



Linear infrastructure efficiency improvement by automated learning and optimized predictive maintenance techniques

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EDITORIAL

Dear Readers,

We are delighted to present you the first Newsletter of the INFRALERT Project - “Linear infrastructure efficiency improvement by automated learning and optimized predictive maintenance techniques”.

With the INFRALERT Newsletters you will receive the latest information about the project as well as its key results and findings so far. Further, we will keep you up to date about the partners’ activities on projects and initiatives related to INFRALERT.

In the first issue of the Newsletters, we are pleased to introduce to you the project itself and present you the Partners of the INFRALERT Consortium. In addition, we provide you with short summaries of the latest project events as well as partner’s meetings where they discussed what’s done and what’s next. At the end of the Newsletter, we offer you a short overview on upcoming events related to the project.

We hope you will enjoy reading this first issue of the INFRALERT Newsletter.

the INFRALERT Consortium

For more information and news, please see our website.

PROJECT OVERVIEW

INFRALERT is a collaborative project co-financed by the EU within the Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020), started on 1 May 2015 for a 3-years duration.

With an overall budget of over €3 million, Project Coordinator Fraunhofer IVI and Technical Manager CEMOSA along with their partners will produce an expert-based information system to support and automate linear asset infrastructure management from measurement to maintenance.

This includes the collection, storage and analysis of inspection data, the determination of maintenance tasks necessary to keep the performance of the infrastructure system in optimal condition, and the optimal planning of interventions.

Developments will be demonstrated in two real-world pilots: a railway corridor in Sweden and a road network in Portugal.

THE INFRALERT CONSORTIUM

The INFRALERT Consortium brings together 7 partners from 6 EU-countries. These include technological SMEs, research organisations and infrastructure managers. They cover the whole R&D cycle and will foster the project results to the market by different means.



INFRALERT team during the Kick off Meeting in June 2015, at the Fraunhofer IVI headquarters in Dresden (Germany).





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PRESENTATION OF THE PROJECT

The condition of the land transport infrastructure has a big societal and economic relevance, since constraints result in disruptions of service. The demand for surface transport will significantly increase in the next years. Given budget restrictions, a substantial enlargement of the road/rail network in the next decades is doubtful. Besides, the aging infrastructure will require more maintenance interventions to ensure normal traffic operation. Therefore, the only way to increase infrastructure capacity for the increased transportation demand is to optimise the performance of the existing infrastructure. This is precisely the goal tackled by INFRALERT.



INFRALERT aims to develop an expert-based information system to support and automate infrastructure management from measurement to maintenance. This includes the collection, storage and analysis of inspection data, the determination of maintenance tasks necessary to keep the performance of the infrastructure system in optimal condition, and the optimal planning of interventions.

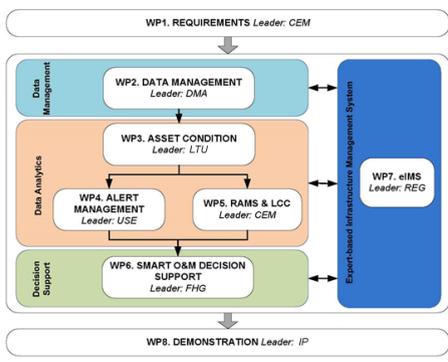
The major challenges of INFRALERT are:

- Developing information technologies and standard procedures applicable to linear transport systems in general.
- Developing expert-based toolkits built on artificial intelligence and optimization techniques to support decision making in maintenance planning, renewal and new construction of linear infrastructures.
- Integrating all previous models and tools in a cloud-based framework compatible with existing asset management systems.

The main outcomes of INFRALERT will be:

- Ensuring service reliability and safety by minimising incidences and failures of decaying assets.
- Keeping and increasing the infrastructure availability by optimising operational maintenance interventions and strategic long-term planning decisions on new construction.
- Ensuring the operability under traffic disruptions due to interventions.

PROJECT STRUCTURE



The project is structured and divided into ten Work Packages (WPs).

The main scientific and technical work will be conducted in WPs 2-7.

The requirements will be identified in WP1 and the whole INFRALERT system will be demonstrated in WP8. Finally, these technical WPs are completed by two general WPs named WP9 and WP10, for Dissemination & Exploitation and Management Activities, respectively.

DEMONSTRATION SITES

The INFRALERT developments will be demonstrated in two real-world pilots chosen for their potential for replication: a railway corridor in Sweden and a road network in Portugal.



Road network, Coimbra region in the centre of Portugal, managed by Infraestruturas de Portugal



Railway corridor, Iron Ore Line in Malmbannan in northern Sweden, managed by Trafikverket





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PARTNERS MEETINGS

INFRALERT kick off meeting

The Kick off Meeting of the project took place on the 15th and 16th of June 2015 at the Fraunhofer Institute for Transportation and Infrastructure Systems IVI in Dresden (Germany), headquarters of the coordinator.

