ESP N

RIMAP

DELIVERABLE

Project number	112_PR3_08_0477
Project Acronym	RIMAP
Project full title	Rich Internet MAPping tool
Title of deliverable	User and Data Needs and Requirements Report
Deliverable number	D1
Work Package	WP1
Delivery date	22-06-2012

DELIVERABLE PRESENTATION

This deliverable is associated to Work Package 1 Mapping-Tool Analysis: Needs and Requirements of RIMAP project. The aim of this WP is to analyze the needs and requirements of the Mapping-Tool since different points of view:

- Data: Indicators and Geographical Info may be analyzed in order to define how must be shown.
- Users: Is very important to define user capacities in order to develop and easy and friendly tool.

This information will be used to design the architecture of the Mapping-Tool through these actions:

- Selection of platforms and language development.
- Architecture design

Although RIMAP is a web based tool, the effort in developing it cannot be conceived as a web site. This tool is more like software than a web site, so the development has to be executed as software project.

There are some standard methods for software development, in this case, the waterfall model for software development is the procedure chosen in RIMAP for designing the web tool. In this process, the developers follow these phases in order:

- WP1 - Mapping-Tool Analysis: Needs and Requirements
- WP2 - Mapping-Tool Beta Development
- WP3 - Mapping-Tool Coding
- WP4 - Evaluation and Test
- WP5 - Dissemination activities

This document proposes a wireframe of the web mapping tool and, in addition, Use Cases and Scenarios Cases are described. A Use Case is a list of steps, typically defining interactions between a role and a system, to achieve a goal. The actor can be a human or an external system. On this way, the developers foresee how the system reacts when a user is manipulating it and what the results expected are. On the other hand, Scenario Cases describe actions and situation that are more complex and make reference to the Use Cases.

USER REQUIREMENTS REPORT

1. Introduction

Developing an IT project needs some tasks that are focused specifically on identifying, gathering, communicating, and documenting user requirements. Once identified, the user requirements effectively define the basis for developers, testers, and implementers to begin determining the functionality, responsiveness and interoperability required of that system.

Although sometimes is believed that establishing user requirements is useless, there are obvious benefits. These benefits can include increased productivity, enhanced quality of work, reductions in support and training costs and improved user satisfaction.

There are a number of methodologies for identifying such needs. We are just going to point out them here:

- User surveys
- Focus groups
- Interviewing
- Scenarios and use cases / Personas
- Evaluating an existing system

During the project development, we have tried to use two of the methods for laying the user requirements: User surveys and evaluating an existing system. The first one was post-posed by the Commission (However the survey can be found in the Annexes), so we have mainly worked on the second one.

2. Defining the user requirements

As long as the user requirements are defined, some topics should be documented. For example, identification of the range of relevant users and other stakeholders, a clear statement of design goals, the requirements with an indicator of their priority levels, measurable benchmarks against which the emerging design can be tested, etc. It is important to remark that some requirements can be changed as the system is developed if necessary.

A requirement for an IT system specifies what is expected from it. There are many types of these requirements as, for example, a business advantage or spreading information more easily. But all of them can be categorized in four topics:

- Functional Requirements - These are the type of behavior you want the system to perform. Here is important to point "What" is wanted and not "How" it will be.
- Non-functional requirements - They are the restrictions or constraints to be placed on the system and how to build it. Their purpose is to restrict the number of solutions that will meet a set of requirements. Non-functional requirements can be split into two types: performance and development.
- Design Objectives. Design objectives help in selecting a solution from different options when a problem is found. These constraints are more about the interface and they are focused on helping the users using the system.
- Delivery Objectives. Describe any constraints or requirements that have been specified relating to how the system should be delivered.

3. **Evaluating other web mapping tools**

As explained before, one of the methodologies for laying the user requirements of an IT system is the evaluation of an existing system. This action can provide valuable information about the extent to which current systems meet user needs and can identify potential usability problems to avoid in the new system. Useful features identified in a previous system can also be fed into the design process as potential user requirements. Measures of effectiveness, efficiency and satisfaction can be used as a baseline for the new system. To obtain accurate measures a controlled user test should be used, but valuable information can still be obtained from less formal methods of testing.

The call of ESPON collected some websites where other web mapping tools can be found, so we have proceed to the analysis and extract some conclusions from there. Here is the list of the websites analyzed:

- OECD Explorer - http://stats.oecd.org/OECDregionalstatistics/
- ECB: Inflation and the euro -
  http://www.ecb.eu/stats/prices/hicp/html/inflation.en.html
- Indiemapper - http://indiemapper.com/
- Interactive Statistical Atlas of Slovenia - http://www.stat.si/eng/iatlas.asp
- Gapminder - http://www.gapminder.org/world/
- France découverte - http://www.geoclip.fr/danseuse/carto.php?lang=en
- International Human Development Indicators - http://hdr.undp.org/en/data/map/
- Migrant Population Map -
  http://www.ninis.nisra.gov.uk/mapxtreme/InteractiveMaps/A8Migration/atlas.html
- Mapa interactivo de indicadores -
  http://www.guiadelmundo.org.uy/cd/indicators/index.htm

Although the complete report can be found on the annexes, we remark here the main conclusions.

- **The geographical depth of the maps is quite general.** The countries are the geographical depth for almost every web mapping tools studied. There are few that go deeper in administrative organization as provinces or counties, for example.
- **The main language of all them is English.** Mainly, only the webs managed for country institutions have more than one language.
- **Technologies and limitations:** All above web applications (or components of the web applications) are developed using Adobe Flash technologies. It implies the requirement of Adobe Flash plugin installation in the web browser and no operation on certain mobile devices (smartphones, tablets…). Moreover, these web applications do not provide a mobile version to facilitate use from tactile devices.
- **The target market is policy and decision makers.** There are some web mapping tools that are undeveloped or with a low level of information, but the reason is the developer wants to sell a tool, not provide useful information from the generated map.
- **Chart generator is needed over that the mapping tool.** Although, the map generators help to draw a reality, the charting tools help to study it. In addition, the charting tools are more powerful, the users are more used to use them and the data representation are more usable and brought more options in a chart than a map.

- **Printing is useless.** The studied web mapping tools prefer saving an image in the PC than sending it to the printing.
- **Timeline is a must**. If you have temporal series of an indicator, you cannot avoid including an option of "Timeline" in the interface.
- **Predefined indicators are more important than customize the colour scheme.** Although you can use any indicator any time and even change the colours of the maps, the developers believe that is more useful to set some predefined indicators rather colour schemes.
- **Resize the windows and zoom in/out are options present in every web mapping tool.**

4. User requirements

From the analysis of other web mapping tools and from the ESPON's Call, we have identified and grouped the user requirements in four topics:

- Functional Requirements
- Non-functional requirements
- Design Objectives
- Delivery Objectives

In addition, we have categorized the requirement with a priority level, that are explained in the next table:

M	Mandatory requirement. This feature must be built into the final system.
D	Desirable requirement. This feature should be built into the final system unless its cost is too high.
O	Optional requirement. This feature can be built into the final system at the Project Manager's discretion.
E	Possible future enhancement. This feature is recorded here so that the idea is not lost. The decision on whether to include it in the system will depend on progress on the mandatory requirements.

The user requirements for RIMAP are set as follows:

4.1 Functional

These are the type of behavior you want the system to perform. Here is important to point "What" is wanted and not "How" it will be.

1	M	RIMAP should establish a link with the latest version of ESPON 2013 Database
2	O	RIMAP may consider the use of ESPON query functionality for selecting data
3	M	RIMAP will allow users to create visualizations via maps, graphs and time series from ESPON 2013 Database
4	M	RIMAP should be able to visualise the data in the categories: Regional data, urban data, neighbourhood data and world data.
5	M	RIMAP should include the geometries and layers: NUTS0 to NUTS3 geometries, geometries for the urban data, geometries for the neighbourhood and world data, the capital layer.
6	M	All maps made using RIMAP should follow the ESPON map design
7	M	The user should be able to recieve output from the options print, print preview, save/save as, open, export
8	M	The tool should respect the accessibility criteria standars (W3C)
9	O	RIMAP will be accesible in different devices: computers, tablets, mobiles
10	O	RIMAP will be based in Rich Internet Applications (RIA)

4.2 Non-Functional

They are the restrictions or constraints to be placed on the system and how to build it. Their purpose is to restrict the number of solutions that will meet a set of requirements. Non-functional requirements can be split into two types: performance and development.

1	M	RIMAP will be hosted on one of the ESPON available serves and should be available via all the commonly used internet browsers.
2	M	The choice for COTS or Open Source applications should be made in function of the detailed requirements and of technical and financial boundary conditions in order to identify which is the best solution for such a project.
3	D	RIMAP will not be developed in Adobe Flash

4.3 Design

Design objectives help in selecting a solution from different options when a problem is found. These constraints are more about the interface and they are focused on helping the users using the system.

1	M	A default map will be displayed that fits the data selected
2	M	The users should have the option of changing the map view zooming in/out
3	M	A restore option should be available
4	M	The representation and naming countries and regions approved by the ESPON MC shall be used
5	M	The user should have the opportunity to edit the title of the generated map and change the font type, size and colour of all the texts.
6	M	As a default classification for the data displayed in the map, equal interval classification should be used with 6 clases ranging from the minimum to the maximum value available in the data and "no data" should be indicated.
7	M	The default color scheme depends of the kind of values available and should follow the ESPON Mapping guidelines to be made available by ESPON CU.

8	M	The user should have the chance to make changes in the colour scheme from a set of at least 10 different colour schemes to be defined in cooperation with the ESPON CU.
9	M	As a default the capitals should be indicated in the map displayed by their names and a symbol.
10	M	The user should have the opportunity to make some changes in the capitals with at least changes in the font type, font size, colour, symbol, symbol size and colour.
11	M	Restore option should be available.
12	M	As a default the borders should have a fixed setting on thickness and colour of the lines.
13	M	The users should have the opportunity to make some changes in the visualization of the borders changing the thickness and colour
14	M	The user should be able to retrieve information from the map by hovering over it
15	M	The users should be able to make a number of graphs that visualise the data selected in different ways (Distribution of the values including an indication of average value and variation, frequency diagram of the values, scatter diagram of two indicators to be selected including the possibility to add an indicator for the size of the circles in the scatter diagram, bar charts, sectorial diagrams and curves)
16	M	The users should have the possibility to view the changes over time in a map and also graphically when an indicator is available for a time series.
17	M	Redefined study areas, such as the Danube region, NWEurope, Baltic Sea and Mediterranean regions should be able for the users and will be provided by the ESPON CU
18	M	Additional methods for analysing the data should be included (Comparison between two indicators, Comparison of changes between two years, Comparison between various NUTS Systems)
19	M	The interface should be user friendly
20	M	An interactive help function should be available in the Mapping tool to give guidance to the user.
21	M	A separate document explaining the tool and including practical examples should also be available for the users.
22	O	Other file formats for Output may be considered like csv, txt or gif
23	O	RIMAP should always keep users informed about whats going on.
24	O	RIMAP should speak the users' language with words, phrases and concepts familiar to the users.
25	O	RIMAP dialogues should not contain information which is irrelevant or rarely needed.
26	O	RIMAP should help users recognize, diagnose and recover from errors
27	M	RIMAP main language should be English
28	D	RIMAP should have a timeline at the bottom of the map
29	D	RIMAP should be divided in two main sections "Chart" and "Map" generator
30	O	A "fullsize" option should be provided
31	O	An option for viewing Datatables of the selected indicators should be displayed
32	M	A "Help" section should be included
33	D	Selecting different types of charts should be included

4.4 Delivery

Describe any constraints or requirements that have been specified relating to how the system should be delivered.

