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**Coordinated and Support Project (CSA)**
Call: H2020-MG-2014_SingleStage_B
Topic: MG-8.1b-2014

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**REthinking Future Infrastructure NETworks**

**REFINET**

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**Project Duration:** 2015.05.01 – 2017.04.30
**Grant Agreement number:** 653789

**Coordinated and Support Project**

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**WP2**

**D2.2**

**FEHRL**

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**Stakeholder’s report**

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**Submission Date:** 29.06.2017
**Due Date:** 30.04.2016

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**Dissemination Level**

**PU** | **PP** | **RE** | **CO**

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Revision History

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2 Partner, Name Surname
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Abbreviations

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<td>RETHinking Future Infrastructure NETworks</td>
</tr>
<tr>
<td>USE-iT</td>
<td>Users, Safety, Security and Energy in Transport Infrastructure</td>
</tr>
<tr>
<td>FOX</td>
<td>Forever Open infrastructure across (X) all transport modes</td>
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Definitions

<table>
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<th>Term</th>
<th>Full name</th>
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<td>SIP</td>
<td>Strategic Implementation Plan</td>
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1 Introduction and background

REFINET is a 24-month project under the Horizon 2020 (H2020) topic of MG-8.1b-2014, which aims to create a sustainable network of European and international stakeholder representatives of all transport modes and transport infrastructure sectors. It will also deliver a shared European vision of how to specify, design, build or renovate, and maintain the multi-modal European transport infrastructure network of the future along with innovative processes to enhance the effectiveness of the sector, and elaborate a Strategic Implementation Plan (SIP) with a comprehensive set of prioritised actions.

REFINET will consider two complementary scenarios, namely maintenance and the upgrading of existing transport infrastructures, and development of new transport infrastructures. REFINET will contribute to creating a European-wide consensus on where to focus research and innovation to improve the productivity of assets and drastically reduce traffic disruptions of transport flows from inspection, construction and maintenance activities, and to accommodate increasing/changing traffic demand. Thus, REFINET will pave the way for enhanced technology integration and transfer and mass-market development for innovative materials, components, systems and processes supporting the pan-European generalisation of advanced multi-modal infrastructures.

As mentioned above, there is a need to strengthen the cooperation between stakeholders in all transport modes. The consortia of three projects (REFINET, FOX and USE-IT) have joined forces to make it possible and enhance the performance of multi-modal transport infrastructure. Of particular importance to these projects is the opportunity such cooperation gives in disseminating project results to a wide community of stakeholders.

2 Objectives of D2.2

The Work Package (WP)2 – COMMUNITY NETWORK BUILDING focuses on creating the community of transport infrastructure stakeholders that will collaborate with the REFINET partners in the development of the REFINET Vision (WP3) and its SIP deployment strategy (WP4). This WP starts in month 1 and finishes in month 24.

The WP2 is built around four tasks:

- 2.1: Identification of the stakeholders
- 2.2: Set up of the REFINET Group of Experts
- 2.3: Set up of the REFINET Network
- 2.4: Consolidation of the REFINET network

D2.2 includes the output of the tasks T2.2 and T2.3. It also encompasses the output of task T2.4, which is still to be completed.

The objectives of the task 2.2. “Set up of REFINET Group of Experts” are:

- To select high-level experts who will engage in the projects. These experts will work with REFINET along the upcoming two years and play a major role in guiding the project down the right path by discussing its progress thoroughly;
- To brief the stakeholders more in depth about the project and their roles in the project, as well as the different ways they will contribute to the progress of the project;
- To get feedback and external insight into the SIP and its deployment.

The objectives of the task 2.3. “Set up of REFINET network” are:

- To develop a methodology to form the REFINET network;
• To launch of the online repository of stakeholders;
• To regularly communicate with the stakeholders about the project and get their contribution to the progress of the project.

The objectives of the task 2.4 “Consolidation of the REFINET network” are:
• To keep expanding the REFINET network up to 1,000 names
• To consolidate the REFINET network so that it can form a stable community after the end of the project
• To foster a communication channel from the project partners to the stakeholders
• To collect input/feedback from the stakeholders
• To participate in the consultation process, including the thematic workshops for the Group of Experts
• To leverage the dissemination of the project results at various events
• To develop the mid-term and final strategy plans for the consolidation and expansion of the REFINET network (this specific sub-task is addressed by a specific D2.4, which is directly linked to D2.2)

Following the decision to create synergies between the REFINET, FOX and USE-iT projects, all input from the FOX and USE-iT projects have been integrated into the REFINET network, which aims at building a very large community.

