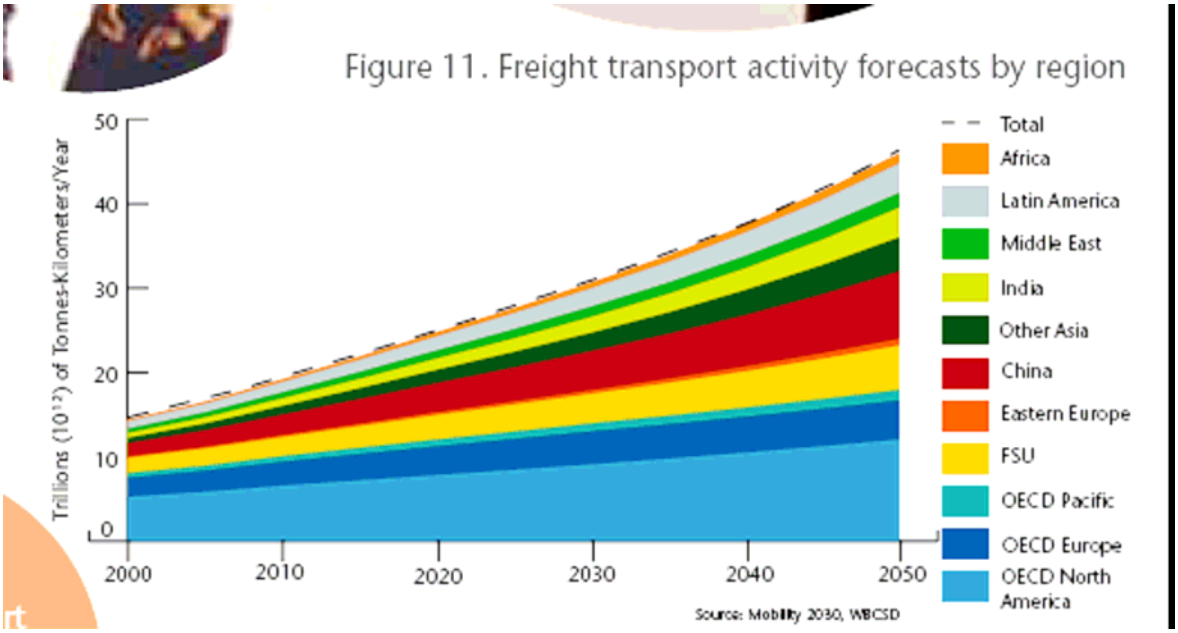
…One of the most significant societal trends is the ageing of societies. An increasingly larger proportion of the population is reaching old age. In nearly all countries of the western world the elderly already make up over 12% of the total population, and this percentage is projected to increase substantially year by year. An increasing number of these individuals are licensed to drive, and they drive more than their age cohorts a decade ago. In view of the constantly increasing number of old and very old persons in our societies it is no surprise that their mobility behaviour has become an issue of public and scientific interest … On the one hand, mobility (the ability to move about) and traffic (the transportation of people, goods, and news) have become an even more important precondition of ensuring the ability to lead one's everyday life, keep up social relations, take part in every kind of activity outside one's own four walls, and seek out places subjectively significant or objectively central to provide for daily material needs and health care. On the other, mobility is increasingly jeopardised as a person ages…

WBCSD (World Business Council for Sustainable Development):

Mobility for development. Facts and Trends. 2007

http://www.wbcsd.org/DocRoot/MD3sS7cd1agD5pxkdjJZ/mobility_for_development_facts_and_trends.pdf

Example: Freight transport activity forecasts by region



EU Jan 2007: EU Road Transport Policy. *Open Roads across Europe,* DG Energy and Transport

http://ec.europa.eu/transport/road/doc/road_transport_policy_en.pdf

Example: The move to digital tachographs

Every lorry, bus and coach on EU roads must be fitted with a tachograph to record information on their journeys. Tachographs used to be analogue, and data – concerning driving times, rest periods, loading times and mechanical work – was printed out on paper disks. However, recent technological advances have seen the introduction of digital tachographs, which are capable of recoding more data – including speed, distance covered and driver identification – with much greater accuracy. They are also much more secure against tampering than their analogue predecessors.

The EU has reacted to this technological advance by making digital tachographs compulsory in new heavy goods vehicles and buses from 1 May 2006. Interoperability certification will ensure that tachograph equipment will always work with products made by different manufacturers.

Finland: AINO Programme, *R&D Programme on Real-time Transport Information,* **2004-2007,** http://www.aino.info/indexe.html

Final report of AINO:
The goal of AINO is to develop the collection, management and utilisation of real time information in transport and thereby to create prerequisites for concrete ITS services, which will improve the safety, efficiency and sustainability of the transport systems as well as increase the well-being of citizens and the competitiveness of Finnish companies.

To achieve efficient focusing, networking and organisation, the programme consists of five subprogrammes:

- public transport information,
- goods transport information,
- transport network status information,
- driver support, and
- service framework.

IRU: International Road Transport Union, http://www.iru.org/

The IRU, through its national associations, represents the entire road transport industry world-wide. It speaks for the operators of coaches, taxis and trucks, from large transport fleets to driver-owners. In all international bodies that make decisions affecting road transport, the IRU acts as the industry's advocate. By working for the highest professional standards, the IRU improves the safety record and environmental performance of road transport and ensures the mobility of people and goods. Among its practical services to the industry, the IRU is international guarantor of the TIR carnet system under which trucks are sealed by customs upon departure and can cross several borders without further checks until they reach their destinations.