1	M	RIMAP will be complimentary to the ESPON Online Mapfinder allowing users to access to a fixed set of most relevant ESPON maps
2	M	RIMAP should be developed as a web application.
3	O	The user's target group is mainly policy makers and practitioners, but the tool might be interesting for advanced users like scientist, students and experts.

WEB MAPPING TOOL WIREFRAMING

1. Introduction

User interface design must be focus on the user's experience and interaction. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals. Good user interface design facilitates finishing the task at hand without drawing unnecessary attention to itself. Graphic design may be utilized to support its usability.

The analysis of other web mapping tools has been used to wireframe what the best design is for a tool such as it is has been developed. We have to point out that the design presented here is an early stage of the definitive interface. So the interface can undergo main modifications if necessary.

On the other hand, as it has explained before, Use and Scenario Case are described here for helping the developers to foresee how the system reacts when a user is manipulating it and what the results expected are

2. Web tool wireframe

An early wireframe of the Online Mapping Tool has been designed taking account the analysis detailed above. The screen is divided in several zones:

A: Main area for displaying maps. At this area, the user can do the actions:
- This area can be maximized or minimized for easy viewing.
- Zoom in/Zoom out.
- Ranges representation (minimum six).
- Sensitive: mouse over and click events.

B: Area for the temporary selection of indicators. At this area, the user can do the actions:
- Search indicators by theme, name and relevance.
- Play and stop the representation of the temporal evolution of the selected indicators.
- General or separate (maps/graphs) selection.

C: Auxiliary area for displaying graphics. At this area, the user can do the actions:
- This area can be maximized or minimized for easy viewing.
- Tabs for selecting the chart type (Frequency, distribution, scatter, bar, sectorial or data table representation).
- Ability to configure through the Zone B to provide analysis tools.

D: Bar for selecting geographical areas and levels of the map display. Ability to create a geographical area (usable in the current session).

E: Main menu area. At this area, the user can do the actions:
- General tool settings.
- General view options.
- About Mapping Tool.
- Help and assistance section.

F: Options zone with icon based access. At this area, the user can do the actions:
- Map Style (change line thickness, line color, colors gradation of the map…)
- Print and Print preview
- Save map as image (png, pdf, jpg…)
- Save chart as image (png, pdf, jpg…).
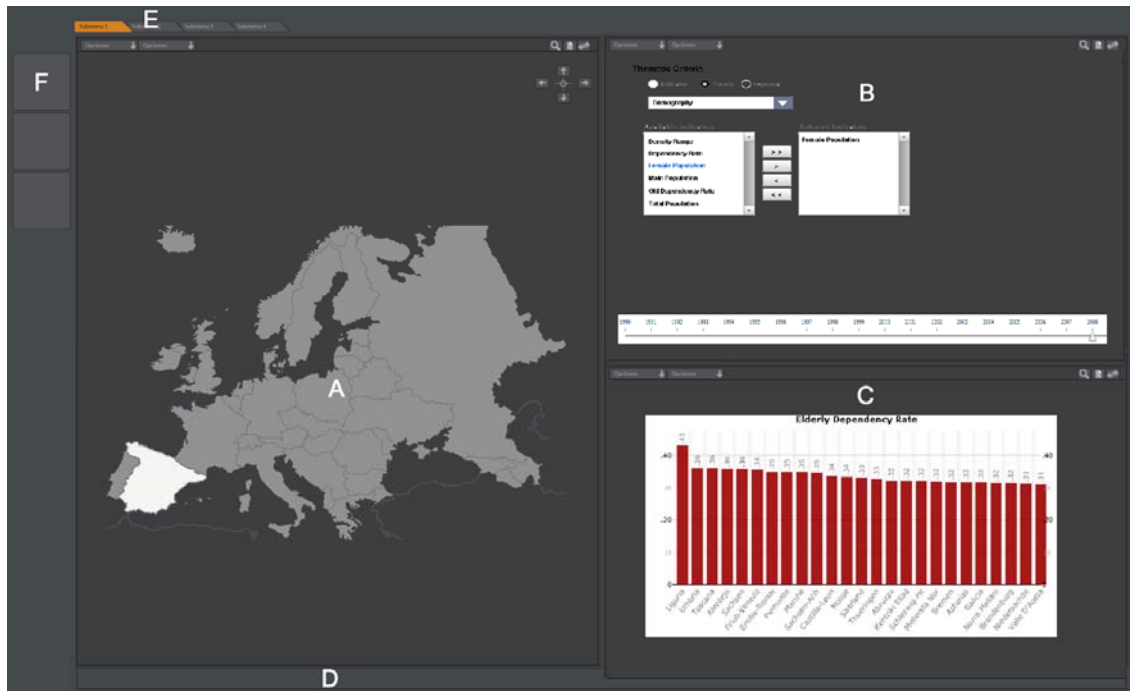
Figure 1 – Mapping Tool Screen Design

3. RIMAP Use Cases

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. The use case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal. Here are detailed Use Cases attending to the design presented before.

Name:	1. RIMAP Tool Access
Date:	26/06/2012
Description: Acceso a la herramienta RIMAP a través de la URL correspondiente.	
Actors: User.	
Preconditions: Having a web browser installed on the Computer/smartphone/tablet that supports HTML5.	
Normal Flow: The user, alter entering RIMAP URL on the web browser, access to the tool with default parameters (indicators, date selection, geographical area and level).	
Alternative Flow:	
Postconditions:	

Name:	2. Change Map Style
Date:	26/06/2012
Description: Change the thickness and line color, and type, size and font color on the map and tonal gradations of the map.	
Actors: User.	
Preconditions: 1. RIMAP Tool Access	
Normal Flow: On the map menu, select "Style" to open the style submenu, showing the default settings for the thickness and line color and the type, size and font color of the map. On "Style" submenu, modify the desired parameters. Press "Accept".	
Alternative Flow:	
Postconditions:	

Name:	3. Selecting Indicators Map
Date:	26/06/2012

Description:
   Change the selection of indicators to show on the map.

Actors:
   User.

Preconditions:
   1. RIMAP Tool Access

Normal Flow:
   1. On the map menu, select "Indicator Selector" to open the submenu, which lists selected indicators currently show on the map (default indicators).
   2. On the "Indicator Selector" submenu, change the selection of indicators.
   3. Press "Accept".

Alternative Flow:

   4. If the selected indicators have no data stored for the year selected by default, a notice will appear, that will take us directly to "Temporal Selector" submenu: 4. Temporary Selection Map.

Postconditions:
   The chart data is also updated.

Name:	4. Temporary Selection Map
Date:	26/06/2012

Description:
   Change the year to show on the map.

Actors:
   User.

Preconditions:
   1. RIMAP Tool Access
   3.Selecting Indicators Map (or maintaining the default selection)

Normal Flow:

   1. On the map menu, select "Termporary Selector" to open the submenu, where is selected the default year that is currently being displayed on the map.
   2. On the "Temporal Selector" submenu, change the year (you can select Orly a year with data for selected indicators).
   3. Press "Accept".

Alternative Flow:

Postconditions:
   The chart data is also updated.

Name:	5. Selecting Geographic Area Map
Date:	26/06/2012

Description:
   Change the geographic area displayed in the map.

Actors:
   User.

Preconditions:
   1. RIMAP Tool Access

Normal Flow:
Select from the drop down button the geographical area to be shown on the map.

Alternative Flow:

Postconditions:
   The chart data is also updated.

Name:	6. Map Level Selection
Date:	26/06/2012

Description:
   Change the level to display on the map

Actors:
   User.

Preconditions:
   1.   RIMAP Tool Access
   2.   Selecting Indicators Map (or maintaining the default selection)

Normal Flow:

   1.   Select at the layer bar the level to be shown on the map.

Alternative Flow:

   1.   If the selected indicators have no data stored for the selected level, a notice will appear, indicating that failed to change the level of the map for this reason.

Postconditions:
   The chart data is also updated.

Name:	7. Print Map
Date:	26/06/2012
Description: Preview and print the map on display.	
Actors: User.	
Preconditions: 1. RIMAP Tool Access	
Normal Flow: 1. On the map menu, select "Print". 2. On the print preview click "Accept" to print.	
Alternative Flow:	
Postconditions:	

Name:	8. Save Map
Date:	26/06/2012
Description: Save the current map in pdf, jpg, png …	
Actors: User.	
Preconditions: 1. RIMAP Tool Access	
Normal Flow: 1. On the map menu, select "Save". 2. Select the desired format and click "Save" to store the image on the Computer.	
Alternative Flow:	
Postconditions:	

Name:	9. Define Geographic Area Map
Date:	26/06/2012

Description:
   The user defines a geographical area.

Actors:
   User.

Preconditions:
   1. RIMAP Tool Access

Normal Flow:
   1. Press "Add Geographic Area" button.
   2. Indicate the name (on the opened pop-up) to identify the geographical area and press "Accept".
   3. Select the subareas of the map for defining the areas that make up the geographical area.
   4. Press "Finish".

Alternative Flow:

Postconditions:
   The new geographical area is added to the available list of them. It will be available during the current session.

Name:	10. Unlink Data Graphics
Date:	26/06/2012

Description:
   Unlink the data represented on the graphs (respect to the map).

Actors:
   User.

Preconditions:
   1. RIMAP Tool Access

Normal Flow:
   1. On the Graphics menu, select "Config".
   2. On the open submenu, unckeck "Synchronize Data Maps" (which is marked as default).

Alternative Flow:

Postconditions:
   In use cases 3, 4, 5 and 6 will cease to update the information of the graphs.

Name:	11. Selecting Indicators Graphs
Date:	26/06/2012

Description:
    Change the selection of indicators to show on the graph.

Actors:
    User.

Preconditions:
    1. RIMAP Tool Access
    10. Unlink Data Graphics

Normal Flow:
    1. On the graphs menu, select "Indicator Selector".
    2. On the submenu, change the selection of indicators.
    3. Press"Accept"

Alternative Flow:

Postconditions:

Name:	12. Temporary Selection Graph
Date:	26/06/2012

Description:
    Change the year to shown on the graph.

Actors:
    User.

Preconditions:
    1. RIMAP Tool Access
    10. Unlink Data Graphics
    3. Selecting Indicators Map (or maintaining the default selection)

Normal Flow:
    1. On the graph menu, select "Temporal Selector" to open the submenu, where is selected the default year that is currently being displayed on the map.
    2. Change the year to show (only years with data for selected indicators).
    3. Press "Accept".

Alternative Flow:

Postconditions:

Name:	13. Layers Selection Graph
Date:	26/06/2012

Description:
    Select the level (or levels) geographical to represent in graphs.

Actors:
    User.

Preconditions:
    1. RIMAP Tool Access
    10. Unlink Data Graphics
    11. Selecting Indicators Graphs (or maintaining the default selection)
    12. Temporary Selection Graph (or maintaining the default selection)

Normal Flow:
    1. On the graph menu, select "Layer Selector" to open the submenu, where is selected geographic level currently being represente on the graph.
    2. Select the desired geographical level to be represented or select two geographical levels to be compared (you can select only those with data for the selected indicator).
    3. Press "Accept".

Alternative Flow:
        2.   If you select two geographic levels for comparison, it will be only possible to have a selected indicator. If not, will launch a warning.

Postconditions:

Name:	14. Print Graph
Date:	26/06/2012

Description:
    Preview and print the graph on display.

Actors:
    User.

