



HUELLAS

European Project LIFE+

Newsletter

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Inside

Editorial	1
LIFE HUELLAS Update	2
Working Sites for Demo ..3	
4 th Coord. Meeting.....	3
LIFE HUELLAS Mockup.....	4
IK-ING & Pamplona Region..4	
LIFE HUELLAS at TRA 2016..5	
HUELLAS Consortium	6

Briefing

- **LIFE HUELLAS Project Update**
- **Other Related Issues**
- **News**
- **Agenda**

Editorial

LIFE HUELLAS project has just passed its Mid-Term Review and begins the second half of the project. This means that multicriteria knowledge base is ready and tool development task is beginning. It will include the development of the solution which will establish different planning alternatives of project units by minimizing environmental impact. Two monitoring actions were defined, transversely to the technical actions. They were designed to evaluate and measure the environmental and socio-economic impact due to the implementation actions of the project, by defining specific indicators. By running these actions, project will test

its effective contribution to the targeted environmental problem: Greenhouse Gas Emissions (GHG) and in water resource impacts mitigation during the implementation phase of a railway construction project.

The selection of construction sites for tool demo phase is already done. One demo site will focus on infrastructure tasks and other on superstructure tasks.

The abstract submitted to Transport Research Arena - TRA 2016 has been accepted. Now it is time for submit the camera ready version, and hopefully we will be in Poland next April showing LIFE HUELLAS outcomes.

Gregorio Sainz Palmero
LIFE HUELLAS Coordinator
Fundacion CARTIF

LIFE HUELLAS Project Update: The Multicriteria Knowledge Base is Ready!

The development of the multicriteria database, that will support the tool, finished successfully after the first year of work. A comprehensive compilation of the railway networks construction material, solutions and processes have been carried out. Together with this, the LIFE HUELLAS tool analyzes social, environmental and economic impacts of the processes involved in railway construction by calculating different sustainable aspects based on previously identified variables.

This database includes an extensive inventory's inputs/outputs analysis that involves the development of a detailed description about different project units typologies considered in the project and the scope of the tool. This way the scope of the database, was defined as "*cradle to gate*".

After this compilation, an exhaustive analysis of the project units that compose the railway construction process has been done. This is an important step because it will be the primary information that will see the person who will operate the tool. From this information, the environmental, economic and social indicators was developed through a reference methodology, **MIVES** (Integrated Value Model for Sustainable Assessment), mainly due to its versatility to adapt to the evaluation of different areas and sectors.

The environmental indicators that will be calculated by the LIFE HUELLAS tool are Carbon and Water

footprints, Acidification Potential, Photochemical Oxidation and Eutrophication Potential. The environmental impacts of these indicators have been established and calculated following the guidelines of three international standards referring to life cycle assessment: ISO 14040:2006, ISO 14044:2006, ISO 14025:2006 and

LIFE HUELLAS tool combines environmental, social and economic indicators, providing threefold sustainable values.

Sustainability of construction works - Environmental product declarations standard UNE EN 15804.

In the case of the social impact, the level of the methodologies currently developed is not as advanced as environmental ones. Because of that, and based on the specialised limited bibliography data, the following indicators have been selected: working conditions, health and safety, human rights, governance and community infrastructure.

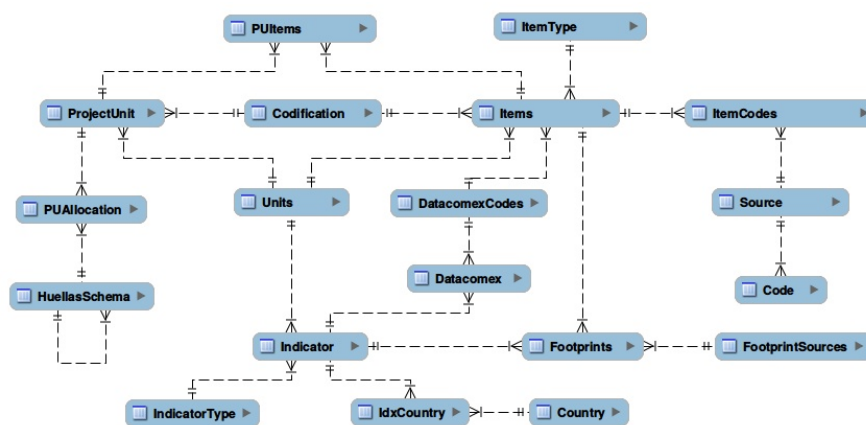
Finally, with regard to the economic part, the indicators used to calculate project costs were determined on the basis of the extensive experience of VIAS, one of the project partners.