This was the first face to face meeting since the project start. The attendees from the seven partners consortium met together to discuss and agree on a detailed project work plan, to discuss about ongoing activities on requirement analysis and to present first results on state-of-the-art survey conducted during the first weeks of the project's lifetime.

INFRALERT working sessions

On the 7th and 8th of March 2016 there was a 2-days meeting at the Lulea Technical University (LTU), one of the partners of the project. During this meeting there were scheduled several parallel workshops aimed to discuss specific technical issues. As a result, the research efforts were aligned to ensure that the project is achieving its expected results in the upcoming months.

The project's sessions were complemented by a visit to the Iron Ore Line, which is one of the demonstrators of INFRALERT, a presentation about the eMaintenance Lab and a presentation about maintenance in cold climates.



FIRST INFRALERT EAB WORKSHOP



To ensure the widest impact possible, the INFRALERT project team is supported by an External Advisory Board (EAB), composed by experts from the infrastructure community. The first EAB workshop was held on the 23rd September 2015, at the Fraunhofer Office in Brussels (Belgium).

Six of the eight current EAB members attended the meeting:

- Antonio Pérez de Arenaza, from Acciona Concesiones (Spain)
- Gerhard Eberl, from ASFINAG (Austria)
- Henk Samson, from Strukton Rail (Netherlands)
- José Díez, from European Union Road Federation, ERF (Belgium)
- Pascal Rossigny, from CEREMA (France)
- Tom Tivey, from Network Rail (United Kingdom)

The purpose of the meeting was to discuss about the project objectives and approach, potential benefits and related requirements of the project. Discussion was underpinned by the results of a related questionnaire, which was answered by the EAB members in advance. This questionnaire will shortly be available on the INFRALERT website where further stakeholders will be invited to share their opinion regarding the project.

The INFRALERT's partners presented to the EAB members the background and main technology concepts of the project, as well as the initially identified functional and technical requirements. There was a very fruitful and active discussion during the whole meeting. Many useful recommendations were received and concrete actions to follow were agreed. For instance, visits at premises of some EAB members will be undertaken to look at and analyse maintenance planning processes and existing systems and tools, which helps to specify the INFRALERT system architecture.

The next EAB workshop will take place in November 2016, in Brussels.



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UPCOMING EVENTS

For promoting and sharing project results, the INFRALERT partners have participated or plan to participate in:

April 18 – 21, 2016:

TRA2016, Transport Research Arena Conference in Warsaw, Poland

The poster showed at the TRA Marketplace was received with a great interest by the attendees to the event.



June 7 – 9, 2016:

CIT2016, XII Conference on Transport Engineering in Valencia, Spain

September 20 – 23, 2016:

InnoTrans 2016 in Berlin, Germany

Second INFRALERT EAB Workshop

It will take place in November 2016, in Brussels, where the EAB member, experts from the infrastructure community, will give recommendations to the General Assembly, based on first project results, for further fine-tuning of the research.

OPEN PROJECT WORKSHOP AND WEBINARS

Open Workshops/Webinars make possible to publicise the results obtained in the project to an international audience of researchers, technicians and industrial stakeholders who may be interested in the project developments and outcomes.

The first Open Workshop will take place in Brussels (Belgium), in November 2016 and is open to any person interested in the project's topic. Details about the date and venue will be announced soon on the website, where it is also possible then to fill in the registration form.

INITIATIVES

R&D done in INFRALERT is also in line with other ongoing European funded projects and initiatives.

REFINET <http://www.refinet.eu/>

This Coordination Support Action (CSA) funded by the H2020-EU aims to create a sustainable network that integrates relevant stakeholder representatives of all transport modes and infrastructure sectors in order to create a shared European vision of how the multi-modal European transport infrastructure network of the future should be specified, designed, built or renovated, and maintained.

Sergio Escriba (CEMOSA) has attended the two expert's workshops already organized by REFINET in Madrid (02/12/15) and London (16/03/16).

IN2RAIL <http://www.in2rail.eu/>

This large project, co-funded by the EU under the H2020 program, aims to set the foundations for a resilient, consistent, cost-efficient, high capacity European network by delivering important building blocks that unlock the innovation potential that exists in Shift2Rail. It involves 54 partners across Europe, including manufacturers of railway equipment, infrastructure managers, railway operators, rail businesses, as well as research institutions.

USE-iT and FOX

These two H2020 projects have a common aim: to contribute to development of the Forever Open Road, Rail, Runway and River or FORx4 initiative. Together they will establish a crossmodal Working Group to develop a roadmap for the whole transport sector and set the agenda for the further improvement of cross-modal research development innovation.

<http://www.useitandfoxprojects.eu/>



Need more information

For any feedback, questions or more detailed information about INFRALERT project, please contact:

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The INFRALERT website contains general information about the project, news and upcoming events as well as dedicated pages for most important dissemination documents and press releases.

The website also contains all public deliverables from the project.

Updating news and documents will be added in coming months, after the deadline of deliverables (April and August, 2016).

