

# FIRM

FEHRL INFRASTRUCTURE RESEARCH MAGAZINE

FEHRL

## USE-IT, REFINET AND ECOROADHS H2020 PROJECTS COME TO AN END

p.6-9, 16-17

Final conferences of USE-iT and REFINET held at  
FIRM17, ECOROADHS a month later

## ... WHILE SAFE 10-T AND COEXIST PROJECTS BEGIN UNDER H2020

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Overview of kick-off meetings and first few  
months of progress profiled



# FEHRL Infrastructure Research Meeting 2017 (FIRM17) features countless H2020 and CEDR projects

FEHRL's new SERRP, updated Forever Open Road Resilient roadmap and  
Scanning Tour report also launched at FIRM17 (p. 4)



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**INNOVATION FOR TRANSPORT INFRASTRUCTURE**

Transport infrastructure is the lifeblood of modern society, but often struggles to meet demands and expectations on reliability, availability, maintainability, safety, environment, health and cost. FEHRL's role is to provide solutions for the challenges now faced and anticipate the challenges to come. Through innovation, the operation of transport infrastructure can address society's needs.

**FEHRL** encourages collaborative research into topics such as mobility, transport and infrastructure, energy, environment and resources, safety and security as well as design and production.

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FEHRL Infrastructure Research Meeting 2017 (FIRM17) and launch of new SERRP, updated Forever Open Road Resilient roadmap and Scanning Tour report



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An Infrastructure Innovation Programme



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# WELCOME



► For more information, also see:

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to the tenth issue of FEHRL's Infrastructure Research Magazine (FIRM), which outlines how FEHRL provides transport infrastructure solutions for current and future challenges. In this issue, we feature the highlights from the FEHRL Infrastructure Research Meeting 2017 (FIRM17), held on 5-7th April for some 100 transport infrastructure research experts from Europe and beyond, which featured countless H2020 and CEDR projects, some of which are covered in this magazine. In particular, FIRM17 saw the final conferences of the Horizon 2020 (H2020) USE-iT and REFINET projects, which you can read about on pages 6-9 along with the related FOX and SETRIS projects, as well as sessions on the SKILLFUL project (p. 15), ERA-NET Plus Infravation programme (p.10-11) and since completed ECORoads project (p.16-17).

In addition, FEHRL's new Strategic European Road and cross-modal Research and Implementation Plan (SERRP), updated Forever Open Road Resilient roadmap and new Scanning Tour report of Japan and South Korea were launched at FIRM17 and you can find details of these on our newly-launched website at [www.fehrl.org](http://www.fehrl.org).

Also in this issue, you can read the first details of the SAFE 10-T (p.12) and Co-EXIST (p.18) projects which have just begun under H2020 and updates on the AM4INFRA (p.13), TRA VISIONS 2018 (p.14) and FLOW (p.19) projects.

FEHRL has four key upcoming project events for SKILLFUL, FOX, Infravation and SENSKIN as you can read on the back page of this issue. We are also organising the next International Project Management training course on 10-12th October 2017 at the FEHRL office in Brussels, followed by an information day fully dedicated to H2020 finance on 13<sup>th</sup> October at the same venue so let me know if you are interested in joining this.

We hope you enjoy your read!

Thierry Goger  
FEHRL Secretary General  
[thierry.goger@fehrl.org](mailto:thierry.goger@fehrl.org)



## FIRM17 FEATURES 11 KEY SESSIONS

### Session 1: The future of road business - a public-private enterprise embracing infrastructure and vehicles

The conference started with a strategic session and presentations from keynote speakers about the SERRP, the next EC Framework programme, CEDR, PIARC, ERTRAC and ECTP.

### Session 2: Strategy view - the need to go beyond the borders of the transport modes

This second strategic session involved presentations on ALICE, the European Technology Platform for logistics, followed by updates on the SETRIS and FOX projects.

### Session 3: Final event of REFINET and USE-iT projects

See p. 9 for more details.

### Session 4: Automated connected vehicles, car-sharing and electrification: How to tackle the imminent disruption to mobility their combined deployment will bring?

The second day began with an absorbing round table on automated connected vehicles and electrification, involving the EC (DG Move), CEDR, ERTRAC, FHWA, Siemens and Rijkswaterstaat.

### Session 5: Resilience

This session featured the Forever Open Road 2017 update of the Resilient Road roadmap and the international dimensions of the FOX, USE-iT, SETRIS, REFINET projects and key findings on the 2016 Asian Scanning Tour, as well as the H2020 RESOLUTE project and the Common position paper on CO<sub>2</sub>.

### Session 6: Safety

This sixth session began with the ECORoads project, followed by the CEDR PRACT, EUSight and ESRET projects and the CEDR Road Safety challenges and position paper.

### Session 7: Skills and knowledge transfer

The second day then ended with a workshop on the SKILLFUL project (p.15).

### Session 8: Infravation

The final day began with the Infravation ERA-NET Plus programme, including two of the nine projects - Biorepavement and ECLIPs (p.10-11).

### Session 9: Asset management

This session comprised two projects - RAG-TIME and AM4INFRA, as well as an overview of the CEDR Transnational Road Research Programme 2014 Call on Asset Management and Maintenance.

### Session 10: Inspection & maintenance

This session began with the SENSKIN project, followed by the CEDR PREMIUM project and the AEROBI project.

### Session 11:

### Mobility as a service and active modes

This final session covered the FLOW project and the CEDR MAASiFiE project.



# MESSAGE FROM FEHRL'S PRESIDENT

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## SCIENTIFIC EXCELLENCE AND COOPERATION

Dear FEHRL members and partners,

Things are running fast and the FEHRL members and secretariat carry out a lot of good work every day. Thanks to each and every one of you for your energy and willingness to achieve results in the framework of FEHRL.