Preconditions:
    1. RIMAP Tool Access

Normal Flow:
    1.   On the graph menu, select "Print".
    2.   In print preview, press "Accept" to print.

Alternative Flow:

Postconditions:

Name:	15. Save Graph
Date:	26/06/2012
Description: Save the current chart in pdf, jpg, png …	
Actors: User.	
Preconditions: 1. RIMAP Tool Access	

Normal Flow:
    1.   On the graph menu, select "Save".
    2. Select the desired format and click "Save" to store the image on the computer.	

Alternative Flow:	
Postconditions:	

Name:	16. Temporal Evolution
Date:	26/06/2012
Description: Play or stop the representation (maps and graphs) of the temporal evolution of the indicators selected	
Actors: User.	
Preconditions: 1. RIMAP Tool Access	
Normal Flow: On the map menu, select "Play" or "Stop".	
Alternative Flow:	
Postconditions:	

4. RIMAP Scenario Cases

In computing, a scenario is a narrative, which most commonly describes foreseeable interactions of user roles and the technical system, which usually includes computer hardware and software.

Types of scenario in system development

Many types of scenario are in use in system development.

- Story: "a narrated description of a causally connected sequence of events, or of actions taken".
- Situation, Alternative World: "a projected future situation or snapshot". This meaning is common in planning, but less usual in software development.
- Simulation: models to explore and animate 'Stories' or 'Situations', to "give precise answers about whether such a scenario could be realized with any plausible design" or "to evaluate the implications of alternative possible worlds or situations".
- Storyboard: a drawing, or a sequence of drawings, used to describe a user interface or to tell a story. This meaning is common in Human–computer interaction to define what a user will see on a screen.
- Sequence: a list of interactive steps taken by human or machine agents playing system roles. The many forms of scenario written as sequences of steps include Operational Scenarios, Concepts of Operations, and Test Cases.
- Structure: any more elaborately-structured representation of a scenario, including Flowcharts, UML/ITU 'Sequence Charts', and especially in software development Use cases.

For RIMAP, we have chosen the sequence scenario because it is the most representative in this stage of the tool development.

Test case id	1
Situation	A MEP (Member of the European Parliament) wants to analyze the evolution of GDP in some Mediterranean regions in the last 10 years
Date	20/6/2012
Actors	MEP
Assumptions	1. Access to the RIMAP URL [Use Case - 1] 2. Basic expertise of the platform
Steps to be executed	1. Selection of NUTS level (in this case NUTS2) [User Case - 6] 2. Selection of the geographical areas studied by the pointer (in this case, Catalonia, Languedoc, Provence and Liguria) [Use case - 9] 3. Zoom in the areas to study 4. Selecting the desired indicator (GPD in the region) [Use case - 3] 5. Selecting the desired time range (2000-2010) through timeline [Use case - 4] 6. Download the maps generated in the years (2000, 2005 and 2010) [Use case - 8]
Alternative steps	
Postconditions	

Test case id	2
Title	An economist wants to compare two indicators, Unemployment and Research innovation, through time and in the ESPON Area. For doing that he wants to get the ratio between them and get a choropleth map from different NUTS levels
Date	19/6/2012
Actors	Economist
Assumptions	1. Access to the RIMAP URL [Use Case - 1] 2. Basic expertise of the platform
Steps to be executed	1. Selection of NUTS0 [User Case - 6] 2. Selection of Study Area to ESPON area [Use Case - 5] 3. Selection of the first indicator through the path: Economy -> Employment -> Unemployment Rate [Use Case - 3] 4. Selection of the second indicator through the path: Economy -> Research and Innovation -> European Patent Applications [Use Case - 3] 5. Selection of the type of map: Ratio [Use Case - 3] 6. Slide the arrow of the timeline to the year 2000 [Use case - 4] 7. Push the play button[Use case - 4] 8. Change the NUTS0 to NUTS2 [User Case - 6] 9. 10. Selection of the Classes Number to 10 [User Case - 2] 11. Slide the arrow of the timeline to the year 2000 12. Push the play button 13. The economist wants to download the map generated in the year 2007 [Use Case – 8]
Alternative steps	
Postconditions	

Test case id	3
Title	A journalist wants to get a map that shows the richer zones in Europe.
Date	18/6/2012
Actors	Journalist – Basic user
Assumptions	1. Access to the RIMAP URL [Use Case - 1] 2. Basic expertise of the platform
Steps to be executed	1. Selection of Study Area to EU27 area [Use Case - 5] 2. Selection of NUTS2 [User Case - 6] 3. Selection of the indicator through the path: Social Affairs – Disposable income per inhabitant [Use Case - 3] 4. Slide the arrow of the timeline to the year 2011 [Use case - 4] 5. Set the number of Classes Number to 8 [User Case - 2] 6. Download the map generated [Use Case – 8]
Alternative steps	
Postconditions	

Test case id	4
Title	A Member of EU Commision wants to know the multimodal accessibility covering France and Germany
Date	18/6/2012
Actors	Member of EU Commision
Assumptions	1. Access to the RIMAP URL [Use Case - 1] 2. Basic expertise of the platform
Steps to be executed	1. Selection of NUTS level (in this case NUTS0). [User Case - 6] 2. Selection of the geographical areas (France and Germany) [Use case - 9] 3. Selection of NUTS level (in this case NUTS2) [User Case - 6] 4. Selection of the indicator through the path: Transport –> Accesbility –> Multimodal Potencial Accesibility [Use Case - 3] 5. Slide the arrow of the timeline to the year 2011 [Use case - 4] 7. Set the number of Classes Number to 10 [User Case - 2] 6. Download the map generated [Use Case – 8] 7. Unlink the graph and chart generator [User Case - 10] 8. Selection of another indicator on the chart through: Transport –> Accesbility –> Multimodal Potencial Relative Change [Use Case - 11] 9. Download the graph [Use Case – 15]:
Alternative steps	
Postconditions	

ANNEX I – Web Mapping Tools Report

1. Introduction

One of the methodologies for laying the user requirements of an IT system is the evaluation of an existing system. Evaluating an existing system can provide valuable information about the extent to which current systems meet user needs and can identify potential usability problems to avoid in the new system. Useful features identified in a previous system can also be fed into the design process as potential user requirements. Measures of effectiveness, efficiency and satisfaction can be used as a baseline for the new system. To obtain accurate measures a controlled user test should be used, but valuable information can still be obtained from less formal methods of testing.

The call of ESPON collected some websites where other web mapping tools can be found, so we have proceed to the analysis and extract some conclusions from there. The websites analyzed are:

1. OECD Explorer - http://stats.oecd.org/OECDregionalstatistics/

2. ECB: Inflation and the euro - http://www.ecb.eu/stats/prices/hicp/html/inflation.en.html

3. Indiemapper - http://indiemapper.com/

4. Interactive Statistical Atlas of Slovenia - http://www.stat.si/eng/iatlas.asp

5. Gapminder - http://www.gapminder.org/world/

6. France découverte - http://www.geoclip.fr/danseuse/carto.php?lang=en

7. International Human Development Indicators - http://hdr.undp.org/en/data/map/

8. Migrant Population Map - http://www.ninis.nisra.gov.uk/mapxtreme/InteractiveMaps/A8Migration/atlas.html

9. Mapa interactivo de indicadores - http://www.guiadelmundo.org.uy/cd/indicators/index.htm

2. Web analysis

Title	OECD Explorer		
URL	http://stats.oecd.org/OECDregionalstatistics/		
Languages	English		
Target market	Policy and decision makers, teachers but also the informed citizens		
Geographical depth	☐ Local	☐ National	☐ Continental
	☒ Department	☐ Regional	
Geographical data	☒ Regional	☐ Country	
Data output	☒ Maps	☒ Charts	☒ Table
Types of charts	☒ Linear chart	☒ Pie chart	☒ Bar chart
Types of indicators	☐ Economic	☒ Demographic	
	☐ Health	☐ Educational	
Basic actions	☐ Print	☐ Send	☒ Resize
	☐ Save	☒ Load external data	☒ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☒ Movement arrows		
	☒ Predefined color schemes		
	☒ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	This web mapping tool is the most complete of any we have reviewed. Although this website is only used for mapping demographic indicators, the OCDE has another websites which use the same tool for showing information of other topics. The design recalls to a Windows OS' software, this helps the usability and the user interaction. The interface is divided in three main areas: On the top is located the menu bar, in the middle are displayed the data, maps and graphs and on the bottom is the timeline. We have to remark that using some tabs on the graphs is very elegant option. In addition, the options for resizing the three graphs are very useful if the user wants to focus his work on the maps or the charts. Finally, the customization for displaying the charts and maps is very strong with some colour schemes and more options as changing the value of the percentiles.		

Title	ECB: Inflation and the euro		
URL	http://www.ecb.eu/stats/prices/hicp/html/inflation.en.html		
Languages	English		
Target market	Economists and politicians		
Geographical depth	☐ Local	☒ National	☐ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☐ Regional	☒ Country	
Data output	☒ Maps	☒ Charts	☒ Table
Types of charts	☒ Linear chart	☐ Pie chart	☒ Bar chart
Types of indicators	☒ Economic	☐ Demographic	
	☐ Health	☐ Educational	
Basic actions	☐ Print	☐ Send	☒ Resize
	☐ Save	☐ Load external data	☐ Download images
	☐ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☐ Movement arrows		
	☐ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	The main objective of this web mapping tool is showing the evolution of an economic indicator (Inflation) that is the reason of its limited options. The tool divides the screen in four areas (A European map and three graphs) and a timeline on the bottom. We can only add two countries for comparison (EU and a single country) and no options for exporting the graphs and data are available, so this tool is only thought for visualization of data.		

Title	Indiemapper		
URL	http://indiemapper.com/		
Languages	English		
Target market	General public		
Geographical depth	☐ Local	☐ National	☒ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☐ Regional	☒ Country	
Data output	☒ Maps	☒ Charts	☐ Table
Types of charts	☐ Linear chart	☐ Pie chart	☐ Bar chart
Types of indicators	☐ Economic	☒ Demographic	
	☐ Health	☐ Educational	
Basic actions	☐ Print	☐ Send	☐ Resize
	☒ Save	☒ Load external data	☒ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☐ Predefined maps and charts		
	☐ Movement arrows		
	☒ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☐ Timeline		
Usability and comments	Indiemapper is conceived for designing customized web maps. This tool has an austere interface and is quite complicated using it without a guide. The screen is divided in three areas; the largest contains the map which has with multiple options on the left. However, the tool seems middle made, with the apparition of strange tables referencing the database which are difficult to understand for the standard user. Thus, it is hard to realized what are the possibilities of this tool, the focus is more in the representation of data that attacking a database continuously. The geographical depth that is shown on it and the way the statistical information is represented is quite poor. On the other hand, the countries are drawn as freehand, not exact.		

Title	Interactive Statistical Atlas of Slovenia		
URL	http://www.stat.si/eng/iatlas.asp		
Languages	English and slovak		
Target market	Regional policy makers		
Geographical depth	☐ Local	☒ National	☐ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☒ Regional	☐ Country	
Data output	☒ Maps	☒ Charts	☐ Table
Types of charts	☐ Linear chart	☐ Pie chart	☒ Bar chart
Types of indicators	☒ Economic	☒ Demographic	
	☒ Health	☒ Educational	
Basic actions	☐ Print	☐ Send	☒ Resize
	☒ Save	☐ Load external data	☒ Download images
	☒ Zoom	☐ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☒ Movement arrows		
	☐ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	This web mapping tool is conceived for displaying statistical information from a government. There are available many kinds of indicators such demographic and economics, but this platform can only display one each time. The screen is divided in three main areas: A central area with a map of Slovenia, a right column with geographical information and a timeline and another information area at the bottom. The main function of this web mapping tool is displaying rankings and heat areas from the indicator selected. This tool is very simple and very intuitive but it cannot generate any kind of chart or table so it is complicated finding out correlations between them. On the other hand, there is no choice for labelling the regions/municipalities, so for using the mapping tool handily the user have to know the Slovenian administration.		

