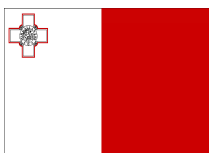


## Programme Med



<b>Project Acronym:</b>	LiMIT4WeDA
<b>Project Title:</b>	Light Mobility and Information Technologies for Weak Demand Areas
<b>Lead Partner:</b>	Lazio Region - Regional Department for Transports
<b>Component:</b>	Definition of an evaluation methodology
<b>Phase:</b>	4.1 Definition of an evaluation methodology
<b>Responsible Partner:</b>	EC. Business Innovation Center of Epirus (E.C BIC of Epirus)
<b>Partner:</b>	Malta Intelligent Energy Management Agency



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## **Executive Summary**

The introductory phase of the fourth component of LiMIT4WeDA focuses on the assessment of the proposal of the pilot project. The MAESTRO Guidelines were born from an EU project called “MAESTRO” funded within the 4<sup>th</sup> Framework Programme.

The aim of these guidelines is to analyse and report on the functionality of the pilot project being proposed, while simultaneously defining a common framework for implementation that can be utilised at a local level while giving guidance about the scalability of the proposed solutions.

This report goes on to describe the ISO 9000 which helps in managing quality systems so as to ensure the delivery of the declared product to the end customer. In this light the design must relate to existing standards and codes of practice such as ISO 9000 and the MAESTRO guidelines.

This document elaborates the objectives of pilot projects during pre-design. The viability of innovative transport systems are weighed through a defined methodology.

# 1 Introduction

The first phase in the fourth component of LiMIT4WeDA focuses on the assessment of the proposal of the pilot project. It is the process of predetermining the most salient functions or applications which the pilot project needs to tackle. These need to relate the objectives of the project with the end user's necessities and other factors which may be attributed to the environmental impacts on the locations in question.

As a result there must be a common implementation framework in aim of adding value to the postulated applications. One of the main obstacles to the effective implementation of innovative transport solutions could lie in the lack of knowledge about the strategies for their implementation.

Due to the fact that this project is proposing the use of innovative transport solutions, there may not be enough information available, and therefore the pilot project can be expressed only as expected impacts. After the completion of the design stage, the project can then delve into foreseeing the pros and cons of the actions being proposed. At this stage, an ex ante evaluation can be carried out such that the final product can be assessed in terms of its contribution towards the achievement of the planned objectives and its environmental assessment.

It is a well known fact that car owners in Malta travel an exorbitant number of journeys without any passengers meaning that the carbon footprint of the car for that particular journey is owned by a single person. Conversely the emissions per capita are reduced proportionally to the numbers of passengers in the same vehicle.

In this light MIEMA has foreseen the deployment of innovative transport systems through social media which can lay out the social network bringing together commuters and those offering a lift. The availability of such a system makes it possible for the general public to plan their trips in an environmentally friendly way while reducing the cost per trip (given that the travelling costs are shared). Those participating in this exercise can contribute to the reduction of traffic from the Maltese roads while benefitting from increased road safety.

## 1.1 *Aim of the Report*

The functionality of this report will contribute to the definition of a common framework for its implementation that can be valid at a local level while giving guidance about the scalability of the proposed systems. It is the aim of this phase to relate the progress of the project with the input of the third phase of the third component,

"Analysis of the legal framework and business models". In this way this study can yield some know-how about how to embrace local policies while setting up a common framework.

The frameworks of thought behind the common implementation framework developed in the previous component will be validated by means of experts and key actors.

This study is meant to identify those factors which can be used as indicators so as to design those solutions which can satisfy the criteria of the low demand areas. In this manner MIEMA can design the pilot project coherently within the aims and objectives of LiMIT4WeDA.

The main stumbling block during the implementation of innovative transport solutions usually lies in the lack of knowledge about the implementation process. In this light an implementation framework is required with the aim of selecting and implementing the transport applications which have been identified during the third component.