The FEHRL General Assembly (FGA) took place in Brussels on 4th April in our office building in Boulevard de la Woluwe. We enjoyed very much being back home in this location after a period of renovation. Of course, the budget, accounts and membership fees were discussed. We also got the opportunity to warmly welcome the Bern University of Applied Sciences as the new member from Switzerland. We are looking forward to fruitful cooperation.

The mandate and aim of ETRA (European Transport Research Alliance) has been discussed for a while and a revised mandate for ETRA was presented to FGA, which FGA gave its support to. This includes FEHRL taking an active role in the Transport Research Arena (TRA) event, meaning being active in finding high-level scientific speakers and taking a key role in communications.

FEHRL and the Federal Highway Administration (FHWA) have been discussing the possibility of FEHRL or FHWA members being partners in FHWA self-funded programmes. The FGA supported that Research Coordinators now discuss and propose suitable project areas for cooperation. The new SERRP will give the framework for the suggested programmes. Working together with FHWA in such specific programmes will enlarge and make more concrete the cooperation between the US and Europe.

FIRM17 was held directly after the FGA. As you can see from page 4, a lot of people came to learn about our research results, discuss and share knowledge. I hope that we get the opportunity to understand and partly sum up the benefits (added value) all these research results will give to the transport system in all our countries.

The FEHRL Scanning Tour 2016 went to South Korea and Japan and focused on 'Infrastructure Resilience'. A lot of lessons were learned and Carline Evans of the Australian Road Research Board (ARRB) has written an impressive and useful report available on the FEHRL website ([www.fehrl.org](http://www.fehrl.org)). Thanks a lot to ARRB and Gerard Waldron for being so helpful in arranging this tour and sharing valuable contacts.

The next European Scanning Tour will be in Europe in September 2017. This time a programme has been devised that allows participants to join for one or two days or take the whole trip to understand more of the latest thinking about autonomous vehicles, what impact they might have on existing infrastructure and see examples. We will also pay attention to the electrification of vehicles and infrastructure and see an example of the delivery of electrical power to heavy vehicles. For more information, contact Martin Lamb at [martin.lamb@maple-consulting.uk](mailto:martin.lamb@maple-consulting.uk).

To conclude this article, I just want remind us of the objectives of FEHRL:

- **To provide scientific input to policy on road and infrastructure matters**
- **To create and maintain an efficient and safe road and infrastructure network**
- **To increase innovation in road and infrastructure construction and related industries**
- **To improve the energy efficiency of road and infrastructure engineering operations.**
- **To protect the environment and improve the quality of life.**

To achieve this, scientific excellence and cooperation are the main tools. FEHRL members provide scientific excellence and FEHRL as an organisation provides arenas for cooperation. This enable us to make a difference.

Marit Brandtsegg  
FEHRL President  
([marit.brandtsegg@vegvesen.no](mailto:marit.brandtsegg@vegvesen.no))

# USE-iT AND REFINET PROJECTS COME TO AN END, WHILE RELATED FOX AND SETRIS PROJECTS CONTINUE



**The 24-month USE-iT (Users, Safety, security and Energy in Transport Infrastructure) Coordination and Support Action (CSA) project's vision is to better understand the common challenges experienced across transport modes, bring representatives of transport modes together to share experience and skills and to develop a set of common research objectives. In the longer term, the ambition is that there will be a vibrant community of stakeholders from a range of transport modes, sharing experiences and technologies, undertaking joint research projects and creating a European transport network that is safer, more secure, with lower carbon emissions and which is focussed on user needs.**

**USE-iT's 30-month 'sister' CSA project, FOX (Forever Open infrastructure across (X) all transport modes), meanwhile, aims to develop a highly efficient and effective cross-modal R&D environment and culture which meets the demanding requirements of transport and connectivity. FOX will identify common needs and innovative techniques in the areas of construction, maintenance, inspection, and recycling & reuse of transport infrastructure.**

USE-iT and FOX have effectively operated as one single project with common meetings due to the synergies that exist between the two and the fact that many partners and third parties on one project were also partners or third parties in the other. The fact that FEHRL was the leader of both projects ensured that this could be undertaken effectively.

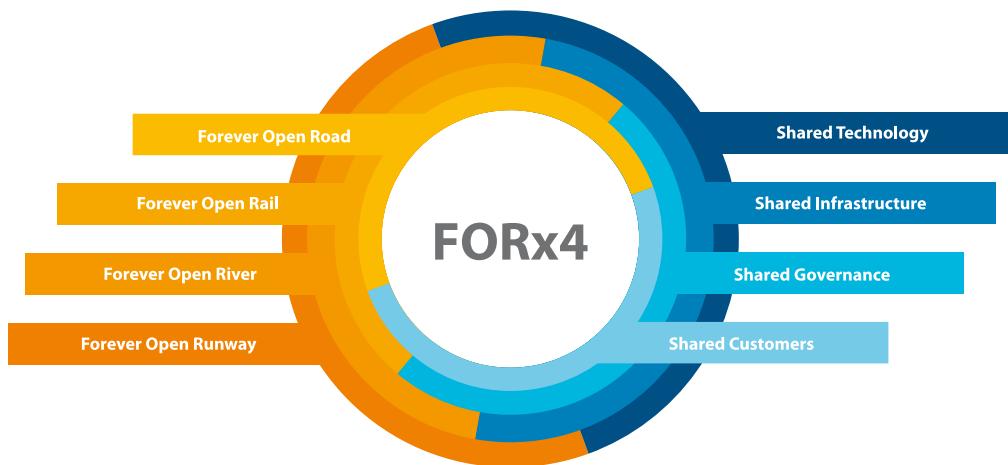
A further 24-month CSA, REFINET (REthinking Future Infrastructure NETworks) had highly complementary objectives in developing research aims that will help improve the construction, operation and maintenance of transport infrastructure in terms of efficiency, safety, security, integration, information and environmental performance. With FEHRL as a partner in REFINET, a relationship has developed with USE-iT and FOX over the past two years, with all three projects sharing a stakeholder list as a mechanism to develop the vision of having a vibrant stakeholder community beyond the lifetime of the projects. There was, for example, a special session at TRA 2016 covering infrastructure innovation from the three projects, whilst REFINET partners have also attended the two USE-iT/FOX workshops in Brussels and members of the USE-iT and FOX consortiums the REFINET workshops in London, Rome and Bucharest.