Title	Gapminder		
URL	http://www.gapminder.org/world/		
Languages	English		
Target market	General public		
Geographical depth	☐ Local	☐ National	☒ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☐ Regional	☒ Country	
Data output	☒ Maps	☒ Charts	☐ Table
Types of charts	☐ Linear chart	☒ Pie chart	☐ Bar chart
Types of indicators	☒ Economic	☒ Demographic	
	☒ Health	☒ Educational	
Basic actions	☐ Print	☐ Send	☒ Resize
	☐ Save	☐ Load external data	☐ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☐ Movement arrows		
	☐ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☐ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	Gapminder was acquired by Google in March 2007. The objective of this tool is the development of an easy platform for the displaying and visualization of statistical information. The interface is designed for the data representation emphasis over any other consideration; in fact the only options available are the chance of choosing chart/map. We have to remark that map tool is the less developed used for showing the population growth. However, this tool is very powerful on graph generation in a very easy way. The user can choose two indicators and check how they evolve through the time. On the other hand, the options for share/export are nonexistent, only offering a shorten URL for this matter.		

Title	France découverte		
URL	http://www.geoclip.fr/danseuse/carto.php?lang=en		
Languages	English and French		
Target market	General public		
Geographical depth	☒ Local	☒ National	☐ World
	☒ Department	☐ Regional	☐ Continental
Geographical data	☒ Regional	☒ Country	
Data output	☒ Maps	☒ Charts	☒ Table
Types of charts	☐ Linear chart	☐ Pie chart	☒ Bar chart
Types of indicators	☒ Economic	☒ Demographic	
	☐ Health	☐ Educational	
Basic actions	☒ Print	☐ Send	☐ Resize
	☒ Save	☐ Load external data	☒ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☒ Movement arrows		
	☐ Predefined color schemes		
	☐ Custom color schemes		
	☒ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☐ Timeline		
Usability and comments	Geoclip has the first sin of Usability: The interface has some texts in French although we have chosen English as language option. This tool has an austere design but effective. Maybe, the interface should be improved because, in the first insight, this tool is overwhelming and difficult to understand. Nevertheless, it is obvious this is a powerful tool conceived for showing detailed statistic information through different Administration levels. Geoclip is a tool planned for working deeply with it, showing data tables and letting the user to make some simple mathematic operations with them. Maybe, the word for this is rigor, a powerful database needs an exact tool for representing the information, but the learning curve for Geoclip might be too high.		

Title	International Human Development Indicators		
URL	http://hdr.undp.org/en/data/map/		
Languages	English, French and Spanish		
Target market	General public		
Geographical depth	☐ Local	☐ National	☒ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☐ Regional	☒ Country	
Data output	☒ Maps	☒ Charts	☒ Table
Types of charts	☒ Linear chart	☐ Pie chart	☒ Bar chart
Types of indicators	☒ Economic	☒ Demographic	
	☒ Health	☒ Educational	
Basic actions	☐ Print	☐ Send	☒ Resize
	☒ Save	☐ Load external data	☒ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☒ Movement arrows		
	☒ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	IHDI has been developed by Statplanet. This web mapping tool is quite simple in first insight, but if the user work more deeply with it, he would realize it has more potential. The screen has two main sections providing a map and a chart generator. As the map only has the choice of selecting an indicator each time, the chart generator is richer for comparing and providing data. In fact, the chart generator has available more indicators than the mapping tool so it is more useful for the user.		
	On the other hand, there are some issues related with the design of its interface, mainly about the options of the mapping and charting tool. Although they are separated, the user could be confused about which affect one or another. In addition, there are too many options and that's why the tools should be divided in two screens.		

Title	Migrant Population Map		
URL	http://www.ninis.nisra.gov.uk/mapxtreme/InteractiveMaps/A8Migration/atlas.html		
Languages	English		
Target market	General public		
Geographical depth	☒ Local	☐ National	☐ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☒ Regional		☐ Country
Data output	☒ Maps	☒ Charts	☐ Table
Types of charts	☐ Linear chart	☐ Pie chart	☒ Bar chart
Types of indicators	☐ Economic		☒ Demographic
	☐ Health		☐ Educational
Basic actions	☒ Print	☐ Send	☐ Resize
	☒ Save	☐ Load external data	☐ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☐ Movement arrows		
	☐ Predefined color schemes		
	☐ Custom color schemes		
	☐ Cartographic information		
	☒ Show information in tooltip when mouse is over the object		
	☒ Timeline		
Usability and comments	This is an inefficient and confusing mapping tool. First of all, the user cannot know which the geographical scope of the map is. In the interface, it is pointed out and explained the "A8 Countries", but the map seems to refer to a specific region, North Ireland, which is not included in this group, so what is this all about? On the other hand, the design is austere with a very poor mapping and charting generator in which the user can only select an indicator each time. The map is drawn freehand, though the option to see a cartographic image of a specific municipality is provided. The problem is this real map (a JPG image) doesn't fit the other, so more confussion is added.		

Title	Mapa interactivo de indicadores		
URL	http://www.guiadelmundo.org.uy/cd/indicators/index.htm		
Languages	Spanish		
Target market	General Public		
Geographical depth	☐ Local	☒ National	☐ World
	☐ Department	☐ Regional	☐ Continental
Geographical data	☐ Regional		☒ Country
Data output	☒ Maps	☐ Charts	☒ Table
Types of charts	☐ Linear chart	☐ Pie chart	☐ Bar chart
Types of indicators	☒ Economic		☒ Demographic
	☒ Health		☒ Educational
Basic actions	☐ Print	☐ Send	☐ Resize
	☐ Save	☐ Load external data	☐ Download images
	☒ Zoom	☒ Help	☐ Other
Other information	☒ Predefined maps and charts		
	☒ Movement arrows		
	☒ Predefined color schemes		
	☒ Custom color schemes		
	☐ Cartographic information		
	☐ Show information in tooltip when mouse is over the object		
	☐ Timeline		
Usability and comments	The data of "Mapa de Interactivo de Indicadores (Interactive Map of Indicators)" are taken from the World Bank database "World Development Indicators". MII has a main screen which invites the user to select between the map or the chart generator. This is an error of design. As it is that the web mapping tool has not a help section, so sometimes is difficult to use it. For example, sometimes some indicators cannot be selected and no explanation is provided, so the user cannot understand what is happening. In addition, the chart generator is rambling and poor, so it is difficult using it for generating pertinent chart. On the other hand, the map generator is quite simple to use and it only has the option of choosing an indicator each time. The map options are quite interesting and simple to use, but neither the chart nor the maps can be exported.		

3. Conclusions

- **The geographical depth of the maps is quite general.** The countries are the geographical depth for almost every web mapping tools studied. There are few that go deeper in administrative organization as provinces or counties, for example.

- **The main language of all them is English.** Mainly, only the webs managed for country institutions have more than one language.

- **Technologies and limitations:** All above web applications (or components of the web applications) are developed using Adobe Flash technologies. It implies the requirement of Adobe Flash plugin installation in the web browser and no operation on certain mobile devices (smartphones, tablets…). Moreover, these web applications do not provide a mobile version to facilitate use from tactile devices.

- **The target market is policy and decision makers.** There are some web mapping tools that are undeveloped or with a low level of information, but the reason is the developer wants to sell a tool, not provide information.

- **Chart generator is needed over that the mapping tool.** Although, the map generators help to draw a reality, the charting tools help to study it. In addition, the charting tools are more powerful, the users are more used to use them and the data representation are more usable and brought more options in a chart than a map.

- **Printing is useless.** The web mapping tools studied prefer saving an image in the PC than sending it to the printing.

- **Timeline is a must**. If you have temporal series of an indicator, you cannot avoid including an option of "Timeline" in the interface.

- **Predefined indicators are more important than customize the colour scheme.** Although you can use any indicator any time and even change the colours of the maps, the developers believe that is more useful to set some predefined indicators rather colour schemes.

- **Resize the windows and zoom in/out are options present in every web mapping tool.**

DELIVERABLE

Project number	112_PR3_08_0477
Project Acronym	RIMAP
Project full title	Rich Internet MAPping tool
Title of deliverable	Governance structure, communication flow and methods. QUALITY PLAN
Deliverable number	D2
Work Package	WP0
Delivery date	22-06-2012

This deliverable is associated to Work Package 0 Coordination and Management of RIMAP project. The aim of this WP is to establish an effective coordination and decision structure to adequately address the following objectives:

- Assure the execution of work packages and deliverables in terms of execution time, cost and adequate quality.
- Specify project objectives to be achieved within the estimated time and cost frame.
- Ensure communication between ESPON and external.
- Organization and coordination of project start, meetings and workshops.
- Coordination of networking activities.
- Manage knowledge and promoting gender equality in the Project.

In order to fulfill with these objectives the project requires an efficiently Governance Structure. After negotiation process ESPON CU exposed that the management structure might be exaggerated considering that only one partner is involved. A simplified management structure is presented.

A governance structure is established for an effective project direction and management. This structure establishes three pillars of management:

- Project Technical Management
- Financial and Administrative Management
- Communication manager

1. **Project Technical Management (Project coordinator)**
   a. Role and Responsibilities

   - To act as direct contact with ESPON CU
   - To organise the information flow and methods between committees to ensure consistency.
   - To review the Work Plan of the different WP's and to suggest changes if appropriate and to agree the final Work Plan.
   - To follow up the development of every WP, according to the milestones established in the Work Plan.
   - To review Deliverables, done by the WP leaders for approval before sending them to the ESPON.
   - To assist WP leaders if some difficulties arise.
   - To establish and prepare the coordination meetings agendas
   - To establish the risk assessment and contingency plan.

   b. WPs LEADERS

   - To review initially the Work Plan of the WP's. To suggest changes if appropriate and to agree final WP plans.
   - To prepare the final deliverables of the WP's and to submit them to the ESPON CU

- To introduce appropriate corrections if necessary.
- To follow up the development of their WP, according to the Milestones established in the Work Plan.
- To review deliverables done at Task Level and to include technical information in the WP deliverable.
- To assure the feedback between WP's.

2. Financial and Administrative Management
a. Role and Responsibilities

- To approve periodic technical reports and financial reports.
- To approve the exploitation and dissemination plan.
- To approve the gender actions
- To approve the overall project Work Plan and Budget
- To monitor the project progress and revision of the achievements through the milestones and risk assessment.
- To approve the quality of key critical deliverables, as defined in the Work Plan, before sending to the ESPON CU.