3 Methodology and Results

3.1 From the list of stakeholders to the REFINET network and the REFINET Group of Experts

All REFINET project partners were involved in the tasks 2.2 and 2.3 in order to build the REFINET Group of Experts and REFINET network of stakeholders. Existing partnerships with the partners of the projects have facilitated the identification of the list of stakeholders and experts. The list covers all transport modes (road, rail, maritime etc.) and their respective roles over the infrastructure life-cycle (planners, designers, contractors, operators, managers etc.).

3.1.1 REFINET network

From the initial list of stakeholders composed by around 500 names (see D2.1 output of T2.1), the WP2 participants have built a REFINET network of stakeholders which is regularly updated (T2.3). This important activity aims at informing about the project’s development, bridging the gap between the different sectors and collecting feedback for the activities of the project. The methodology to build the REFINET network has already been described in the D2.1 in anticipation of this Deliverable. The methodology is based on four sub-tasks:

• Stakeholders definition
• Construction of a matrix of stakeholders
• Stakeholder mapping and engagement mechanism
• Draft list of stakeholders

Each of the sub-tasks follows a step by step approach, which is described in detail in the sections 3.1 to 3.4 of the D2.1.

One important change has nonetheless occurred since the release of the D2.1. As a matter of fact, while the REFINET network was originally considered as the network of stakeholders to be informed (see figure 1), new findings have led to the partners changing their approach. From now on, the REFINET network consists of the stakeholders with whom the project would like to communicate since it is looking at stakeholders with either high:

• Motivation in inputting and disseminating the new vision of future of transport infrastructure developed within the project;
• Influence power at institutional, national or European level to “lobby” for supporting/deploying the results of the projects.
As a result, the following structure is used (see figure 2). The overall circle represents the stakeholders to be informed. The WP2 has identified around 10,000 names.

The middle circle represents the REFINET community/network to communicate with. The WP2 has identified around 683 stakeholders.

Within the middle (green) circle, there are the two distinct Groups of Experts (synonym to the Advisory Board or Stakeholders Reference Group): one for REFINET and one for FOX & USE-iT. Each of the group consists of about 57 experts. A few experts (around 8) are in common between the two distinct Groups of Experts.

Partners of each project (REFINET and FOX, USE-iT) feature within each of the Group of Experts circles.

**Figure 1: Quadrant tactics**

**Figure 2: Roles of the stakeholders in the project**
As the REFINET network is meant to be a dynamic community, its composition and size have been regularly updated. Thus, the update is presented in the section 3.2 of this Deliverable from the first draft list, whose characteristics were described in the D2.1. This update is available online via the digital repository which has also been already launched (see D2.1) and is available on the REFINET website.

Since the beginning of the project, REFINET partners have liaised very regularly with the REFINET network. As reported in the D5.2, a high number of communication initiatives (including in particular the open session TRA 2016 – Warsaw – April 2016) have occurred in order to support the partners in:

- Informing/defining the multi-modal transport infrastructure model, which is the backbone of the REFINET Vision
- Informing/defining the needs of the various transport sectors
- Leveraging the dissemination of the project

The role of the WP2 consists of building and consolidating the REFINET network, while the communication with the stakeholders is ensured by the WP5 and the collection of their feedback is made by the WP3 and WP4 members. Therefore, this Deliverable does not provide the report of the different stakeholder input to the project. The description of all the different communication activities so far is available in the D5.2; this Deliverable includes the brief summary of each of the communication/dissemination activities. In addition, all input/feedback so far from the REFINET network has been collected and incorporated within the D3.1 and D3.2, and will also be used for the D3.4.

3.1.2 REFINET Group of Experts

The WP participants have built the REFINET Group of Experts from the REFINET network identified in T2.1. Up to now, REFINET has recruited 57 experts whose profile corresponds to the “ENGAGE” category (see D2.1).

In contrary to the initial idea, which consisted of forming and paying a single and fixed group of 10 experts (always the same ones) throughout the lifetime of the project, the consortium (with the EC approval) decided to follow a different and more realistic approach where the Group of Experts:

- Is an accumulative list of Experts which contributes actively to some specific parts of the project via workshops, interviews or webinars;
- Are (only) reimbursed for their travel costs (according to EC rules) if they attend a dedicated workshop and they request reimbursement;
- Brings the input from all modes and transport sectors.