All three projects started on May 1st 2015, with USE-iT and REFINET finishing on April 30th 2017 and FOX on 31st October. The final conferences of USE-iT and REFINET were held during the FEHRL Infrastructure Research Meeting 2017 (FIRMI17), as you can read on p.9. Owing to the close working relationship between USE-iT and FOX, the final USE-iT Deliverable 5.4 entitled "Summary Report of Recommendations", used as source for this article, also incorporates draft versions of the FOX Deliverables. The latter will be further developed and integrated with the USE-iT and REFINET results in the final FOX Deliverable, which will be submitted in October 2017.

As well as the connections made between these three CSAs, there are also links to other projects such as SETRIS,

## FOX PARTNERS





INFRALERT and Mobility4EU and initiatives such as STRIA, Infrastructure Cloud, the cross-modal ECTP roadmap, and FEHRL's Forever Open Road and FORx4 initiatives.

The SETRIS project, which has now been extended by one year to the end of April 2018, follows up on previous work undertaken by the five European Technology Platforms (ETP) by updating and completing their existing Strategic Research and Innovation Agendas (SRIAs), roadmaps and implementation plans using a new coordinated and integrated approach. SETRIS is an extremely complementary project to FOX and USE-iT, in that whilst they aim to improve the physical infrastructure and management of the infrastructure respectively, SETRIS aims to improve the efficiency of the transport system, through for example increasing the loading of goods vehicles, to maximise capacity and aims to improve hubs to allow easier modal transfer to rail or inland waterways.

The current work undertaken by FEHRL is to develop the Strategic Research Agenda and Implementation Plan for Regional and Long-Distance Freight Transport and Logistics.

In parallel, from 2010, FEHRL had been developing the Forever Open Road (FOR) concept and it became apparent that many of the challenges faced by the road industry such as increased traffic loads, ageing infrastructure and constrained budgets were also common to other modes.

As a result of FOR and with reference to the cross modal research roadmap, the FORx4 (Forever Open Road, Rail, Runway and River) initiative was developed and the cross-modal research roadmap was used as the basis for FEHRL's FORx4 'Point of View' document produced in November 2013.

FORx4 proposes that the four transport modes will have four shared domains, comprising "Infrastructure", "Governance", "Technology" and "Customers".

Both USE-iT and FOX were influenced strongly by FORx4, with FOX largely covering the infrastructure domain across all four modes and USE-iT covering customers, technology and governance in various areas. Both projects will feed into the ongoing FORx4 programme with FEHRL using the results to help further develop the vision, through the development of a full roadmap in 2017-2018.

Additionally, both REFINET and SETRIS will contribute to the development of FORx4, REFINET largely focussing on innovation around the physical infrastructure and SETRIS through focussing on how the freight and passengers can more optimally use the infrastructure across all modes.

Over the course of the USE-iT and FOX projects, a significant number of technologies have been identified, which were validated and improved through stakeholder interviews and a

## LINKS TO CROSS MODAL RESEARCH ROADMAP AND FEHRL'S FORx4

In 2013, the four transport research advisory councils covering road, rail, air and waterborne modes, along with the European Construction Technology Platform (ECTP) published a cross modal research roadmap, establishing a desire to work together and share experience.

### USE-IT PARTNERS



stakeholder workshop in January 2016. These technologies were then prioritised by the partners, along with further interviews and a second stakeholder workshop held in September 2016. A prerequisite was that each research challenge covers at least two transport modes, resulting in a total of 42 challenges identified across the three technical Work Packages (WPs) in USE-iT and the four technical WPs in FOX.

Each of the 42 research challenges were mapped against nine 'drivers influencing co-modal transport research', largely based on those presented in FEHRL's FORx4 'Point of View' document. This method was chosen as a way of integrating challenges from both projects into larger, high-level subjects, and are as follows:

- **Change in transport demand**
- **Globalisation**
- **High costs of operation and use**
- **Ageing infrastructure**
- **Scarcity of natural resources**
- **Decarbonisation of transport and environmental and social impact**
- **Safety**
- **Security**
- **Rapid development of technology and social behaviour \***

It was recognised that a number of research challenges could be relevant to more than one driver; so rather than repeating the information, they were assigned to the driver considered most appropriate and referenced to other drivers that they could impact on. Within each driver, there were research themes derived from the research challenges and various research topics within each research theme.

For ease of presentation, each individual research topic was identified with an icon against the FORx4 modes (road, rail, air, water and multi-modal) and domains (governance, infrastructure, technology and customer) and also the 'level of application' identified in the REFINET project determining the area in which a particular research challenge is most applicable, namely; urban mobility, long distance corridors, multi-modal hubs and a system level (widely applicable in transport infrastructure).

As well as the icons for mode, domain and level of application, the research topics were mapped against a 2017 to 2030+ timeline with arrows showing the stages of

proposed research, development and implementation based on technology readiness levels of <5 (research and development), 6 – 8 (demonstration) and 9 (market introduction and implementation).

Deliverable 5.4, that is available under the "Deliverables" tab at [www.useitandfoxprojects.eu/library](http://www.useitandfoxprojects.eu/library), presents the results of the USE-iT project, integrated with the draft deliverables of the FOX project. Engagement with a range of stakeholders across Europe and beyond has been a key strategy from the outset. The FORx4 roadmap developed will be a means of keeping the projects and networks active beyond the funding period through the use of an initiative that pre-dates the CSAs and which has an established brand.