This phase will expand on the studies which were carried out during previous stages of the LiMIT4WeDA project so as to find ways of harmonizing local legislation while achieving a common framework.

In this way this phase will contribute to the emergence of a common framework for the implementation of solutions which are scalable on a transnational level. The fifth component will focus on analysing the transferability of each solution.

In this way, an action plan for the design, execution and evaluation of pilots and feasibility studies will be prepared. Using already existent methodology and protocols, the pre-design of pilots will be conducted. Ultimately the final output of this phase will be the pre-design of the pilots and the studies to be conducted. These studies will be backed up by activities aimed at involving stakeholders while realising awareness about the accessibility to collective transport in weak demand areas.

## 2 Implementation Frameworks

One of the most overriding issues lies in the fact that general pilot pre-design must reflect itself in the final product required by the end user. In this light the design must relate to existing standards and codes of practice such as ISO 9000 and the MAESTRO guidelines. The former is a standard related to quality management systems. In a nutshell this means that the service required by the end user is delivered by the organisation in charge of designing the particular service in question: what you see is what you get. On the other hand the MAESTRO Guidelines were specifically designed to develop a standard framework and methodology for the choice, design and assessment of pilot projects in the transport sector.

Various protocols already exist for quality control and project management that adhere to the final throughput of the LiMIT4WeDA project. Yet, at this point in time the most commonly observed standard is ISO 9000. By abiding to standards defined in ISO 9000, this can ensure that a project meets the customers' requirements in terms of its cost effectiveness, timeliness and the way it manages the environmental impacts. The ISO 9000 standard also provides a methodology for the benchmarking and comparison of the product's performance<sup>1</sup>.

In the view of the ISO standard, the MAESTRO was designed to adhere and conform to already existing standards. MAESTRO does delve into providing a detailed guidance on these areas, but it also suggests what is required for the pilot project to be consistent with existing quality standards<sup>2</sup>.

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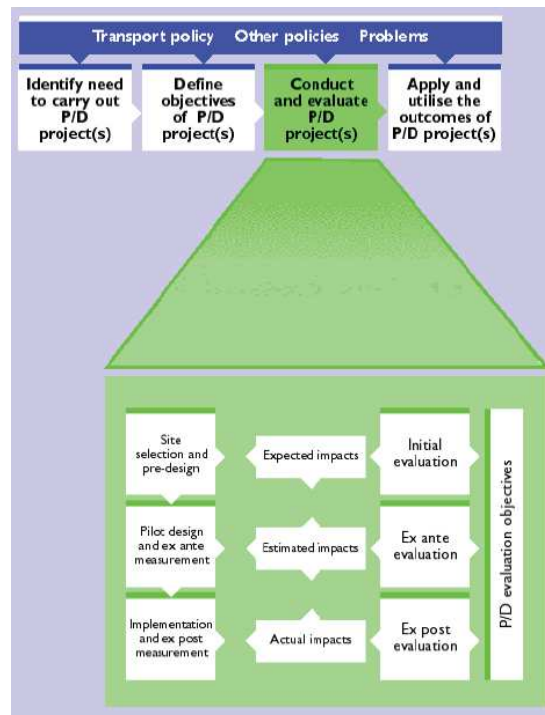
<sup>1</sup> [http://www.dmoz.org/Science/Reference/Standards/Individual\\_Standards/ISO/ISO\\_9000/](http://www.dmoz.org/Science/Reference/Standards/Individual_Standards/ISO/ISO_9000/)

<sup>2</sup> MAESTRO Monitoring Assessment and Evaluation of Transport Policy Options in Europe  
TRANSPORT RESEARCH FOURTH FRAMEWORK PROGRAMME STRATEGIC TRANSPORT DG VII

### 3 Objectives of the MAESTRO Guidelines

The MAESTRO Guidelines constitute an integral part of a project which is called MAESTRO, which project was funded by the European Commission under the Transport RTD Programme of the 4<sup>th</sup> Framework Programme. The MAESTRO project was intended to come up with a standard methodology for the selection, design and evaluation of a transport pilot and demonstration projects.