Consequently, the LIFE HUELLAS evaluation methodology accomplishes with the following conditions:

1) To provide quantitative and comparable values in sustainability: for different infrastructure alternatives and the alternatives of design & execution of the same infrastructure.

2) To provide sustainable values: environmental, economic and social.

It should be stressed that database will be editable and copyable to promote improvements, and will be possible to edit any material or solution of the different project units considered in the tool or introduce new ones in case that in the future new materials are developed and are not included now. With this, the tool intends to be a living tool, easily updatable and scalable.



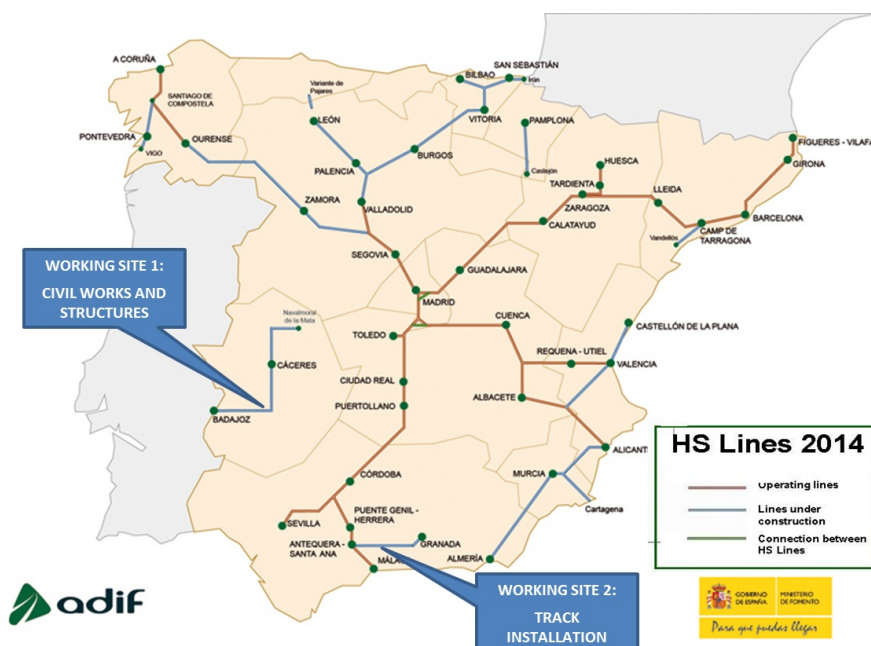
LIFE HUELLAS database diagram.

Selected Working Sites for Demo Phase

It is important to state here that the selection of the construction sites for the demonstration of the tool LIFE HUELLAS is already done: the section San Rafael - Cuarto de la Jara of the Line Madrid - Extremadura for infrastructure, and the section Antequera - Loja for superstructure.

Along the B2 Action, the tool is being developed, and in the B3 Action the tool will be tested in railway constructions already executed to perform a parametric adjustment.

The first stages of the activities for monitoring project impact (C Actions) are being carried out too. These actions intend to evaluate and measure the environmental and socio-economic impacts of project actions by defined indicators.



LIFE HUELLAS selected working sites.

4th Coordination Meeting at CTF (ADIF)

Coinciding with the halfway point of LIFE HUELLAS project and Coordination Meeting No.4, on April 15th 2015 the members of the Advisory Board met with consortium members to review project progress

up to date. The Advisory Board, which consists of companies and organizations that do not belong to the LIFE HUELLAS consortium but have shown interest in the project, is helping the project to evaluate task

development and, based on their own experience, propose actions and measures to improve project outcomes and its final impact.