The research challenges identified in this document will be used as an investment plan to both research funders and as an investment or strategy document for public and private infrastructure owners and operators and contractors. An exploitation and implementation plan (USE-iT Deliverable 5.3) has also been prepared, which outlines the business priorities and risk appetite of the stakeholders and suggests how they might use the results of the project.



For more information on USE-iT and FOX, go to [www.useitandfoxprojects.eu](http://www.useitandfoxprojects.eu) or contact Project Coordinator Thierry Goger at [thierry.goger@fehrl.org](mailto:thierry.goger@fehrl.org) under "FOR x 4 initiative on transport infrastructure" group



For more information on REFINET, see [www.refinet.eu](http://www.refinet.eu) or contact Project Coordinator Alain Zarli at [alain.zarli@cstb.fr](mailto:alain.zarli@cstb.fr)



For more information on SETRIS, see [newrail.org/setris](http://newrail.org/setris) or contact Project Coordinator Belinda Fairbairn at [belinda.fairbairn@ncl.ac.uk](mailto:belinda.fairbairn@ncl.ac.uk)

## REFINET PARTNERS



\* This ninth driver, 'Rapid development of technology and social behaviour' related to issues surrounding disruptive technologies and social acceptance was presented, but no specific research challenges were mapped against it.

**SETRIS PARTNERS****COORDINATORS****SUPPORTED BY****FINAL EVENT OF REFINET AND USE-IT PROJECTS AT FIRM17****REFINET**

The afternoon of the first day of FIRM17 (Wednesday 5th April) started with the REFINET project's final conference. Jesús Rodríguez, PTEC Managing Director, opened the session. Alain Zarli from CSTB and REFINET coordinator presented the multi-modal transport infrastructures approach developed. Savina Carluccio from ARUP summarised the best practices in transport infrastructures and the available technologies with different TRL values. Research and innovation priorities for multimodal transport infrastructures have been identified in REFINET with the coordination of Jesús Isoird and Jon Artenetxe from Tecnalia and were also presented by Alain Zarli. Clemente Fuggini from D'Appolonia presented the recommendations for mobilising R&I programmes in transport infrastructures and a geo-cluster platform, with some conclusions on the lesson learnt from a case study.

Finally, after some minutes of debate, Miguel Segarra from Dragados made the closing remarks highlighting the need to continue the work of REFINET within ECTP in collaboration with other European Technology Platforms.

**USE-IT**

Following a short coffee break, the USE-iT project final conference began with an opening by Thierry Goger of FEHRL and followed swiftly by the following recommendations by each of the Work Package leaders:

- **R&D&I in Safety and Security Isabela Erdelean, AIT**
- **R&D&I in Energy and Carbon Sarah Reeves, TRL**
- **R&D&I in User Information Ewa Zofka, IBDIM**

Finally, Martin Lamb of Maple Consulting explained how FEHRL would build on these achievements to create a fully integrated transport infrastructure.

**Register now for the FOX final conference on 25<sup>th</sup> October 2017 in BASt**

As you can read on the back page of this issue, the FOX projects' Final Conference will be held on the morning of 25<sup>th</sup> October 2017 (from 10:00 to 12:00) at the offices of FOX project partner BASt ([www.bast.de](http://www.bast.de)) near Cologne.



# FIRST TWO INFRAVATION DEMONSTRATION EVENTS ALREADY HELD

**Infravation**  
An Infrastructure Innovation Programme

The focus for 2017 and into 2018 for the ERA-NET Plus Infravation programme is most definitely the demonstration activities being held for each of the nine innovation projects, which gear them up for onward implementation. An Infravation factsheet was published for the FEHRL Infrastructure Research Meeting 2017 (FIRM17) giving a first overview of these activities, where you can see the dates and locations of each one. You can find it at [www.infravation.net/calldocuments](http://www.infravation.net/calldocuments) and here you can see the latest overview of the planned events.

The first two of these nine demonstration events have already taken place for the SEACON project in Tampa, Florida on 3rd-4th May and the BioRePavation project at IFSTTAR in Nantes, France on 6th July 2017. Here we give an overview of these events, as well as details about the 2017 Infravation Annual Event to be held on 25th October 2017 in conjunction with the HEALROAD project's demonstration event.

More details on the events being organised by the other seven projects will be available at [www.infravation.net](http://www.infravation.net).

## OVERVIEW OF INFRAVATION PROJECT DEMONSTRATION ACTIVITIES

3-4 MAY		TAMPA, FLORIDA	7-8 NOVEMBER		MADRID, SPAIN
6 JULY		IFSTTAR/NANTES, FRANCE	NOVEMBER		DELFT, NETHERLANDS
1 SEPTEMBER		CHALMERS/GOTHENBURG, SWEDEN	NOVEMBER		ARIZONA, USA
18 SEPTEMBER		CAMBRIDGE, UNITED KINGDOM TELAVIV, ISRAEL	END OF NOVEMBER		MILAN, ITALY
25 SEPTEMBER		ATLANTA, USA (TBC) MUNICH, GERMANY	12-13 MARCH 2018		BOLOGNA, ITALY
26 OCTOBER		BAST/COLONIE, GERMANY			

## PARTNERS



Risikoministerium für Verkehr und digitale Infrastruktur



Rijksoverheid  
Ministry of Infrastructure and the Environment



Norwegian Public Roads Administration



Precisely Right.