**Figure 1 The MAESTRO framework**



Source: MAESTRO Summary Report

The MAESTRO framework follows the life of a pilot or demonstration (P/D) project from the beginning (the problem or the policy that pushes towards the P/D project) to its end (the utilization and application of project outcomes). Of the four macro steps, the third, the evaluation process, is the most important. Within the third step (enlarged in the figure) are three project development and evaluation levels:

1. pre-design/site selection and initial evaluation,
2. design and ex-ante evaluation, and,



### 3. implementation and ex post evaluation.

At each level evaluation and project development are linked by increased knowledge of the project impacts. Each level deals with the project objectives stated at the beginning.

The project was aimed to set up and provide a general set of recommendations for those involved in compiling pilot projects. By so doing, the MAESTRO guidelines attempt to narrow the space between theoretical and practical frameworks of thought. These sets of guidelines are oriented toward a 'pilot or demonstration (P/D) project' which brings about innovative applications under real-life conditions of a transport system.

### **3.1 User Groups**

The guidelines are intended to involve a broad range of users while acknowledging the fact that different users will have different needs. The guidelines address four types of user groups:

- **Decision-makers** – in the Maltese case these refer to the policy makers: Transport Malta, the Ministry for Resources and Rural Affairs, the Malta Resources Authority and the University of Malta. During the pre-design of the pilot project they must be aware about the existence of a procedure underlying the P/D project process.
- **Project managers** – the Malta Intelligent Energy Management Agency. They need to be aware of the methodology to be taken while conducting P/D projects. Project managers are likely to play a significant role in the preparation of objectives, the site selection process and in achieving consensus.
- **Expert users** – will be involved in a number of tasks along the pre-design phases and the pilot project itself. They will be directly involved in the production of an evaluation plan and the impacts and indicators to be measured. The guidelines should aid expert users at understanding the overall context of pilot pre-design and help them to understand the evaluation phases. The MAESTRO guidelines describe how all active participants in a P/D project may be considered to be expert users.
- **Stakeholders** – the organisations willing to participate in the pilot project, such as the Green Transport Committee at the University of Malta and the

Malta Environmental and Planning Authority. The Guidelines assist this target group to understand the pilot's pre-design process, and therefore to be able to link the direct actors to this project. They may also provide support in the context of understanding the results and limitations of the pilot project.

### **3.2 *Transport strategy***

The transport strategy defined in the MAESTRO guidelines verifies the viability of a transport project. The guidelines define a transport strategy as the plan required for putting policies into action in order to address a particular transport difficulty. The measure is described as the action which can catalyse the desired throughput. Consequently, a group of similar measures may be defined as the strategy. Within the context of European transport, the MAESTRO defines ten types of transport strategies which cover all transport modes - both passenger and freight:

1. Physical: the transportation infrastructure itself
2. Control: the traffic control
3. Financial: pricing
4. Organisational: the parties, their respective roles, interrelationships and responsibilities
5. Operational: procedures of transport network operations
6. Legal: the regulatory standards which govern transport studies operations
7. Marketing: the marketing campaigns which can promote the use of the transport service in question
8. Vehicle stock: which modes of transport are going to be utilised
9. Land use: planning and development
10. Telematics: trip substitution such as remote teleworking

There are a number of initial criteria which must be met before the P/D project begins:

- Project objectives: the establishment of consensus among the project stakeholders to provide a common aim for the project.

- Project hypotheses: certify that the pilot project is in the position of formulating appropriate hypotheses while linking the direct impacts of the proposed P/D project to the transport objectives.

### **3.3 Resource Restrictions**

Any project has a specified budget allocated for its implementations. In this context the MAESTRO Guidelines suggest that the project managers assess the financial aspects of the systems such as the costs involved in equipment, data processing and staff. If the budget allocated for a project's demonstration are less than those required to make ends meet, the Guidelines seriously recommend the re-consideration of the entire pilot-project. The Guidelines suggest that other resource requirements such as the availability of staff and innovative equipment should also be considered.