3. Communication manager.
a. Role and Responsibilities

- To develop the dissemination plan
- To review and coordinate dissemination actions carried out within the project
- To manage publications that arises from the project.

```
┌─────────────────────────────┐              ┌─────────────────────┐
│   Project Technical         │              │                     │
│   Coordinator          ────────────▶       │   ESPON             │
│   SERGIO MUÑOZ              │              │   CU AND            │
└─────────────────────────────┘              │   MC                │
                                              └─────────────────────┘
```

```
┌─────────────────────────────┐
│   Financial /Administrative │
│   Manager                   │
│   IGNACIO BUENO             │
│   PATRICIA GALISTEO         │
└─────────────────────────────┘

┌─────────────────────────────┐
│   FIRST LEVEL               │
│   CONTROLLER                │
│   Appointing Russell Bedford│
└─────────────────────────────┘
```

```
┌──────────────────────┐   ┌──────────────────────────┐   ┌──────────────────────┐
│  WP Coordination     │   │  WP Activity (wp 1-2-3-4)│   │  WP Dissemination    │
│  Leader: Sergio Muñoz│   │  Leader: Sergio Muñoz /  │   │  Leader: Patricia    │
│  Ignacio Bueno       │   │  Lucía Irusta            │   │  Galisteo            │
└──────────────────────┘   └──────────────────────────┘   └──────────────────────┘
```
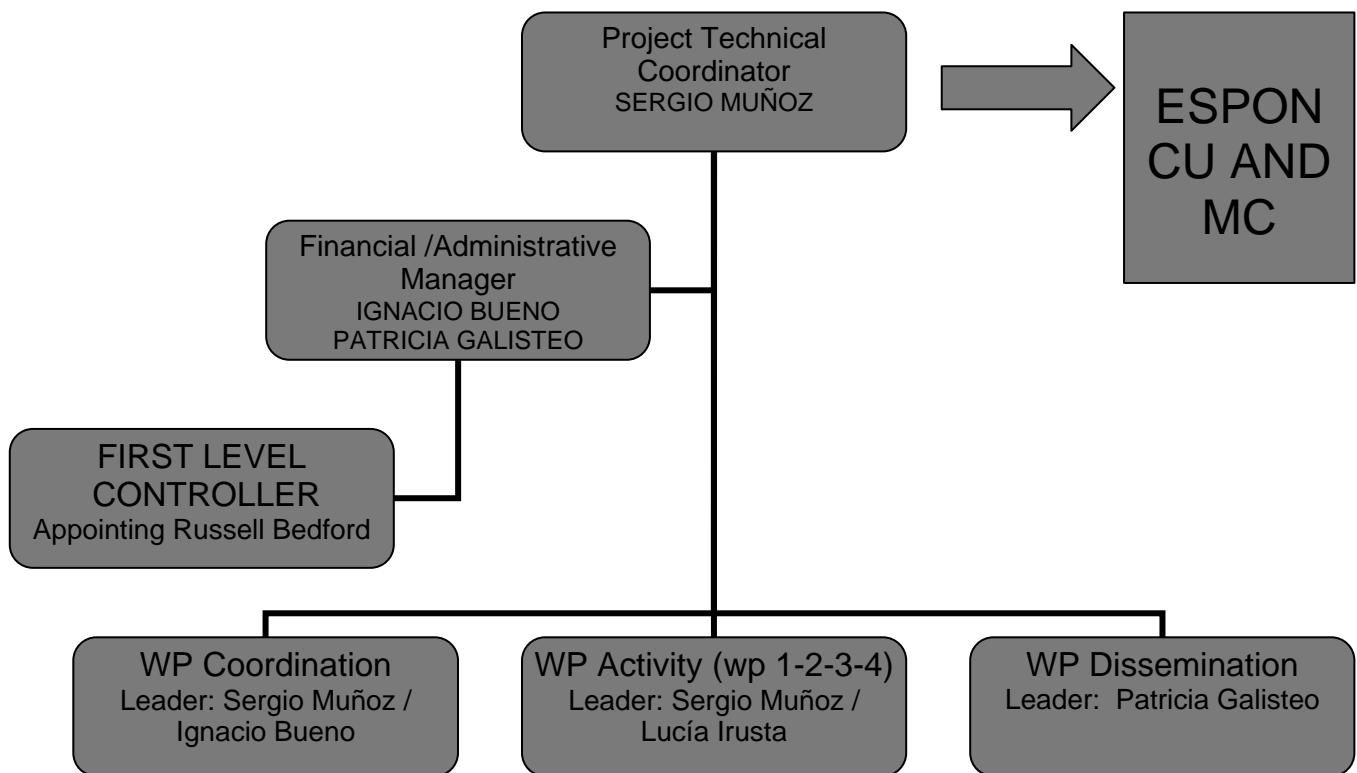
Project Governance Framework

Financial Flow

The financial manager will be in charge of supporting documentation for all expenditure, income and revenue for the project as reported to the ESPON Coordination Unit, such as tender documents, invoices, purchase orders, proof of payments, salary slips, time sheets and any other documents used for the calculation and presentation of costs. This documentation shall be clear, precise and effective.

The way to submit the reports to the ESPON CU will be implemented taking into account the ESPON CU procedures. This procedure is easier in the sense that we haven't got a consortium:

- Financial manager collect all financial documents related to the project and check them.
- When the progress report is compiled the Lead Partner's first level controller performs the checks on Lead Partner's activities and expenditure.
- Taking into account that the Lead Partner should ensure that the expenditure presented has been incurred for the purpose of implementing the operation and corresponds to the activities of the project controller of the LP therefore include a verification of how the lead beneficiary has complied with these obligations.
- For the audit trail the financial manager retains copies of the progress reports.
- The Lead Partner submits the Project Progress Report to the ESPON CU, who checks it and if necessary sends requests for clarification to the Lead Partner.
- Once all points have been clarified, the Project Progress Report is approved by the ESPON CU and sent to the Managing Authority.
- The Managing authority sends it to the Certifying Authority.
- The Certifying Authority executes payment to Lead Partner.
- Every proof of payment and progress report will be kept in order to facilitate the audit trail.

The diagram below describes the financial flow:

Certifying Authority
(CA)

CA approves/rejects the PR. If approved, payment order is prepared and transferred to the LP. If rejected, PR is sent back to MA/CU.

Managing Authority
(MA)

MA approves the PR and sends it to the CA. If MA rejects, PR is sent back to CU.

Coordination Unit (CU)

Payment Report (PR) monitored by a Project Expert and a Financial Expert of the CU

Lead Partner (LP) /LP's
first controller

Communication Flows

The communication flow will be bottom-up and top-down through the typical communication methods, such as meetings, e-mail, phone, fax, skype, etc. In particular, a cooperative working method, using the project website will be established. For this also a project management software system will be acquired and made available for the project.

<u>Meetings</u>

- Kick-off meeting: the coordinator with ESPON Financial and Project Officer
- Internal meetings (when necessary)
- Final ESPON meeting

<u>Digital Project Portal</u>
To ensure an efficient management, an interactive web-site dedicated to the coordination of RIMAP project will be developed. This internet site is secured.
The ESPON representative will be able to access on-line the official documents through this website and will be able to follow more easily the project progress.
A public web-site will also be implemented and referenced for the dissemination of the results.

<u>Reporting and progress monitoring</u>
Monitoring of the progress of each task will be carried out by the WP-leaders, by checking the status of related deliverables. WP-leaders will check progress by communication with the task leaders and the relationship among tasks, and will communicate this to the PC. The PC will monitor overall project progress. Internal meetings will be used to inform all the WP leaders of progress. At each milestone in the project, there will be a review of progress by the project coordinator.
There will be regular progress reports every 6 months which will contain the detailed financial deliveries of the project. They will be validated by the First Level Control appointed.
Certificate on financial statements will be also reported.

Reporting period 1 → 08/02/2012 – 31/07/2012
Reporting period 2 → 01/08/2012 – 31/01/2013
Reporting period 3 → 01/02/2013 – 31/07/2013
Reporting period 4 → 01/08/2013 – 31/03/2014

Significant Risks and Contingency Plans

In term of homogenisation of the quality of results, a quality management role has been defined in the day-to-day management of the project. In more details, Quality will be followed through several indicators: planning, milestones, reports and deliverables, and thanks to dedicated templates and methodologies.

To avoid the negative effects of technical and non-technical risks, a Project Risk Management Process will be implemented. Since the control of the project risks is a continuous process, the PC as responsible of the quality and risk management will be in charge of the continuous follow-up, and a session dedicated to risk will be held during each MB-meeting.

The quality plan and risk assessment follow the Standards on product and service quality ISO 9001:2000.

Implicit risks that could appear during the development of RIMAP project are identified in the following contingency plan:

Identified risk	Contingency plan
DEVELOPMENT	
Technologies selected don't cover the expectative.	This would be decided when prototype was developed. In that case another technology must be chosen, taking account a big part of work done can be exploited.
Some project technicians fall ill for a long period.	Some tasks would be reorganized seeking those profiles inside or outside.
Requirements change due to new needs.	RIMAP Models and Core should be flexible enough to readjust to small changes in the needs.
MANAGEMENT	
A key person at decision or technical organization of the project could change their position in their organization or move to a different enterprise.	RIMAP has a strong built on the basis of providing high-quality staff able to assume both leadership and task reorganizations with minor effects on project tasks.
EXPLOITATION	
RIMAP shows an error message to an end-user while he is using the Mapping Tool.	Automatically, administrators will receive a warning with information about the error, starting the depurating process.
RIMAP-database connection fails and data are not shown.	Taking account this possibility, RIMAP would be designed in order to be able to change the original database address by another one where a security copy database was located.

DELIVERABLE

Project number	**112_PR3_08_0477**
Project Acronym	**RIMAP**
Project full title	**Rich Internet MAPping tool**
Title of deliverable	Architecture Design Report
Deliverable number	D3
Work Package	WP1
Delivery date	22-06-2012

Table of Contents

1. Introduction

The software architecture of a program or computing system is the structure or structures of the system, which comprise software elements, relations among them, and properties of both. The term also refers to documentation of a system's "software architecture". Documenting software architecture facilitates communication between stakeholders, documents early decisions about high-level design, and allows reuse of design components and patterns between projects.

2. RIMAP Architecture Description

RIMAP is based on client-server computing model. More exactly, on 3-Tier Architecture. On these systems, the server component provides a function or service to one or many clients, which initiate requests for such services. Other client-server architectures, like 1-Tier and 2-Tier, don't provide significant benefits to the system such as scalability.