## SEACON FORUM, WORKSHOP AND DEMONSTRATION EVENT ALL HELD OVER TWO DAYS



About 40 people attended the SEACON Forum on the morning of 3rd May 2017. Katerine Petros, on behalf of FHWA and the other funders, opened the Forum and briefly explained the Infravation Programme and its aim. Thierry Goger, on behalf of the Management Group of Infravation, added that the demonstration of the positive results of this first ever trans-atlantic research programme and their impartial assessment in term of Technological Readiness Level are crucial for the Industry and the National Road Authorities. Various presentations of each Work Packages were delivered in order to give a complete picture of the progress of the SEACON to the audience. On 3rd May in the afternoon, a complementary workshop focused on the Halls River Bridge was held at the Florida Department of Transportation. A hundred stakeholders from several States in the USA and a few from Europe participated in the lively presentations, highlighting the technical development and issues related to the demonstration activity.

On the morning of 4th May, a demonstration event was held at the Halls River Bridge Replacement Site supervised by the US-DOT of Florida. Around 50 stakeholders joined the event and could observe the testing of the innovative approach of SEACON, in particular the use of seawater in concrete (non-structural) elements of the bridge.

The afternoon of the 4th was reserved to an assessment of the innovative technologies developed within SEACON. A panel of four experts in the field, chaired by the Scientific Panel of Infravation (Katerine Petros and Thierry Goger), and supported by the experienced team of the Voce Center at FHWA, conducted the first phase of the

assessment. The conclusion of the panel will be provided to the funders of Infravation in order to support the next steps towards the implementation of SEACON. For more information on the events, see [seacon.um-sml.com/news-feed.html](http://seacon.um-sml.com/news-feed.html).

## BIOREPAVATION INTERNATIONAL CONSORTIUM OPENED ITS DEMONSTRATOR AT IFSTTAR'S NANTES SITE



The BioRePavation project, which brings together a number of European countries and the United States, has set itself the goal of demonstrating that biosourced materials can be employed when recycling bituminous materials. To do this, they are testing three techniques that aim to reduce consumption of virgin aggregate and bitumen in pavement construction and maintenance.

An innovative, non-destructive, micro-sampling-based method of monitoring ageing is also being developed. In order to apply these techniques and prove their effectiveness on road networks, BioRePavation built a full-scale demonstrator on the pavement fatigue carousel at Ifsttar's Nantes site. The resulting facility will make it possible to test and evaluate the proposed innovative solutions under real conditions.

In order to raise awareness of these new techniques among the road construction community, the BioRePavation project partners held an official opening day on Thursday 6th July 2017, which included presentations of BioRePavation and related Alterpave project and a visit of Ifsttar's facilities. More than 100 stakeholders worldwide from the public and private sectors attended this absorbing demonstration event. For more information, see [biorepavation.ifsttar.fr/documents-visuals](http://biorepavation.ifsttar.fr/documents-visuals).



- ▶ See [www.infravation.net](http://www.infravation.net) or contact the Call Manager, Richard van der Elburg at [richard.vander.elburg@rws.nl](mailto:richard.vander.elburg@rws.nl) for more information.



## REGISTER TODAY FOR NEXT INFRAVATION ANNUAL EVENT ON 25<sup>TH</sup> OCTOBER 2017

Register today from [www.infravation.net/events](http://www.infravation.net/events) for the 2017 Infravation annual event on the afternoon of Wednesday 25th October 2017, hosted by the German ministry of BMVI at the premises of FEHRL member BASt near Cologne, Germany. This event, to be held on the same day as the H2020 FOX project's final conference (see p.9), will cover presentations by the Management Group and each of the Project Coordinators. This event is one of the following series of events planned for the whole week:

**Monday 23rd October, whole day:**  
EC Collaboration Innovation Days final event  
(see [collaborativeinnovationdays.eu](http://collaborativeinnovationdays.eu))

**Tuesday 24th October, whole day:**  
Infravation Scientific Panel and Project Coordinators meeting (closed)

**Wednesday 25th October, morning:**  
H2020 FOX project final conference

**Wednesday 25th October, afternoon:**  
Infravation Annual Event 2017

**Thursday 26th October, morning:**  
Healroad project demonstration event

**Thursday 26th October, afternoon:**  
Infravation Steering Group meeting (closed)



# SAFE-10-T TO INCREASE THE SAFETY OF EU TRANSPORT INFRASTRUCTURE ACROSS ROAD, RAIL AND INLAND WATERWAY TRANSPORT MODES

## PARTNERS



**The rapid development of information technology, including the widespread deployment of wireless sensor networks, is resulting in the ability for transport infrastructure objects to become smart and communicate their current condition. The proliferation of data provides a unique opportunity for infrastructure safety management to take a significant evolutionary step. By implementing data analytic techniques for transport infrastructure safety and traffic flow applications, the SAFE-10-T project is designed to benefit from this significant opportunity.**



Figure 1. Project Consortium at kick-off meeting in Delft on 10th May 2017.

The 36-month SAFE-10-T project, which started on 1st May 2017, aims to enhance the safety of EU transport infrastructure implemented through an online, multi-modal, safety (decision support) tool.

SAFE-10-T falls under the H2020 topic of MG-3.4-2016 - Transport infrastructure innovation to increase the transport system safety at modal and intermodal level (including nodes and interchanges).

The SAFE-10-T project will develop a Safety Framework to ensure high safety performance while allowing longer life-cycles for critical infra-

structure across the road, rail and inland waterway modes. Moving from considering critical infrastructure such as bridges, tunnels and earthworks as inert objects to being intelligent (self-learning objects), the project will provide a means of reducing sudden failures.

## This will be achieved by:

- The Safety Framework will incorporate remote monitoring data stored in a BIM model that feeds into a decision support framework (DST) that enables decisions to be made automatically with maintenance prioritised for elements exhibiting stress.
- A major advance that will be achieved in the project is that the algorithms at an object level and at a network level will incorporate machine learning to train the system to evolve with time using available monitoring data.
- A trans-disciplinary approach with experts in Artificial Intelligence and Big Data Management working with infrastructure owners, engineers with expertise in risk and modelling and sociologists to make informed decisions.
- Major European infrastructure managers will undertake demonstration projects at critical interchanges and nodes of the TEN-T transport network.