### **3.4 Weighing the Viability of a P/D**

The Guidelines suggest that, given that the probable cost of a pilot project is larger than the budget made available, then the project should be abandoned or replaced with one which is less resourcefully challenging.

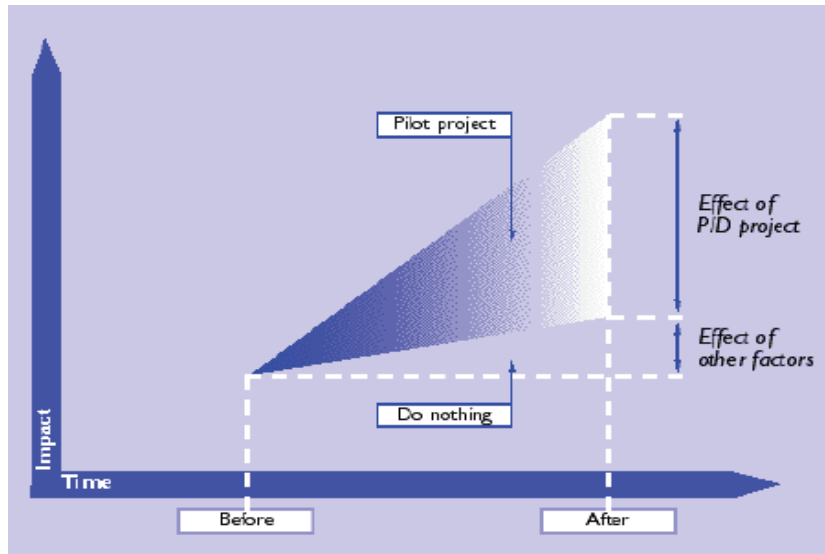
In this light, the guidelines define three sets of criteria which can be used to weigh the viability of a pilot project such that transport problems can be tackled during the pre-design stage.

The effect of these indicators becomes more noticeable along the pilot's pre-design. MAESTRO takes account of this lag by offering the alternatives to abort the project or to re-design previous stages.

The three MAESTRO decision criteria are:

1. the preliminary criteria,
2. the mandatory criteria
3. the threshold criteria.

**Figure 2 The 'do nothing' scenario**



Source: MAESTRO Summary Report

The diagram in Figure 2 illustrates a comparison between the situation before and after the project. If the project were not conducted, one would also have found some changes in the indicators one is measuring. This is due to other factors and to the time flow. To know the real effects of the project one would need to subtract from the measured effect those effects due to other factors.

There are two ways to identify the 'do nothing' after situation. It can be forecast from design history files (DHF) or by comparing mutually exclusive samples with the same characteristics, without applying the project to it.<sup>3</sup>

### **3.4.1 Preliminary Criteria**

These criteria must be met before the P/D project begins as in the case of:

#### Project Objectives

A key to a project's accomplishment is the establishment of an agreement among the project stakeholders about the most salient objectives of the project.

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<sup>3</sup> MAESTRO Summary Report

### Project Hypotheses

Project manager should be capable of certifying that he/she is in the position of formulating appropriate supposition, linking the direct impacts of the proposed project to the higher-level transport objectives.<sup>4</sup>

### **3.4.2 Mandatory Criteria**

There are a number of mandatory criteria which must be satisfied prior to the engagement of the development of a pilot project.

#### Resource Restrictions

The guidelines strongly recommend an assessment of the project's needs against the possibility of their availability. If the funds available for the pilot project are considerably less than needed to meet the proposed expenditure, then one should seriously consider changing the entire project to fit the budget.

Other resources which may be required for the pilot project may not be as visible as direct costs. These costs may be such that the availability of staff and equipment should also be considered here.