This change reflected the willingness of the partners to involve those from the Group of Experts that are very “engaged”. Besides, this alternative has enabled the feedback of the Group of Experts to be broadened from an initial 10 to 57, which is much better considering the complexity of the issues dealt with within the project. Finally, the concept preferred by the consortium follows the aim of the project to build, a significant active core pool of experts in the cross-modal transport sector within the REFINET community. In other words, the Group of Experts will be the heart of the REFINET Community in the medium-term.

REFINET has paid attention to select experts whose organisations are not already involved in the REFINET consortium. These experts come from various associations and federations (focused on transport and infrastructure). It is worth noting that a few experts within both the REFINET and the FOX and USE-iT Stakeholders Reference Group come from Australia and the USA, hence accomplishing the international dimension which was envisaged.

The statistics about the REFINET Group of Experts are depicted below (section 3.2).

In order to substantially support the delivery of the REFINET Vision, the project has engaged the Group of Experts:
• Remotly via one webinar in October 2015;
• Via two thematic workshops
  o 1st REFINET Workshop - Technological demands of transport infrastructures. Instituto Eduardo Torroja, Madrid, Spain, 2nd December 2015.
  o 2nd REFINET Workshop - Strategic Implementation Plan (SIP) (Technological demands of transport infrastructures), ARUP Offices, London, United Kingdom, 16th March 2016.
• Via one ad-hoc workshop - ENCORD WG on Infrastructure Meeting – REFINET Workshop, AICCOPN (Associação dos Industriais da Construção Civil e Obras Públicas), Porto, Portugal, 29th February 2016
• Via two conference sessions (TRB 2016 in Washington, USA – January 2016, TRA 2016 Warsaw, Poland – April 2016)

The role of the WP2 consists of building and liaising with the Group of Experts, while their feedback and contribution are collected by the WP3 and WP4 members. Therefore, this Deliverable does not provide the report of the expert input to the project. All input/feedback so far from the Group of Experts has been collected and incorporated within the D3.1 and D3.2, and will also be used for the D3.4.

3.2 Statistics of the REFINET network and the REFINET Group of Experts

3.2.1 REFINET network

The current list of stakeholders brings together around 683 experts from all transport modes within the transport infrastructure sector. They come mostly from Europe, but the partners have also identified a few ones outside of Europe in order to get a broader perspective. As mentioned above, the stakeholders have been informed about the progress of the projects and will get the possibility to feedback to the partners via online tools (webinars, social media) or workshops.

Communication with the REFINET network has not only informed the RTD community and the industry, including SMEs in particular, about innovative scenarios, vision and priorities (in the SIP), but has also enabled the way to be paved towards the integration in the process loop of the various stakeholders along the value chain, with their different expertise. This will generate a Vision and SIP that are indeed shared by the whole community and integrate most of the stakeholders views and feedback.

The current matrix covers 683 potential stakeholders from 41 countries. The partners have paid attention to ensure a fair distribution across:

• Countries
• Transport modes
• The mono versus multi-modal dimension of the organisation of the stakeholder
• The profile of the stakeholder
Stakeholder breakdown per country

**Figure 3:** Stakeholder breakdown per country

**Figure 4:** Breakdown per country and stakeholders

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Total 683
Stakeholder breakdown per transport mode

Figure 5: Stakeholder breakdown per transport mode

Breakdown per number of modes

Figure 6: Stakeholder breakdown per number of modes
3.2.2 R EFINET Group of Experts

There are 57 members of the Group of high-level Experts. They have engaged more closely into the content of the project to achieve consensual and shared results. They come mostly from Europe, but the partners have also identified a few ones outside of Europe in order to get a broader perspective. The highest number of experts from the United Kingdom (20 members) and the USA (17) results from the combination of the great interest from these countries in the cross-modal transport issue, as well as the opportunities they have had to attend a workshop in their own country. The statistics about the R EFINET Group of Experts is represented below (see Figures 8, 9, 10, 11, 12).
Expert breakdown per country

**Figure 8: Expert breakdown per country**

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**Figure 9: Breakdown per country and experts**

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<td>USA</td>
<td>16</td>
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<tr>
<td>Total</td>
<td>57</td>
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</table>
Breakdown per transport mode

*Figure 10: Expert breakdown per transport mode*

Breakdown per transport mode

- ROAD: 17%
- RAIL: 22%
- WATER: 27%
- AIR: 34%

Breakdown per number of modes

*Figure 11: Expert breakdown per number of modes*

Breakdown per number of modes

- Mono modal: 30%
- Multi modal: 70%
3.3 Summary of the feedback/contribution received so far from the Group of Experts

As mentioned above, REFINET has engaged the Group of Experts at different occasions. The summary of the feedback/contribution received at each event is written below.