The meeting has been held at ADIF's Railway Technology Center (CTF), located at Andalusia Technology Park, in Malaga. CTF was launched on November 2010 and is an stable and open space for innovation, counting with several multidisciplinary research groups.



ADIF - Spanish Administrator of Railway Infrastructures.

AENOR

AENOR - Spanish Association for Standardisation and Certification.



IHOBE - Public Agency for Environment. Department of the Environment and Territorial Policy of the Basque Government.



OECC - Spanish Office for Climate Change.



SEOPAN - Spanish Association of Construction and Infrastructure Management Companies.



SNCF - National Society of French Railways.



UNIFE - Association of the European Rail Industry.

List of members of the LIFE HUELLAS Advisory Board.



LIFE HUELLAS Mockup

“Development of the tool”, the second technical action of the project is beginning. It will include the development of the solution which will establish different planning

alternatives of the infrastructure works by minimizing the environmental impact.

Here you can see the first screen-shoot of LIFE HUELLAS tool mockup.

Only basic functionalities have been included in this first mockup, but general requirements and look&feel are already defined.

The screenshot displays a web browser window with the URL <https://huellasplanner/>. The page title is "LIFE+HUELLAS: Planner for railways infrastructures". On the left, there is a sidebar with navigation links: "Add Project", "View Projects", and "Execution". The main content area is titled "Add new Project" and contains several input fields and sections:

- PN (Project Name):** A text input field for "Project name" and a smaller field for "Project description".
- PK (Project Key):** Input fields for "Distance in kms" and "Divisions/km".
- Dumping and Lending:** A section with two tabs: "Dumping Zones" and "Lending Zones". Under "Dumping Zones", there is an "Add dumping zone" button and a table with columns for "test1", "4", "7", and "Remove". Below this, there are two rows of input fields for "Dumping Name", "PK, i.e. 9.3", and "Distance to the PK", each with a "Remove" button.
- PRESTO BC3 File:** A section with an "Examinar..." button and a message "No se ha seleccionado ningún archivo." and "Upload PRESTO BC3 budget file."
- Footer:** A green button labeled "Save and continue" with the text "Fill all fields and save your project. Next step allows you build the construction planner with this information."

IK Ingeniería collaborates with Pamplona region commonwealth

The LIFE HUELLAS project has one of its cornerstones in the calculation of the carbon footprint as a first step to take actions to reduce greenhouse gases (GHG) and reduce climate change.

The actions taken towards lowering the carbon footprint have achieved in recent years to diffuse sectors (transport among them), and enjoy a growing acceptance levels.

The Spanish National Register of Carbon Footprint, compensation and CO2 sequestration projects, under the Spanish Office for Climate Change (OECC) of MAGRAMA,

assumed the last catalyst for providing more recognition and visibility to companies that calculate, reduce and offset their footprint.

This record, just over a year old since it was opened in April 2014, has experienced a 60% increase in the rate of enrollment in recent months, demonstrating the growing interest of Spanish companies in the reduction of GHG emissions.

One of the last organizations to register their carbon footprint has been the *Mancomunidad de la Comarca de Pamplona* (MCP/SCPSA), a commonwealth of several towns at

Pamplona region, in Spain, whose works of calculation and entry in the registry have been carried out by **IK Ingeniería**, in collaboration with LKS Ingeniería. The commonwealth of Pamplona region provides services to a population of 360,248 inhabitants, for which performs the tasks of water supply and sanitation, collection and treatment of urban solid waste and regional urban transport. MCP/SCPSA was the first local authority performing supra-municipal registration in the National Register of Carbon Footprint.

NEWS

LIFE HUELLAS at TRA 2016

Very few days ago, the consortium of LIFE HUELLAS project has received important news. Our abstract titled "*Knowledge-Based Minimisation of Railway Infrastructures Environmental Impact*", based on the work developed in the project during the first year and a half, has been

accepted in a preliminary phase in **Transport Research Arena - TRA 2016**, the 6th European Transport Research Conference "Moving Forward: Innovative Solutions for Tomorrow's Mobility".