#### Site Availability

It is of utmost importance to conduct a site audit in order to ensure that selected site or sites are accessible and appropriate for the pilot project.

### **3.4.3 Threshold Criteria**

Threshold criteria can be entirely or partially met before proceeding to the pilot pre-design.

#### Consensus Issues

All parties should agree that enough data about the pre-design of the pilot project has been collected to proceed with the actual design of the pilot project. The consensus should reflect the parties' support toward the objectives that have been identified.

It is required to take account of the target groups who are most likely to be affected by the proposed project but who are not actively involved in it. Simultaneously, one

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<sup>4</sup> MAESTRO Summary Report

should ensure that conflict is minimised given that it is not always possible to ensure consensus.

#### Real Life Added Value

The aim of real life testing is to bring greater benefit than artificial tests or simulation. Yet simulation might be the most sensible environment available for testing in some scenarios.

#### Risk Assessment

Parties should do their best to identify any potential risks associated with end users' impacts and perceptions. Moreover one should also assess the eventuality of the technical risk of implementing the project.

#### Data Requirements

One should assess the project's viability in terms of the availability of data with the data required. There could be a problem if the data needed to evaluate a demonstration cannot be collected for some reason or other; in this case the value of the demonstration is reduced.

If the case is that data is unobtainable, such a scenario can threaten the project objectives, then choose an alternative for demonstration.<sup>5</sup>

### **3.4.4 Transport Objectives**

These are the uppermost level objectives, outlined in the "The Common Transport Policy Sustainable Mobility"<sup>6</sup> which applies to all transport sectors.

#### Transport Objectives

Although not explicitly stated, these are intended to further economic efficiency and regional development, together with environmental protection.

#### Sector Objectives

Encompassing the project mission statement:

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<sup>5</sup> MAESTRO Summary Report

<sup>6</sup> The Common Transport Policy Sustainable Mobility: Perspectives for the Future Commission Communication to the Council, European Parliament, Economic and Social Committee and Committee of the Regions

“To identify strategies that would reduce the amount of travel to a necessary minimum, particularly during peak traffic periods, and to determine those journeys which have the greatest potential for reduction”.

Area Objectives

Include the desire to reduce congestion levels and improve the local environment.

P/D Project Objectives

This part consists of assessing the technical efficiency of the applications implemented to assist in the achievement of the higher level objectives.

This will require a literature review about other similar projects in order to be in a position to compile a list of objectives. In this way the objectives common to all the projects can be prioritised.

## 4 ISO 9000

The widely known ISO stands for “International Organization for Standardization”. It is an international organisation aimed at setting standards. It is composed of representatives from various national standards organizations. It was first founded on February 23, 1947, and its aim was to disseminate the standard while amalgamating other systems such as the British Standards on a worldwide scale amongst industrial and commercial industry communities. Its headquarters are located in Geneva, Switzerland.<sup>7</sup>

### 4.1.1 How the ISO 9001:2008 Model Works

At this point in time there are various models for standardisation. In this light one asks oneself ‘What is so special about ISO 9000?’. The requirements for an ISO 9000 certified quality system have been standardized in spite of the fact that a substantial number of organizations regard it as unique. ISO 9001:2008 lays down what specifications a quality system needs for conformity, but does not specify the ways how they can be met. This flexibility leaves great scope for its implementation in different market positions and business cultures<sup>8</sup>.

### 4.1.2 Checking that It Works

The standard is structured such that any organization complying with it can audit its own products with the aim of verifying that it is managing its processes effectively. In this manner the body in question can autonomously check that it is fully in control of its activities.