1-Tier Architecture is the simplest of all architectures. All the processing is done on only one machine and there is usually an issue when multiple users access the same resource at the same time.
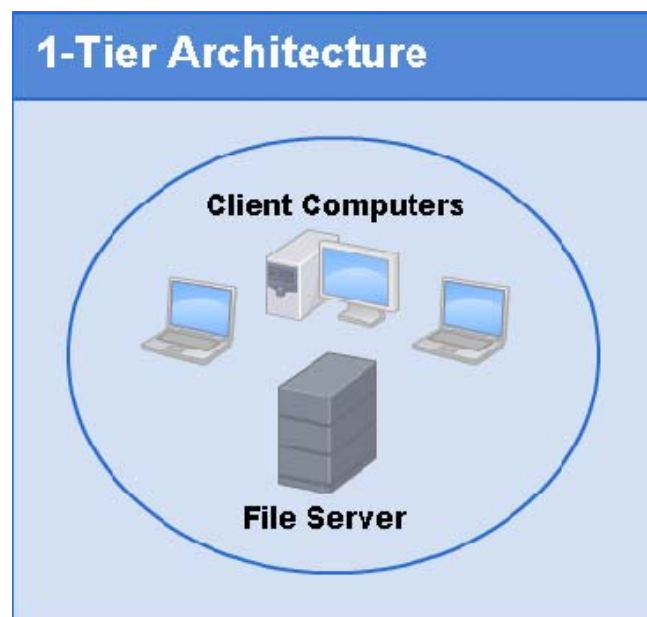
Figure 1 – 1-Tier Architecture

On 2-Tier Architecture client and database are on different systems. Processing and Application layer is in client side.
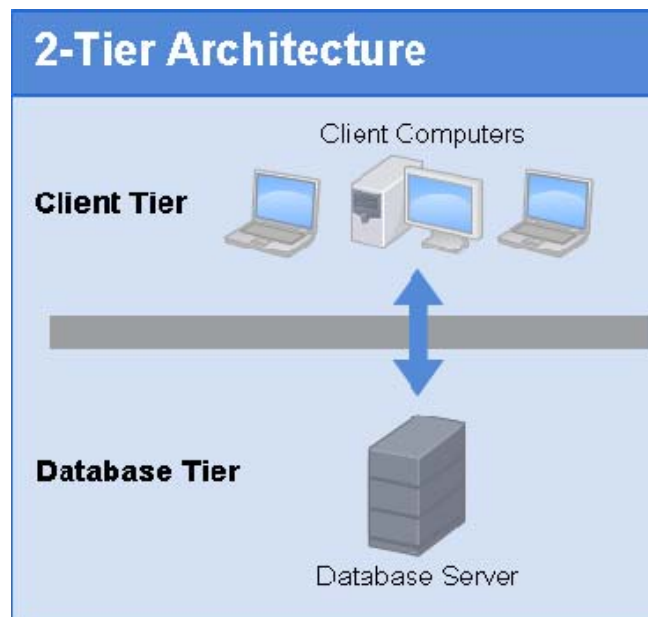
Figure 2 – 2-Tier Architecture

3-Tier client-server architecture involves one more layer called business logic tier.
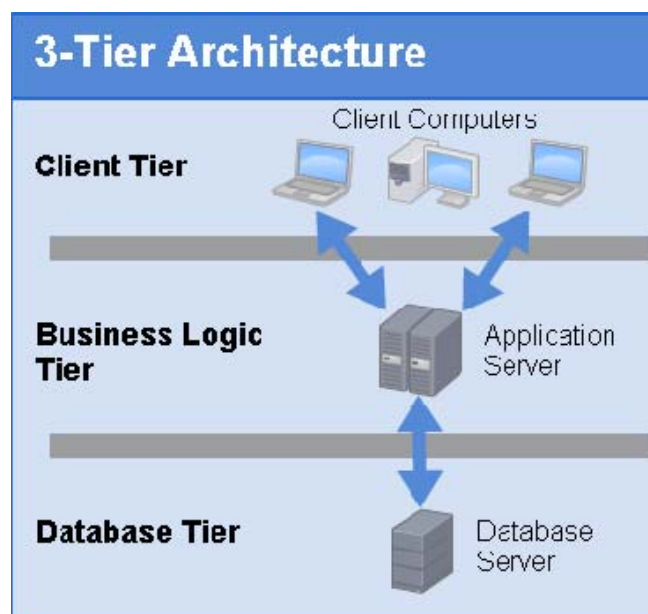
Figure 3 – 3-Tier Architecture

Client (or Presentation) Tier is the top-most level of the application: is the user interface.

Business Logic (or Application) Tier coordinates the application, processes commands, make logical decisions and evaluations, and performs calculations.
It also moves and processes data between the two surrounding layers.

Database Tier store and retrieve information, which is passed back to the logic tier for processing.

As already mentioned, <u>RIMAP</u> is based on 3-Tier Architecture (Figure 4).
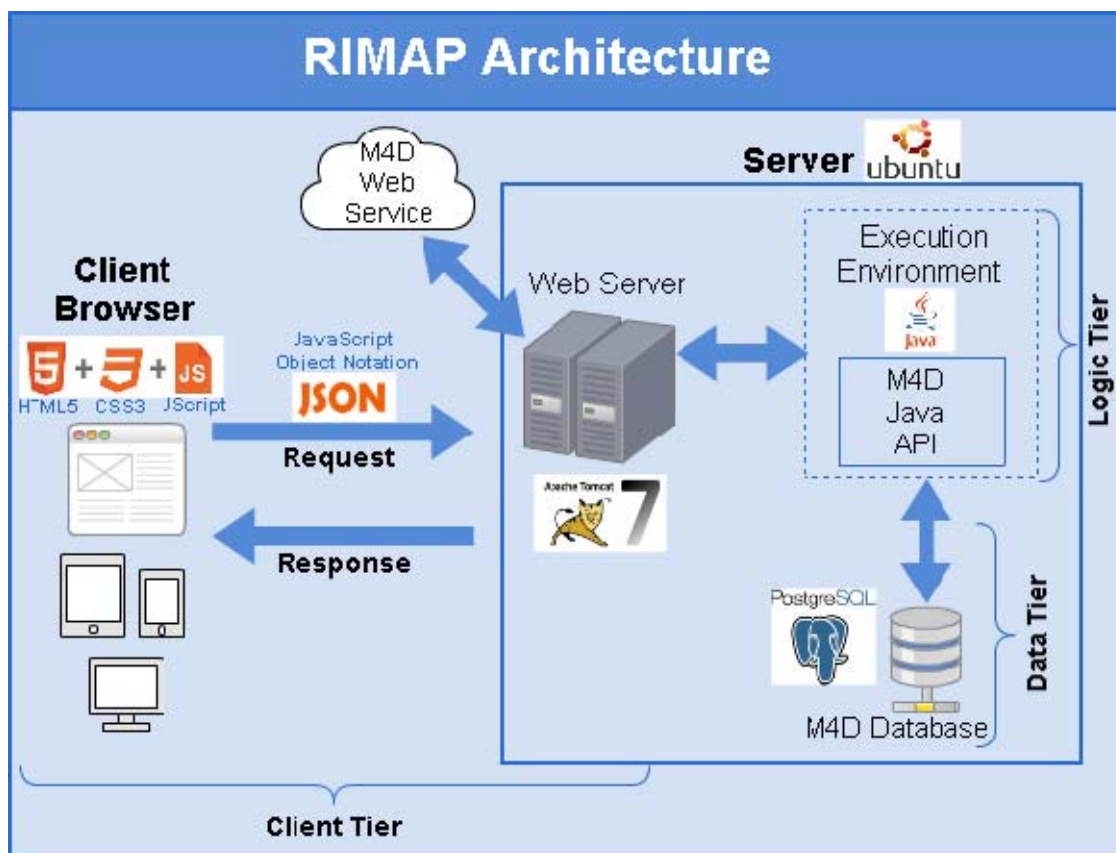
Figure 4 – RIMAP Architecture

<u>RIMAP Client (or Presentation) Tier:</u>

The user interface will be developed with HTML5/CSS3/Javascript technology. In late 2011 Adobe advised that they were leaving the Flash Player plugin development for mobile browsers. Moreover, this plugin is still incompatible with certain Apple devices. In order to make RIMAP as accessible as possible, the RIMAP development team decided to change the presentation layer technology, switching Adobe Flex with HTML5. Cross-browser HTML5 functionality guarantees the future of the tool.

Other specifications:

- Ext JS 4.1 JavaScript Framework for Rich Apps in Every Browser

<u>RIMAP Logic Tier:</u>

The Business Logic layer will use the Java API and Web Services developed in 'ESPON Database 2013 Phase II (M4D)' project to obtain all necessary information about indicators and communicate it to the client layer. These M4D Tools (API and WS) should provide RIMAP methods such as: obtain indicators by theme, obtain indicators by year, obtain all the information about an indicator, obtain the available indicators for a geographical layer, obtain the value of an indicator in a geographical zone…

RIMAP development team will work closely with M4D development team to define all the needs that are not included in them (API and WS).

Other specifications:

- Runtime Environment: Java(TM) SE Runtime Environment
- Web Server: Apache Tomcat 7.0

RIMAP Data Tier:

The Data Layer is responsible for hosting the database and keeps it always accessible for RIMAP.

Other specifications:

- Database Engine: PostgreSQL 8.3.8

This type of architecture is also known as Model – View – Controller architecture (MVC architecture).

The main aim of the MVC architecture is to separate the business logic and application data from the presentation data to the user.

Here are the reasons why we should use the MVC design pattern.

1. Substitutable user interface: Different views and controllers can be substituted to provide alternate user interfaces for the same model.
2. Easier user interface changes: Changes affecting just the user interface of the application logic become easier to make.
3. They are reusable: When the problems recur, there is no need to invent a new solution; we just have to follow the pattern and adapt it as necessary.
4. Clear separation between presentation logic and business logic
5. All objects and classes are independent of each other, so change in one class doesn't need alternation in other classes.
6. Easy to maintain the code and future improvements.
7. They are expressive: By using the MVC design pattern our application becomes more expressive.
8. Easier testing: With MVC it can be easier to test the core of the application, as encapsulated by the model.

MVC is perfect for team work. This architecture splits the project into some parts, so team members can work and their parts without any dependency. It is really easy to edit or change some part of the project that makes less development cost and maintenance cost.

There are many MVC architectures, most of which are slightly different from one another. Here's how we define ours:

1) <u>Model</u>: The model object knows about all the data that need to be displayed. It is model who is aware about all the operations that can be applied to transform that object. It only represents the data of an application. The model represents enterprise data and the business rules that govern access to and updates of this data. Model is not aware about the presentation data and how that data will be displayed to the browser.

2) <u>View</u>: The view represents the presentation of the application. The view object refers to the model. It uses the query methods of the model to obtain the contents and renders it. The view is not dependent on the application logic. It remains same if there is any modification in the business logic. In other words, we can say that it is the responsibility of the view's to maintain the consistency in its presentation when the model changes.

3) <u>Controller</u>: Whenever the user sends a request for something then it always go through the controller. The controller is responsible for intercepting the requests from view and passes it to the model for the appropriate action. After the action has been taken on the data, the controller is responsible for directing the appropriate view to the user. In GUIs, the views and the controllers often work very closely together.

So, the user interface, functional process logic and data access are developed as independent modules. It provides an exceptional security, fastest execution, "thin" client side (processing at logic tier) and a scalable system.

DELIVERABLE

Project number	112_PR3_08_0477
Project Acronym	**RIMAP**
Project full title	**Rich Internet MAPping tool**
Title of deliverable	Project Website
Deliverable number	D4
Work Package	WP5
Delivery date	22-06-2012

Table of Contents

1. **Introduction**

An initial version of the project website has been created and deployed, and this document is provided as an accompaniment to the actual live project website. This document together with the website forms the entire deliverable D4. Project Web Site. This document describes the initial instantiation of the project website, outlines some future developments that are under consideration, and reproduces some content from the website itself.

On the other hand, another project website has been created by ESPON where main project results are shown.

2. **Web Site Infrastructure**

To create an initial web presence several topics needed to be addressed including domain name, hosting infrastructure, and initial content. These are discussed below.

a. **Domain name**

The RIMAP project website has been established in AIDICO web domain. The site can be found at URL http://rimap.aidico.es/.

b. **Physical Infrastructure**

In order to host the website, we have taken account that AIDICO provides that kind of service, so, it has been quite simple to take the decision to allocate the web site into AIDICO server.

Server is based on Windows Server Technology, as well as dedicated space on a separate, secure, storage area to accommodate our backup needs.

c. **Web Structure**

The project efforts are addressed to develop the Web Mapping Tool, so it was decided that the project website would be a traditional static and simple website addressing the predicted immediate needs of interested external stakeholders. The website was conceived to answer key questions could be expected to have:

- What is this project about and which results are going to be achieved?
- Who is participating in the project?
- Who can be contacted about the project?

Deliverable 4 – Project Web site

3. Web Site Contents

a. The Home Page

The 'Home Page' page explains the ESPON program and which is the RIMAP project scope in relation to the rest of ESPON projects.