## The project will achieve significant impact in asset management by:

- Moving to intelligent objects that communicate their safety

condition during extreme events and provide a means of reducing sudden catastrophic failure of infrastructure objects.

- Using Open Linked Data formats to manage all data and inputs from other sources. Mitigation actions can be taken and warnings of the increased risk level can be transmitted to other agencies and the public.
- Demonstrating the concept of fully interconnected transport networks on the TEN-T.

## OVERALL APPROACH AND METHODOLOGY

The SAFE-10-T project will move from reactive management of infrastructure to proactive and safer management using advanced predictive tools and data analytics.

The project will be transformative for asset management in the transport sector, bringing together inter-disciplinary experts from the Artificial Intelligence (AI) and data management sectors with leaders in risk-based asset assessment of infrastructure and network modelling. The involvement of major infrastructure end users in the project will allow the developed methodologies to be demonstrated for real-life case study scenarios.

The SAFE-10-T kick-off meeting was held in Delft on 10th May 2017 (Figure 1).



► For more information, see [www.safe10tproject.eu](http://www.safe10tproject.eu) or contact Project Coordinator **Paul Doherty** at [pdoherty@gdgeo.com](mailto:pdoherty@gdgeo.com)

# AM4INFRA PLANS FIRST STAKEHOLDER EVENT IN OCTOBER 2017

**As reported on p. 8 of the last issue of this magazine, AM4INFRA is a 24-month H2020 project supported by the Conference of European Directors of Roads (CEDR) and ProRail, the Dutch national rail agency. The project aims to launch a life cycle and risk based Asset Management framework approach enabling the effective governance of transport infrastructure networks across Europe. Significant progress has taken place so far during 2017 as described here.**

## COMMON LANGUAGE

The objective here is to develop a common language to push forward in cross-modal and cross-border optimisation of transport networks.

A framework architecture for smart governance of infrastructure networks has been designed that connects new investments to available networks. This framework will be followed by specific guidelines that are far more detailed and will be more diversified towards specific challenges or network issues. Both will be tested and validated in three living labs to demonstrate the added value of the common framework to a setting of external stakeholders. The living labs demonstrations are to be completed in March 2018, in time to utilise the TRA2018 event in Vienna to present the results to an (invited) audience of experts in asset management.

## COMMON APPROACH

The current practices and criteria for assessing network investment, improvement, maintenance and operational

needs for a 5 - 10 year horizon were reviewed. The emphasis was on the application of a minimum whole life cost (or life cycle) and risk based approach.

As a first step to proposing a framework for adopting whole life cost models and risk based approaches across Europe, building blocks that should be in place as part of a larger asset management system were outlined.

The building blocks (appropriate governance and processes, whole life cost calculation etc.) highlight the essence of established best practice for managing risk within an asset management framework. It is hoped that the simple outline approach will encourage a basic level of investment and consistency across the TEN-T network with the aim of harmonising asset management across the different modes of transport in Europe.

The next task will be to provide case examples of good practice for applying whole life cost and risk based approaches on strategic, tactical and operational levels, as well as a framework for adopting whole life cost models and risk based approaches across Europe.

## COMMON DATA AND INFORMATION MANAGEMENT

To support improvement of asset data management across transportation network stakeholders, an Asset Data Dictionary (ADD) has been designed as a first pillar of an asset data common approach. The ADD identifies which are the relevant information and related attributes that can constitute a common data dictionary for asset data management.

The next step will be to design the functional and technical aspects of a possible Asset Information Management System. The application of this system will take place on a specific road stretch of a TEN-T itinerary.

## UPCOMING ACTIVITY/EVENT

The first Stakeholder event of the project will take place in October 2017. The main focus will be

- the guideline for the use of the framework architecture, case examples of good practice for applying whole life cycle, as well as business blue print of an asset information management core system.
- to present and discuss the three living labs (Italy: Rome Ringway-data and information framework; Netherlands: Eindhoven hub - integrated common framework and UK: Heathrow-London Ring-whole life cycle and risk based models).

## PARTNERS



► For more information, see [www.am4infra.eu](http://www.am4infra.eu) or contact Project Coordinator Jenne van der Velde at [jenne.vander.velde@rws.nl](mailto:jenne.vander.velde@rws.nl)

# STILL TIME TO APPLY TO TRA VISIONS 2018 YOUNG AND SENIOR RESEARCHER COMPETITIONS



**Young and Senior researchers from all over Europe invited to submit innovative transport concepts by the end of October 2017.**

**It is not too late to still apply to the European-funded competition TRA VISIONS 2018. Young and senior researchers throughout Europe are invited to submit innovative concepts on future transport matters by the end of October 2017 in order to enhance efficient and sustainable transport and mobility of people and goods.**

Ever more people and goods are moving around the world in constantly shorter timeframes. This makes innovative transport solutions an important necessity. What could future transport look like? How can existing systems and infrastructure cope with the rising strain, be it road, rail, waterborne or cross-modal transport systems? Which are efficient and sustainable solutions to the arising questions on mobility issues? The European project TRA VISIONS 2018 invites young and senior researchers from all over Europe to enter their ideas of all kind concerning these and other questions to the competitions.

For the young researcher competition, the deadline for participants to develop and submit their full idea is 30th October 2017 where they need to provide a report, a short presentation and a project poster accompanied by an optional short video.

Senior researchers can still enter the competition by direct submission of a recently published technical paper to the TRA VISIONS 2018 website ([www.travisions.eu](http://www.travisions.eu)). To be eligible a paper must be technical in nature and relate to EU funded transport research.