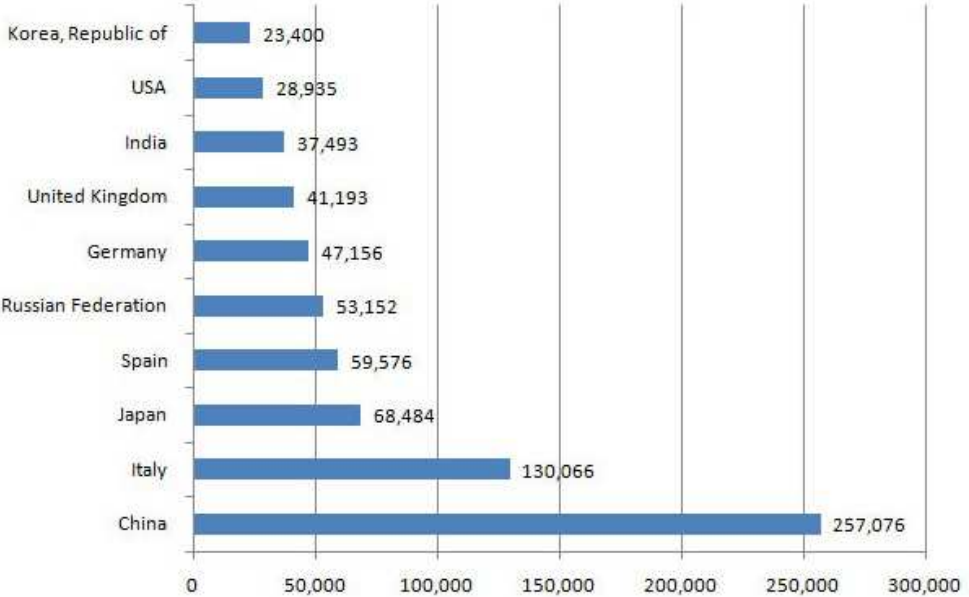
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<sup>7</sup> Standardization and related activities — General vocabulary Eighth edition 2004 © ISO/IEC 2004 available at [www.iso.org](http://www.iso.org)

<sup>8</sup> ISO 9000 Essentials available at [http://www.iso.org/iso/iso\\_9000\\_essentials](http://www.iso.org/iso/iso_9000_essentials)



**Figure 3 ISO 9001 certifications 2009 - Top 10 Countries**



Source: ISO Survey 2009

Moreover, ISO recommends that an organization can invite the end users to give their own feedback in order to audit the quality system such that the company can obtain confidence that it is in the position of delivering products or services that will meet their requirements.

**Table 1 ISO 9000 certifications issued to the Maltese Industry**

	<b>Dec. 2004</b>	<b>Dec. 2005</b>	<b>Dec. 2006</b>	<b>Dec. 2007</b>	<b>Dec. 2008</b>
<b>Malta</b>	230	302	342	349	355

Source: The ISO Survey of Certifications 2008 ISO Central Secretariat

Ultimately, a company may appoint an independent quality system certification body to issue an ISO 9001:2008 certificate of conformity. The alleged credibility of an independent assessor has proven itself as a very popular practice in industry. Subsequently the organization keeps away from auditing its products through the feedback provided by its clients while reducing the frequency or duration of client audits. The certificate can also serve as a business reference between the organization and potential clients, especially when supplier and client are new to each other, or far removed geographically, as in an export context.

## 5 Who are the stakeholders

MAESTRO defines six categories of stakeholders, some of which can become key actors of the project itself. The recognized stakeholders will provide substantial information on the relevance of the project, by providing input about their requirements concerning the situation that the project is about to tackle. The nature of the involvement of some of the stakeholders may vary with that of other stakeholders. The stakeholders' needs should be prioritised and a consensus among them should be sought.

The main classes of stakeholders can be summarised as:

**Public authorities:** The entities related with transport which are authorised to issue directives for the planning and financing of the transport infrastructure. These include European, national government and regional development agencies.

**Operators:** those bodies which provide the transport services and are in a position to collect data related with traffic. Operators may exercise control, within the framework of directives and regulations. These include operators of passenger, freight and emergency services.

**Users:** these make up the foundation for transport management and are the last link in the transport chain. They may be analysed in a collective way (traffic) or as single entities, such as individual drivers or passengers each with their own needs.