3.3.1 Webinar

Webinar - October 2015

The REFINET & NTPS WORKSHOP was organised by WebEx on 21st October 2015. After the presentation of the participants, Jesús Rodríguez summarised REFINET, the REFINET network and the future REFINET Group of Experts. Miguel Segarra presented the activities carried out in ECTP on transport infrastructure since 2010. María Zalbide as WP3 leader in REFINET made a presentation of the scope of work in WP3 “Vision and SIP” and the initial progress at the REFINET Project Meeting in Brussels, 29-30th September. Also, there was a debate between participants.

3.3.2 Thematic workshops

1st REFINET thematic workshop - Technological demands of transport infrastructures. Instituto Eduardo Torroja, Madrid, Spain, 2nd December 2015.

The first REFINET workshop was held at Instituto de Ciencias de la Construcción Eduardo Torroja (Madrid, Spain) on 2nd December 2015 and organised by TECNALIA with strong support of PTEC. The objective was to define the model to be a reference for the future evolution of the European multi-modal transport infrastructure within the WP3 “Defining Vision and SIP”.

The definition of this model has been carried out by the REFINET partners with the assistance of the members of the REFINET network, who have been invited and involved in the discussion through the above-mentioned workshop, in order to involve different and all stakeholder perspectives related to transport infrastructure (user, administration, operator/owners, construction companies, engineering firms and universities and research centres).
Some 27 experts were invited to attend the workshop in Madrid and finally six experts, from different companies, research organisations and universities, and seven REFINET partners (CSTB, PTEC, FEHRL, DRAGADOS, DAPPOLONIA, OAPIL & TECNALIA) were able to attend.

The workshop was divided into two specific themes in order to gather valuable and useful information to define the REFINET multi-modal transport infrastructure model.

The two workshop sessions focused on different targets with the following specific objectives:

- The objective of the morning workshop session was to identify and prioritise the major trends and challenges within the transport infrastructure sector.
- The objective of the afternoon workshop session was to define a framework for the analysis of the future REFINET multi-modal transport infrastructure (RMMTI) model, thinking of new and existing transport infrastructures.

All the contributions gathered in the two workshop sessions will be used, among other activities, for the definition of the RMMTI model. The different levels (PERFORMANCE, SYSTEMIC APPROACH and TECHNOLOGICAL GAP) of the framework will also be established, in order to respond to the identified challenges and finally achieve the final objective of WP3, which is to define the Vision and the SIP in order to guide the evolution of European transport infrastructure.

More information about the first REFINET workshop can be found in the Deliverable D3.1 *REFINET multi-modal transport infrastructure (RMMTI) model*, Annex 1.

![Figure 13: 1st REFINET workshop in Madrid](image)

2nd REFINET thematic workshop - SIP (Technological demands of transport infrastructures), ARUP Offices, London, United Kingdom, 16th March 2016.

The second REFINET workshop was held at the ARUP Offices (London, UK) on 16th March 2016. Organisers briefly presented the overview of the REFINET project, Vision and challenges. Also, the definition of the RMMTI and collection of best practices were presented. The workshop included the overview of the projects and initiatives, the analysis of available technologies, REFINET selection and evaluation criteria for European and international research on REFINET topics.

Experts had interesting presentations about the rail infrastructure innovation towards a European integrated transport system, as well as the analysis of available technologies towards the RMMTI.
The morning session started with a brainstorming by the participants. It was a beneficial discussion on the challenges and technological priority areas for the European multi-modal transport.

The afternoon session then introduced the scope, barriers and timeline for the implementation of research priorities for the European multi-modal infrastructure. Experts showed their knowledge of and interest in the particular areas. More information about the second REFINET workshop can be found in the D3.4 REFINET Strategic Implementation Plan (SIP), Annex 1.