The submission phase will be followed by an Evaluation of Ideas period during which a judging panel comprising experts from universities, research institutes and industry will determine which are the top three ideas per transport mode (road, rail, waterborne and cross-modality).

The final winners of the competitions will be announced during a prestigious award ceremony at the Transport Research Arena (TRA) Conference 2018 in Vienna on 16-19th April 2018 (see [www.traconference.eu](http://www.traconference.eu) for more details).

The concepts must be submitted under one of the conference topics, which cover the general areas of:

1. Environment and Energy Efficiency
2. Vehicles & Vessels – Design, Development and Production
3. Advanced Propulsion Systems
4. Smart Urban Mobility & Logistics
5. People Mobility – Systems and Services
6. Freight Transport and Logistics
7. Transport Infrastructure
8. Connected and Automated Transport
9. Digital Technologies for Transport
10. Safe, Secure and Resilient Transport Systems
11. Human Dimension in Transport
12. Socio-Economics, Innovation and Policy

dation WEGEMT - A European Association of Universities in Marine Technology and Related Sciences (WEGEMT), BALance Technology Consulting GmbH, Politecnico di Torino (POLITO), Newcastle University (UNEW), FEHRL, Austria Institute of Technology (AIT) and University College London (UCL).

The award ceremony takes place during the TRA conference, which is held every two years and aims at getting science, research and industry closer together and pointing out challenges and opportunities they can efficiently face together in order to create an efficient and sustainable mobility of people and goods.



► For more information, contact **George Smyrnakis** at [george.smyrnakis@newcastle.ac.uk](mailto:george.smyrnakis@newcastle.ac.uk), look up **TRA Visions** on Facebook, Twitter or Linked In or see [www.travisions.eu](http://www.travisions.eu)

## PARTNERS





# SKILLFUL ASSESSES THE FUTURE REQUIREMENTS FOR SKILLS AND JOBS ACROSS TRANSPORT MODES

As reported in the last issue of this magazine, the SKILLFUL (Skills and competences development of future transportation professionals at all levels) is a 36-month H2020 project which started on 1st October 2016. The project is following a four-stage procedure:

1. **The identification of future needs and gaps:** This includes the future trends and impact on jobs likely to affect the European Transportation system. Following on from this, training methodologies and approaches will be identified and developed to meet the emerging and future needs of transportation professionals
2. **The development of training schemes to meet those needs:** The implementation and development stage of the project, i.e. the design of appropriate training/education modules for key actors in the transport sector to fulfil their emerging and foresighted required competences and skills.
3. **The testing of the most promising new training/learning schemes for each target group:** The verification and optimisation stage. The selected training schemes will be assessed by experts and users in order to prove the project's concept and methodologies, as well as to evaluate its future impacts.
4. **Identification and proposal of new business roles in the education and training chain, such as the ones of "knowledge aggregator", "training certifier" and "training promoter"**

Through a series of interviews with leading experts, workshops and extensive literature review the following results regarding the above-mentioned stages 1 and 2 have been achieved by the project:

- **Identification of the key paradigm shifters and game changers in the future transportation ecosystem, key enabling**

and supporting technologies, emerging novel services and service bundles that will shape the future transportation sector and the emerging business scenarios and opportunities, expected to change the working ecosystem of transport.

- First version of future scenarios on skills and competences
- Critical review of the educational and training systems and mechanisms in the Transportation sector
- Identification and analysis of new training/educational methodologies and schemes
- Common template for the development and validation of novel training schemes

A series of workshops have been organised which are focused primarily on stage 1:

A workshop on 6th April 2017, in Brussels, Belgium, during the FIRM 17 conference (see p.4) to discuss and debate the initial findings regarding the future trends in transport systems and their job impact assessment.

A second workshop on Rail took place on 6th April 2017 in Berlin, Germany during the 4th UIC World Congress on Rail Training (WCRT 2017) with more than 20 participants representing various fields and 11 countries. This workshop was the opportunity to present the first results regarding the review of current educational and training systems for workers in the rail sector, enhance the results with the participants input, discuss the future trends in the rail global market and the new emerging skills in the rail sector and the future training requirements and scenarios.

An Intermodal Workshop took place on 22nd May 2017 during the Mobility4EU mid-event, jointly organised in Brussels by Mobility4EU and MIND-SETS projects. This workshop for WP2 was hosted in the conference "Towards user-centric transport in Europe. Challenges, solutions and collaborations" and collected feedback on gaps and opportunities for intermodal transport jobs.

Three other workshops are scheduled this year:

1. An air workshop on 29th August 2017 (hosted by the WG5 ACARE meeting in Brussels)
2. A road workshop - Future transport education: Challenges in road transport employment on 26th September 2017 in Thessaloniki, Greece
3. A maritime workshop in Valencia, Spain in September (no exact date yet)

As you can read on the back page, the first SKILLFUL Conference will take place on 20th October 2017 in Brussels.

► For more information, see [www.skillfulproject.eu](http://www.skillfulproject.eu) or contact Project Coordinator Thierry Goger at [thierry.goger@fehrl.org](mailto:thierry.goger@fehrl.org) 

## PARTNERS





# ECORoads PROJECT COMES TO AN END WITH FINAL REPORT AND FINAL CONFERENCE

## WHAT IS ECORoads?

**A COMPREHENSIVE APPROACH TO MAKING TUNNELS AND ROADS SAFER**

**ECORoads (Effective and Coordinated Road Infrastructure Safety Operations), is a H2020 funded project that aims to overcome the barrier established by a formal interpretation of the two Directives 2008/96/EC (on road infrastructure safety management) and 2004/54/EC (on tunnel safety inspections), that in practice do not foresee the same Road Safety Audits/Inspections (RSA/RSI) to be performed on open roads and in tunnels.**

To overcome this barrier, the project will establish a common enhanced approach by applying the concepts (RSA/RSI) of the Directive 2008/96/CE to tunnels and in transition areas between tunnels and open roads, without jeopardising (but rather complementing) the usual tunnel safety management operations.