PIARC, www.piarc.org
The World Road Association-PIARC was established in 1909. It brings together the road administrations of 113 governments and has members--individuals, companies, authorities and organizations--in over 140 countries.
NOTE: PIARC International Winter Road Congress, 8-11 February 2010, Quebec
http://www.aipcrquebec2010.org/

Current Megatrends
(modified from Sirkka Heinonen (2006) Ekotehokkaan maaseudun ja kaupunkiseudun kokeilumalleja, in Finnish, (Experimental Models of Eco-efficient Towns and Regions), VTT – Technical Research Centre of Finland, Research Report VTT-R-11771-06, 99 p.

- Global change from industrial to knowledge-based structures
- Digitalisation of products and services
- Accelerating technological change - biotech, nanotech, sensor networks, robotics, CAS (Complex Adaptive Systems)
- Rise of social and technological security needs
- Increasing vulnerability of critical infrastructure networks
- Climate change, increasing environmental hazards and extremes
- Environment and economy-based refugee mass movements
- New division of energy modes, new renewable energy sources
- Rapid networking of the third world
- Diversification and personalisation of life styles and
- Rising need to identify weak signals induced by complexity of global systems

Top Ten Theses on Mobility Futures
(modified from Sirkka Heinonen (2006) Ekotehokkaan maaseudun ja kaupunkiseudun kokeilumalleja, in Finnish, (Experimental Models of Eco-efficient Towns and Regions), VTT – Technical Research Centre of Finland, Research Report VTT-R-11771-06, 99 p.

1. Working days structures will change – number of journeys will decrease but lengths will increase
2. Journeys – number and lengths – of leisure time and tourism will increase
3. Air travel will increase
4. Supply of rural public transport will diminish
5. Call systems and combined travel services will increase
6. Aging drivers
7. Mobility needs of the elderly will increase
8. Rail transport favourability will rise
9. Linking various travel services on demand will rise
10. E-commerce will not diminish physical mobility as expected

UK/IIS (2006), *Intelligent Infrastructure Systems,* UK Department of Trade and Industry, http://www.foresight.gov.uk/Previous_Projects/Intelligent_Infrastructure_Systems/Reports_and_Publications/Intelligent_Infrastructure_Futures/Index.html

Intelligent Infrastructures Future Final reports:

Project Overview 864kb
This report sets out the key findings of the project, including the choices we are faced with and the possible consequences of developing IIS

The Scenarios - Towards 2055 1618kb
This report describes the four scenarios and related 'systems maps' that were developed to investigate how science and technology might be applied to infrastructure over the next 50 years.

Scenarios Toward 2055 - Perspective and Process 1788kb
A commentary on the scenarios covering environment, social, crime and economic perspectives and a description of the process used to develop the scenarios

Technology Forward Look- Towards a Cyber Urban Ecology 1128kb
This report reviews current road maps for the development and application of the technology, and considers what future technological capabilities might be possible or required

Next Steps 570kb
The Next Steps sets out how stakeholders from across and outside Government will respond to the findings of the project.

The place of social science in examining the future of transport 231kb
This paper explores the social and behavioural context of how transport shapes society and is, in turn, shaped by it.

Intelligent Charging: Smart Market Protocols for Road Transport 497kb
Applying agent-based modelling to investigate a possible congestion solving technology.

Port Traffic Modelling 163kb
A theoretical study which looks at an idealised redistribution of port traffic to investigate the potential impact on road freight.

Science Review Summaries Pack: Eighteen science reviews were commissioned for the project. Summaries are available now.

Society:

Social Factors in Travel
Social Factors SUMMARY 643kb / Social Factors FULL VERSION 1400kb

The Social Impacts of Intelligent Infrastructure on Transport
Social Impacts SUMMARY 33kb / Social Impacts FULL VERSION 644kb

The Psychology of Travel
Psychology of Travel SUMMARY 33kb / Psychology of Travel FULL VERSION 392kb

The Role of Information in Decision Making for Transport
Role of Information SUMMARY 33kb / Role of Information FULL VERSION 977kb

Public Perception of Risk
Public Perception SUMMARY 29kb / Public Perception FULL VERSION 297kb

Environment:

Environmental Factors in Transport
Environmental Factors SUMMARY 33kb / Environmental Factors FULL VERSION 1035kb

Towards Sustainable Transport
Sustainable Transport SUMMARY 33kb / Sustainable Transport FULL VERSION 731kb

How to Design a Sustainable and Fair Built Environment
How to Design SUMMARY 34kb / How to Design FULL VERSION 1275kb

Technology:

Tagging, Sensors and Data Collection
Tagging SUMMARY 33kb / Tagging FULL VERSION 1773kb

Users and Services in Intelligent Networks
Users and Services SUMMARY 34kb / Users and Services FULL VERSION 786kb

Intelligent Distribution and Logistics
Intelligent Distribution SUMMARY 33kb / Intelligent Distribution FULL VERSION 1188kb

Materials and Infrastructure
Materials and Infrastructure SUMMARY 29kb

Complexity and Emergent Behaviour in ICT Systems
Complexity SUMMARY 25kb / Complexity FULL VERSION 650kb

Information:

Artificial Intelligence in Transport
Artificial Intelligence SUMMARY 33kb / Artificial Intelligence FULL VERSION 1551kb

Delivering Information for Transport Management
Delivering Information SUMMARY 33kb / Delivering Information FULL VERSION 1172kb

Data Mining, Data Fusion and Information Management
Data Mining SUMMARY 33kb / Data Mining FULL VERSION 426kb

Policy and Economics:

Economics and the Future of Transport
Economics SUMMARY 32kb / Economics FULL VERSION 876kb

Policy Issues for Intelligent Infrastructure
Policy Issues SUMMARY 32kb / Policy Issues FULL VERSION1028kb