LIFE HUELLAS abstract has been selected between 1000 abstracts from 52 different countries and 250

reviewers have designated it between the best quality submissions. We have been invited to submit a full paper therefore we are going to work hard to achieve that the full paper to be considered during the final decision, to allow its presentation during the conference next April in Poland.



6th European Transport Research Conference
MOVING FORWARD:
Innovative Solutions for Tomorrow's Mobility

National Stadium, Warsaw, Poland - 18-21 April 2016



LIFE+: The future of the Sustainability Strategies in Europe

June 18th 2015, Madrid

Last June Fundación CARTIF and EFE VERDE jointly organized in Madrid the conference "*LIFE+ The future of the Sustainability Strategies in Europe*" where CARTIF shared its experience in the LIFE projects in



which they are working, along three axes: energy, water and waste.

Conference was chaired by Susana

Magro, director of the Spanish Climate Change Office, and it included two round tables. In the first one, about technical issues, CARTIF spoke about the role of the technology centers in the Life Programme and the project LIFE HUELLAS was presented, explaining its progress in the first half of the project.



AGENDA

LIFE HUELLAS 5th

Coordination Meeting

October 2015, Boecillo (VA)

The LIFE HUELLAS project partners will meet next October 2015 at Fundación CARTIF offices, in Boecillo (Valladolid). This coordination meeting will probably coincide with the next project monitoring visit.

The agenda for the meeting includes the following issues: review of tasks performed in the last 6 months of the project, scheduling of tasks for the next 6 months, review of communi-

cation and dissemination activities and discuss about the Monitoring Action C activities.

2015 Call for proposals for LIFE Action Grants

The Commission invites entities registered in the European Union to present proposals for the 2015 Call for proposals for LIFE Action Grants. The call covers proposals for both LIFE sub-programmes: Environment and Climate Action.

The total budget for project action grants for this call is EUR 240,811,337. Of this, EUR 184,141,337 is foreseen for the sub-programme for Environment and EUR 56,670,000 for Climate Action. At least 55% of the budgetary resources allocated to projects supported under the sub-programme for Environment shall be dedicated to conservation of nature and biodiversity. Depending on the type of project, deadline will vary from September 15th to October 7th 2015.

LIFE HUELLAS Consortium

The LIFE HUELLAS project (Ref.: LIFE12 ENV/ES/000686, with the contribution of the European Union LIFE financial instrument), was granted in the framework of the 2012 Call of the LIFE+ European Programme. Project start date is October the 1st, 2013 and estimated project end will be on March 31st, 2017. Consortium is formed by:

- **Fundación CARTIF:** (Coordinator) Private, non for profit, research centre with 20 years of experience researching in energy, environment, ICT, agrofood, automation, robotics and computer vision areas. [1]

- **VIAS Y CONSTRUCCIONES S.A.:** Large construction firm with over 80 years' experience. Leader in railway infrastructure construction, it has been involved in every High Speed line deployed in Spain. [2]

- **Ingurumenaren Kideak Ingeniería S.L.:** Consulting firm specialized on industrial ecodesign, sustainable building and environmental technical training. It has been supporting companies and public bodies on environment innovation applied to products and services improvement since the year 2004. [3]

- **Universidad de Granada:** The research group "Soft Computing and Intelligent Information Systems" (SCI2S) is composed of a number of professors and researchers with widely recognized expertise in Soft Computing and Computational Intelligence fields. [4]



LIFE+ is the financial instrument of the European Union for the environment, with a budget of 2,143 M€ for the period 2007-2013. LIFE+ Projects include actions in the field of nature conservation, climate change, environmental policy and information and communication on environmental issues in all EU Member States.

References

- [1] Fundación CARTIF, <http://www.cartif.com>.
- [2] VIAS Y CONSTRUCCIONES, <http://www.vias.es>.
- [3] IK-Ingeniería, <http://www.ik-ingenieria.com>.
- [4] SCI2S - Universidad de Granada, <http://sci2s.ugr.es>.



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