3.3.3 Ad-hoc-workshop

ENCORD WG on Infrastructure Meeting – REFINET Workshop - AICCPON (Associação dos Industriais da Construção Civil e Obras Públicas), Porto, Portugal, 29th February 2016

In the case of the third REFINET workshop, the meeting was kept private to the ENCORD Working Group on Infrastructure members. Whereas the other organisations’ memberships include a variety of actors from the industry, research centres, academia, universities, etc., ENCORD represents the industry and its input is considered to be valuable as it represents current practice in transport infrastructure.

3.3.4 Conference sessions

This workshop provided an overview of the FOX, USE-iT, and REFINET projects, with the results from FOX and USE-iT feeding into REFINET. Representatives of the three projects briefly introduced the objectives, strategies, and activities of each effort. Following these overview presentations, a more in-depth presentation was provided on the initial results from the FOX programme, highlighting findings on the state of the art and best practices for addressing key challenges in specific modes, along with identification of initial areas for cross-modal application of those solutions. A similar in-depth presentation was then provided on the USE-iT project, highlighting that effort’s approach to identifying common challenges and potentially promising research avenues that might have cross-modal application. Lastly, a detailed presentation on REFINET explored the efforts to develop a new framework for multi-modal infrastructure, integrate outcomes from FOX and USE-iT, combine those outcomes with the model to develop a new vision for that infrastructure, and ultimately provide incentives to public and private sectors to invest in the needed R&D. A brief outline of key framing questions was provided, along with a rough timeline for completing the project, with final deliverables planned for the 2017 TRB Annual Meeting.

2nd Conference session - TRA 2016 Warsaw – April 2016

An invited session on the USE-iT, FOX projects in conjunction with the REFINET project was held during the TRA 2016 conference in April 2016. The general theme was how research can respond to the challenges of cross-modal infrastructure. Initially, Thierry Goger of FEHRL outlined the projects and the overall challenge of infrastructure research. This was followed by Ewa Zofka of IBDiM, leader of USE-iT WP2 giving an overview of all technical work packages (WP2 – 4). Initially, a list of project participants in the project was presented, followed by a diagram showing the process steps for the project, and a note on the point at which the project had reached at that time.

The domains (Infrastructure, Technology, Governance and Customers) were explained in relation to the modes (Road, Rail, Air and Water) and how these were closely linked to FEHRL’s FORx4 project. A general overview of the technical areas of each WP was presented, with WP3 split into its two component parts of safety and security. For each WP, there were two slides focussing on a specific technology or process, detailing on slide 1 a brief overview of the technology, its current use (by mode) and potential future use, and any specific experience with it. On the second slide, the potential benefits and possible barriers were listed, followed by the research needs. It was explained that there were many technologies that the project had identified, and that the examples were meant to show the process that had been followed.

An overview of the FOX project was then given as part of the overall session and to show the synergies. Finally, Martin Lamb gave an overview of the future activities and timetable on the project and encouraged those present to engage with the project by, for example, attending the second workshop or final conference, offering to be interviewed on activities and comment or challenge on the documents produced so far, and those to come.

4 Conclusion and Next steps

The partners of WP2 have achieved and completed successfully the tasks 2.2 and 2.3 and have continued steadily with the task 2.4. D2.2 gathers the evidence of this success. It is very connected to D2.4. Together with the feedback from the REFINET network, the REFINET Group of Experts has provided a significant contribution to the consolidation of the REFINET Vision (see D3.1 and D3.2). The network has also helped in supporting the dissemination of the project.

The next steps for the partners of WP2 is to ensure the expansion and consolidation of the REFINNET network until the end of the project, hence supporting the objective of building a transport infrastructure community.

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The next thematic workshop involving the Group of Stakeholders is scheduled in October 2016 in Milan, Italy, focusing on the task 4.2, and two other ones will be organised in 2017 in order to enable the REFINET Vision to be finalised and a reflection on the definition and the deployment of the SIP to be undertaken.

In addition, REFINET WP leaders will attend the upcoming second workshop of FOX and USE-iT on 15th September 2016 in order to maximise the synergy between the REFINET WP3 and 4 and the technical WPs of FOX & USE-iT. Furthermore, a meeting between the WPs leaders of the three CSAs is scheduled on 16th September 2016 in order to further consolidate the synergy between the three CSAs.

Finally, as REFINET has a clear focus on international cooperation, the following extra activities (Scanning Tour 2016 and Stakeholders Workshop in Australia 2016) have been foreseen and discussed with INEA. On the basis of the reply from INEA, as the consortium believes in the added value of these two extra initiatives, the partners will work on them.