Figure 1. RIMAP Web Site Home page

b. Objectives

Objectives page details the reach of the project and the expected results.
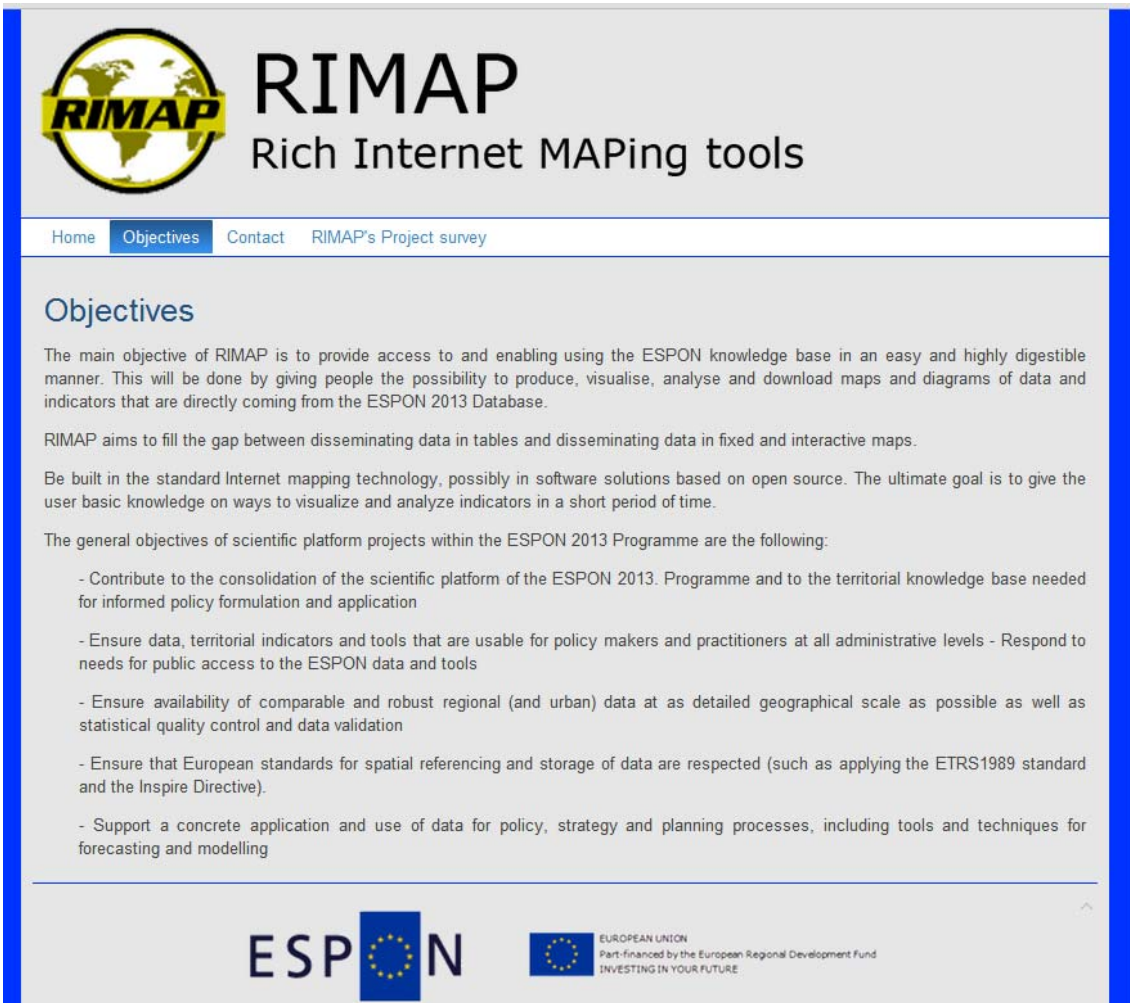
Figure 2. RIMAP Web Site Objectives page

c. Contact

The Contact page provides the contact details of the project coordinator in order to facilitate a communication channel with visitors.

Figure 3. RIMAP Web Site Contact page

4. Future Work

Taking account the main result for RIMAP project is the Web Mapping Tool, and in order to achieve a really useful and friendly tool, a survey will be done through RIMAP web site.
This survey aims to know the user preferences of the Web Mapping Tool. This information will help to developers to improve the tool design.

DELIVERABLE

Project number	112_PR3_08_0477
Project Acronym	**RIMAP**
Project full title	**Rich Internet MAPping tool**
Title of deliverable	Dissemination and Communication Plan (1st draft)
Deliverable number	D5
Work Package	WP5
Delivery date	22-06-2012

Table of Contents

1. Introduction

Proactive communication is important on all projects. Communication is also a vital way to manage expectations about how the project is going and who needs to be doing what. On smaller projects, communication is simple and does not require much proactive effort.

A Communication Plan allows you to think through how to communicate most efficiently and effectively to the various constituents. Effective communication means that you are providing information in the right format, at the right time, and with the right impact. Efficient communication means that we are providing the information that is needed, and nothing more. In order to ensure a good communication and dissemination of project results it is elaborated this Communication and Dissemination Plan.

RIMAP Communication and Dissemination Plan is structured in the following elements:

- Objectives and stakeholders

- Strategy, Activities and tools selected

- Main expected results

- EC and ESPON Requirements

2. Objectives

General objectives of RIMAP Communication and Dissemination Plan are:

- To diffuse information and raise awareness about the RIMAP project to the stakeholders.
- To optimize internal information flow and ensure an efficient communication between the departments involved in the project.
- To present project results to interested public and private bodies from Europe.
- To establish a fruitful engagement with other projects and programmes

Specific objectives of **Internal Communication:**

- To facilitate the communication channels between the personal involved in the project in order to improve the correct implementation of RIMAP.

Specific objectives of **External Communication:**

- To present stakeholders RIMAP project: its objectives, results, how does it works, etc.
- To disseminate all the results obtained during the whole duration of the project.
- To present RIMAP tool to policy makers at national and European level.

- To create synergies with other ESPON projects in order to improve the advance of RIMAP project.
- To develop a efficient and clear communication to diffusing to all citizens.

3. Stakeholders

Communication and dissemination activities of RIMAP project are focused on transmitting clear information to a specific group of interested people.
Main target stakeholders of RIMAP to be addressed are:

- Local Authorities & National//Regional Bodies are key players as policy makers, favourable legislative framework creation, public procurements, owners and promoters of their buildings.
- Public and private Promoters.
- Infrastructures maintenance and Energy agencies.
- Universities and Economic and/or Urban Research Institutions
- EU Development Agencies
- Press and Communication
- Society in general

4. Strategy and activities

a. Internal Communication

Internal Communication deals with the efficiency of the information flow between people involved in the project, due to the fact that several departments of AIDICO is working in RIMAP. It is also important to ensure a fluently communication with ESPON CU.
Several tools are used in order to obtain these objectives:

- **A shared folder** where working documents are exchanged between people involved in the project.
- **Internal working meetings** will take place during the implementation of the project.
- Telecommunication tools: e-mail, phone, skype, post, etc.

b. External Communication
The purpose of external Communication includes the dissemination of RIMAP to the stakeholders.
The main diffusion lines are:

- o Corporative Image:
  - Creation of RIMAP Logo.

- o Website and ICTs:
  - ▪ RIMAP webpage, http://rimap.aidico.es/ shall also serve to maintain contact and update external users through publicly released information about the project which shall be regularly updated. The website will be a prioritized communication channel, and printed materials, even if important, will have a less degree of priority. Printed material will also be made available on the web.
    Opinions and other suggestions which shall assist the work conducted in WP1. RIMAP will enhance and innovate the use of social software, such as blogs and Social Media to enhance access to archival materials. Accordingly these communication channels will be used also for the project dissemination.
  - ▪ RIMAP information in ESPON website, http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/rimap.html

- o Dissemination materials:
  - ▪ Brochures with general information of the project
  - ▪ Media: press releases
  - ▪ Articles in seminars, congress, specialized magazines.

- o Events
  - ▪ ESPON SEMINARS
  - ▪ Congress, seminars related to the project
  - ▪ RIMAP final conference in order to disseminate RIMAP tool

- o Guide reference and publications:
  - ▪ User's RIMAP Guide

- o Networking
  - ▪ Contact and exchange of information with other European programmes or initiatives.

c. Responsible

The responsible to develop dissemination strategies will be Patricia Galisteo with the support of the coordinator of RIMAP project: Sergio Muñoz.

Her functions will be the correct execution of DC Plan, to control that all activities include in this Plan and in Part B of RIMAP are well implemented.

5. Dissemination Tools

In the following diagram we can see the main dissemination tools.
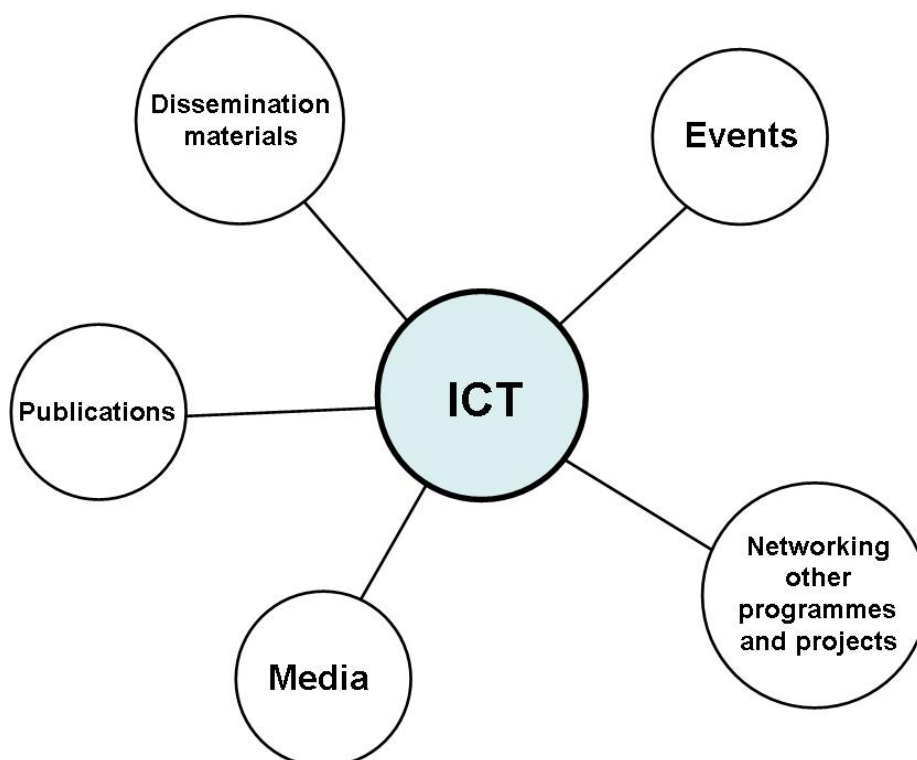
RIMAP website (http://rimap.aidico.es/) is it not only key element to offer direct information but also as a strong dissemination tool. It is developed in English.

The website will serve to invite stakeholders to several events, to disseminate RIMAP tool, share news or like a tool to help in executing some tasks of the project (the on-line survey is available in the website)

On the other hand, due to the intranet, internal communication between technicians is available. This internet site is secured. The ESPON representative will be able to access on-line the official documents through this website and will be able to follow more easily the project progress.

AIDICO with internal resources will be able to create RIMAP website. AIDICO will ensure the updated and maintenance of the website, even after the project's ending

Social media. Other publication channels will be explored throughout the project runtime and might be included at a later point. This includes the wide possibilities within social media, e.g.:
- LinkedIn

- Facebook

- Blog

- SlideShare

- YouTube

- etc.