**Non-users:** this sub-group accounts for all those who are not directly involved with the project but who are susceptible to its impacts such as environmental impacts and landscaping.

**Product and non-transport service providers:** These kinds of providers include vehicle manufacturers, system integrators and consultants. Service providers could be related to the information infrastructure.

**Research institutes:** the institutes involved in the pre-design of a transport project may have various roles in the process such as in defining the objectives.

### 5.1 *Procedures in the initial evaluation phase*

In this phase the project objectives will be translated into impacts. One will make a first forecast of the impacts to expect, and then evaluate whether the expected impacts justify the P/D implementation. The main steps in this phase are:

- to derive a list of impacts to observe and monitor with the necessary associated indicators;
- to forecast impacts on the basis of the project's functional specification and user expectations assessed during the pre-design stage;
- to choose an appropriate evaluation method;
- to evaluate whether the expectations justify the P/D implementation;
- to establish an evaluation plan for the remainder of the project and search for questions.

## 6 Conclusions

It is an undisputed fact that the MED region has a distinct social, demographic and cultural diversity. In this light it is more challenging to come up with an effective mode of transport which is scalable for each country in the region. The MAESTRO Guidelines supports the pilot projects in the sector of transport within a schema of common implementation framework developed in the previous phase, which framework will be validated by means of experts and key actors.

The Mediterranean region is characterised by its own weather conditions and its climate, and therefore these conditions may be unique to each area. In this light, by abiding and by meeting with the criteria elaborated in the MAESTRO guidelines, the consortium of the LiMIT4WeDA project will develop the optimal transport solution for each region.

The external expertise will be in a position of coming up with a list of indications to be delivered to the phase of pilot projects in order to design the activities consistently with this framework. In this phase the methodology for the design, execution and evaluation of pilots and feasibility studies will be prepared.

## References

"Transport Statistics 2010 " – The National Statistics Office (Malta)

Deway (2010), Community car sharing between individuals, available at <http://www.deways.fr/en/>

European Commission (2010), available at [http://ec.europa.eu/research/environment/newsanddoc/article\\_1707\\_en.htm](http://ec.europa.eu/research/environment/newsanddoc/article_1707_en.htm)

European Commission (2010), available at <http://ec.europa.eu/research/growth/gcc/projects/car-sharing.html>

"Malta in Figures 2010" - National Statistics Office (Malta).

Maltese Law Chapter 499 – Authority for Transport in Malta

Millonig, A, & Gartner, (2011), Identifying motion and interest patterns of shoppers for developing personalized way finding tools, *Journal of Location Based Services*, 5, 1, pp. 3-21, Academic Search Complete, EBSCOhost

Carriage of passengers' operator license (CPOL) guidelines, available at - [http://www.transport.gov.mt/admin/mediacenter/PDFs/1\\_CPOL%20English%20Guideline%20sindd.pdf](http://www.transport.gov.mt/admin/mediacenter/PDFs/1_CPOL%20English%20Guideline%20sindd.pdf)

Porter, C., Suhrbier, J., and Schwartz, W. L. (1999) Forecasting bicycle and pedestrian travel: State of the practice and research needs. *Transportation Research Record*. 1674, Transportation Research Board, National Research Council, Washington, D.C., 94–101.

Richard Katzev (2003) *Analyses of Social Issues and Public Policy*, Car Sharing: A New Approach to Urban Transportation Problems *Public Policy Research*, Vol. 3, No. 1, pp. 65—86

The Economist (2011) Car-sharing revs up Teaming up with the Joneses Two start-ups aim to get car owners to share their vehicles with strangers, available at [http://www.economist.com/node/15954416?story\\_id=15954416/](http://www.economist.com/node/15954416?story_id=15954416/)

Report on Phare and the pre-accession instruments for Cyprus, Malta and Turkey - [http://eur-lex.europa.eu/smartapi/cgi/sga\\_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&nu](http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&nu)

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