Dissemination Material it is composed by brochures with the general information about the project and RIMAP tool.

Brochures will include RIMAP and ESPON logos. They will be prepared for the presentation at the workshops and other conferences and events, as well as for sending out information to key players. Enabling constant availability of brochures is recommended to be prepared in a form suitable for distribution via e-mails or other electronic way or printed on paper (recommended use of recycled paper).

Final manual to underline acquired results and to give guidelines for the application of the implemented technology.

Presentations at ESPON Open and Internal Seminars Presentations at seminars and similar events of the ESPON 2013 Programme, on the progress and the perspectives of the RIMAP project**.** It could provide an important base for creating interest in and therefore attention to the results of the project:

- **Aalborg, Denmark 13 and 14 June 2012.** "European Territorial Evidence for EU Cohesion Policy and Programming". (Open Seminar)

- **Cyprus, 5 and 6 december 2012** (Internal Seminar)

Linkages to the ESPON network and relevant research and projects. It will be ensure the close contact and cooperation with:

- M4D project in relation to the ESPON Database,

- Infeurope in relation to the hosting and integration of the tool in the ESPON website

- INTERCO in relation to the presentation and analysis methods used for the selected indicators

- Other ESPON projects if necessary

Networking with other EU Programmes and Initiatives. It is consider the presentation of the project activities and results in different forums and promoting the exchange of information and synergies between interesting initiatives:

- o *European Bank for Reconstruction and Development (EBRD).-*The EBRD was founded in 1991 as an international financial institution to help create market economies in the former communist region of Central and Eastern Europe and the former Soviet Union.

- o EURADA - The European Association of Development Agencies (EURADA) has a membership of about 150 regional development agencies from across the

European Union. Agencies from almost all the Member States of the EU are EURADA members.

o EUNIDA was established in 2000 as a grouping of EU Member State implementing agencies with a public mandate to develop, manage and implement sustainable development programmes on behalf of the European Union.

o The European Urban Research Association (EURA). EURA is mainly European through its membership and expertise. As the world goes urban, it is therefore timely to review and reflect the role and function of the city in a changing Europe, examine European cities' similar characteristics (of history and heritage, of design and built form, of politics, governance and democracy, of economic function, of social structure and association) and their distinctive features.

o URBACT is a European exchange and learning programme promoting sustainable urban development.

o Energie-Cités is an association of European local authorities, mainly municipalities. One of the aims of the association is to provide its members with information on the promotion of sustainable local energy policies. The network extends over 20 European countries and includes about 100 municipalities, the majority having between 100,000 and 300,000 inhabitants.

o International Energy Agency, which has 26 member countries including 17 member states of the European Union, is active in the area of energy efficiency.

o Division of Sustainable Development (United Nations)

o OECD

o The European Sustainable Development Network (ESDN) is an informal network of public administrators and other experts dealing with sustainable development (SD) strategies in Europe.

o European Commission – Research for Sustainable Development

o EUROSTAT

o Framework Programme Seven – Socioeconomic and Humanities – 2013

Transnational Networking ESPON Activities. RIMAP project will take into account transnational Networking ESPON activities:

•CaDEC - Capitalisation and Dissemination of ESPON Concepts
•ESPONTrain - Establishment of a transnational ESPON training programme to stimulate interest to ESPON2013 knowledge
•INTERSTRAT - ESPON in Integrated Territorial Strategies
•NORBA - Nordic-Baltic Dialogues on transnational perspectives in spatial planning
•SCALES - Breakdown and capitalisation of ESPON results on different scales

Media tools. Press release and articles are important to disseminate the results to specialized and general people. It is important to choose the correct channel to disseminate the information. Language must be clear and direct. We bear in mind indicate the website of the project, as well as a contact person. Obviously, we remark that it is an European project financed by ESPON programme. ESPON logos will be taken into account.

RIMAP events. It is foreseen the participation to European scientific conferences and trade fairs with speeches and posters.
It is also foreseen a final conference presenting RIMAP tool at the end of the project (December 2013)

6. Monitoring

To ensure the implementation of foreseen actions as well as to facilitate an efficient management of the project it is presented the following table with indicators per type of activity:

Type of Indicator	Indicator	Value
Execution	ESPON Seminars	4
	Seminars and events	3
	RIMAP final conference	1
	Networking other initiatives	6
	Stakeholders interested	30
	Articles publicated	2
	Printed brochures	300
	Press Release	6
	Public user of RIMAP tool	500
	Website visits	100
Result	Networking RIMAP created	3
	Final conference assistance	50
	RIMAP tool use	50

7. Schedule

Activity	2012												2013											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1st Communication Plan						■																		
Brochures																		■						
Press Release						■				■		■		■				■						■
Project website						■			■				■					■						■
User Guide													■								■	■	■	■
Seminars					■							■					■							■
Articles										■													■	
Final conference																							■	■
Networking other initiatives									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Contact other ESPON projects			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Social media						■				■			■			■			■			■	■	■
Final Communication Plan																								■

8. EC Public Requirements

It defines the measures that project beneficiaries shall apply and which will be made obligatory in contractual documents.

The requirements presented in this document were presented to DG Regio and checked with their legal unit. EC Regulation 1828/2006 sets out the rules and responsibilities relating to information and publicity measures. The rules and responsibilities for implementing **information and publicity measures in relation to the public** are specified in Art. 7 and 8, which are relevant for beneficiaries, the ESPON Managing Authority and the Coordination Unit (as beneficiary of technical assistance).

Implementation of Art. 8

Due to this article, beneficiaries shall inform the public about assistance from the Funds.

(a) A permanent **plaque** shall be put up for operations

- receiving more than €500.000 of public funding, and

- purchasing physical objects, financing infrastructure or construction

As both conditions, in accordance with the opinion of the EC, should be met, no ESPON beneficiaries will in practice implement the rule of setting up a plaque. For example purchase of computers by a TPG or any similar, very limited, purchase of (physical) equipment is not the kind of operation that the rule covers.

(b) The rule on **billboards** is neither relevant for ESPON as both conditions mentioned above should be met, which is confirmed by the EC.

(c) The beneficiaries of ESPON projects shall:

1. With a clear notice inform partners and subcontractors that the operation is par financed by the ERDF.

2. Any document from an ESPON project (to the public space) shall include a statement that the operation is part-financed by the ERDF.

Implementation of Art.9

The technical characteristics of measures aimed at beneficiaries, potential beneficiaries and the public shall include the following:

(1) Emblem of the EU (the flag) and a reference to the European Union

(2) Reference to European Regional Development Fund

(3) Statement on the added value, such as "Investing in your future".

(a) The **general principle** for ESPON implementation is that the **use of the ESPON logo shall always be accompanied by the European emblem (flag) and a text giving the abovementioned reference and statement.**

The following box shall be inserted centred at the bottom of the first page only of the document:

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

The **ESPON logo** shall be placed at the top of the first page and on this page only.

The **size of the box comprising the emblem of the EU, the reference and statement shall at least be of the same size as the box comprising the ESPON logo** (measured as the comprising rectangle: length x width).
None of the two (ESPON logo or EU publicity measures) may ever be used alone.

(b) **Plaques are not obligatory** for the ESPON 2013 Programme, which has been confirmed by the EC (see above). This means that no beneficiaries of the ESPON 2013 Programme are obliged to put up a plaque.
(c) **Promotion material** is by definition always targeting external partners and the public. It shall therefore **always include the ESPON logo and EU publicity measures**.
Items such as pads, bags and other items of a similar size or larger, shall apply the general principle and include the "EC publicity text" above.
Smaller items can be exempted from the rule and only include the ESPON logo, the EU emblem and the text "**EUROPEAN UNION**". This may be the case for pens, memory keys, etc.
(d) **External documents** targeting beneficiaries, potencial beneficiaries and the general public shall **always apply the general principle and include both the ESPON logo and the EU emblem and text.**
In case of doubt related to a particular document (not mentioned above), the judgement of the need to include the ESPON logo and the EC publicity requirements shall target whether the purpose of the document is information and communication with the public and/or beneficiaries or not.
(e) **Internal documents shall neither include the ESPON logo nor the EC publicity.**
Instead of the ESPON logo the phrase "ESPON 2013 Programme" shall be included before the title of the document.

9. Publicity requirements: ESPON logo / EU flag and co-financing sentence
ESPON logo should always be used from the files made available to you. The logo should not be re-built nor mutated.
The font used for the "E S P N" letters in the name is Frutiger 55. The use of both the name and symbol in a consistent manner across all written, visual and physical outputs from the programme will ensure visual unity as well as compliance with the regulatory framework which ESPON operates in.
The height of the logos should be consistent when both the ESPON logo and the EU flag and co-financing sentence are shown together.

This is also the case for publication covers. More specifically, the height of "E S P N" letters shall be equal to the height of the EU flag.

Where more than one logo is to be used on the cover page, these may be placed either before or after the ESPON logo (see 6.5.

Cover page for reports). The spacing between the different logos should be 1/20 of the width of the page.

When an explanation in brackets about the ESPON acronym is needed, the following sentence should appear: EUROPEAN OBSERVATION NETWORK ON TERRITORIAL DEVELOPMENT AND COHESION. In addition, in order to properly communicate ESPON and avoid confusion, the word ESPON may not be translated.

<u>Reproduction on a coloured background</u>

Where possible the ESPON logo and EU emblem should be reproduced on a white background. A background of varied colours should be avoided.

Where a light coloured background is necessary (e.g. ESPON Cover Pages), the versions of the ESPON logo and EU flag and co financing sentence with a transparent background should be used.

In case of a dark coloured background, the ESPON logo and the EU flag and co-financing sentence should have a transparent background and white letters.

ESPON logo **(white background)**	**EU flag and co-financing sentence** **(white background)**

ESPON logo **(light coloured background)**	**EU flag and co-financing sentence** **(light coloured background)**

ESPON logo	EU flag and co-financing sentence
(dark coloured background)	(dark coloured background)

In the last two cases for the EU flag and co-financing sentence a white border around the EU flag should be included, with the width being equal to 1/25 of the height of the rectangle.

10. Corporate colours / Secondary colour

Corporate Colours

The corporate colours of the ESPON 2013 Programme are Pantone Reflex Blue and Pantone Yellow. These are the two colours which make up the Emblem of the European Union and their colour specification is taken from the European Union's Graphical Specification for the European Emblem.

This choice of core colours underlines the pan-European specificity of ESPON as well as highlighting its co-financing via the European Regional Development Fund. This provides a strong visual link across institutions as well as building a visual awareness of the programme. For the "E S P N" letters, in the ESPON Name, is used Pantone 2767.

Corporate Colour Blue
Pantone
PANTONE Reflex Blue
Four colour process
C 100 - M 80 - Y 0 - B 0

Corporate Colour Yellow
Pantone
PANTONE Yellow
Four colour process
C 0 - M 0 - Y 100 - B 0

Corporate Colour Dark Blue
Pantone
PANTONE 2767
Four colour process
C 100 - M 80 - Y 0 - B 70

Corporate Colour Black
Pantone
PANTONE Black
Four colour process
C 0 - M 0 - Y 0 - B 100

Secondary Colour

One secondary colour has been chosen for projects under Priority 1, 2 and 3. This colour may be used in conjunction with the ESPON Corporate Colours. The specification for this colour is as follows:

Grey
Four colour process
C 0 - M 0 - Y 0 - B 1