## BENEFITS OF JOINT TUNNEL AND OPEN ROAD SAFETY OPERATIONS OUTLINED IN ECORoads FINAL REPORT

Joint safety operations involving tunnel and open road safety experts are possible, useful and their costs could be low if well planned, according to the final report of the ECORoads project.

The benefits are particularly relevant in transition areas between open roads and tunnels according to the report.

Including international experts in the inspection teams also adds value, say the authors.

The report's conclusions are based on the findings of the two-year international ECORoads project. Five joint safety operations were performed in five different European road sections on open roads, transition areas and in tunnels. The operations were conducted by international teams composed of road and tunnel safety experts. The operations involved 17 experts 42 observers and 5

infrastructure managers over the period from March to October 2016.

The final report also recommends that EU Member States, as supervisory authorities, ensure the mutual recognition of Road Safety Auditors and Road Safety Inspectors certified by other Member States and suggests that current European regulations on infrastructure and tunnel safety could be extended to roads beyond the main European motorways (TEN-T).

The report will be available on the ECORoads website at [www.ecoroadsproject.eu](http://www.ecoroadsproject.eu)

## ECORoads FINAL CONFERENCE – 10TH MAY 2017

The ECORoads final conference took place in Brussels, Belgium on 10th May 2017 with over 80 experts and representatives of national governments and European institutions in attendance.

The aim of the event was to present the final guidelines resulting from the



experimental phase of the five joint safety operations conducted until October 2016, as well as recommendations for the application of Road Safety Audit (RSA) and Road Safety Inspection (RSI) concepts.

In his concluding remarks, Carlo Polidor of AIPSS explained that the ECORoads project aimed to produce recommendations that are significant, possible, useful, cheap and international.

- **Significant** because the outcomes are the result of a huge amount of work carried out by major European players which consisted of both workshops and on-site visits
- **Possible** because the practical experience from the joint operations has proved common visits can work and deliver results
- **Useful** since there was unanimous consent from the road managers and experts alike that the joint operations in portal areas represent an added value
- **Cheap** since it mainly involves having an additional expert in tunnel inspections
- **International** since experience showed that having a foreign expert does not necessarily imply more difficulties and has shown to add value.



► For more information, contact Project Coordinator Adewole Adesiyun at [adewole.adesiyun@fehrl.org](mailto:adewole.adesiyun@fehrl.org) or see [www.ecoroadsproject.eu](http://www.ecoroadsproject.eu)

The conference proceedings and presentations can be downloaded from the ECORoads website at [www.ecoroads-project.eu/news/overview-of-ecoroads-final-conference-in-may-2017](http://www.ecoroads-project.eu/news/overview-of-ecoroads-final-conference-in-may-2017)

#### FINAL STAKEHOLDER WORKSHOP - 21ST FEBRUARY 2017

Ahead of the above-mentioned final conference, the ECORoads project team gathered stakeholders from across Europe to assess the draft project guidelines and hear feedback on the last two of five joint-safety operations which took place at the Krrabe tunnel in Albania and the Straževica tunnel in Serbia.

More specifically, the project team wished to explain to end-users, i.e. road authorities and operators the methodology behind the ECORoads project which led to the establishment of the draft guidelines for performing joint visits in tunnels.

The workshop was attended by 50 participants (both internal and external stakeholders). Given that the workshop was specifically targeted at road authorities and operators, the project liaised closely with the EC, which informed the Members of the Infrastructure Safety and Tunnel Committees about the workshop and circulated the first draft of the guidelines. The project partners also used their own networks to target relevant stakeholders. As a result, the workshop gathered representatives from 14 European road administrations in addition to road operators and other road safety professionals and the EC.

The workshop was structured around two main thematic sessions, a first session dedicated to providing the participants with an overview of the project and in particular, the practical steps that the project has undertaken to arrive at certain guidelines; and a second session on presentation of the guidelines followed by discussion with end-users. Interested parties were also invited to submit written feedback after the workshop, ahead of publication of the final conference and publication of the final guidelines.

The workshop proceedings and presentations are also available on the ECORoads website at [www.ecoroads-project.eu/news/ecoroads-projects-hosts-third-workshop-in-brussels](http://www.ecoroads-project.eu/news/ecoroads-projects-hosts-third-workshop-in-brussels).

#### PARTNERS





# CoEXIST: ENABLING CITIES TO GET AUTOMATION-READY



 CoEXIST

**On 8th June 2017, the new H2020 CoEXIST project kicked off in Versailles, France. The project aims at preparing cities and mobility stakeholders to get ready for a shared road network with an increasing number of connected and automated vehicles.**

CoEXIST is a project about "Automation-ready" transport models for the coexistence of connected and automated vehicles (CAVs) with conventional vehicles. CoEXIST will run from May 2017 to April 2020 and will develop an automation-ready **framework** for road authorities. To achieve its objective, both microscopic and macroscopic traffic models that take the introduction of connected and automated vehicles (CAVs) into account are being developed through CoEXIST.

In order to assess the "Automation-readiness" of their locally-designed use cases, the **tools developed** in CoEXIST are **tested** by road authorities in the four project cities:

- Helmond (NL)
- Milton Keynes (UK)
- Gothenburg (SE)
- Stuttgart (DE)

## WHY COEXIST?

AV manufacturers are planning for the market introduction of vehicles with more and more automation. But although steps towards the deployment of CAVs are progressing fast, the success of the transition towards automated vehicles will largely be determined by the acceptance of stakeholders that have so far mostly not been part of the debate: urban road authorities and others with a stake in urban road infrastructure. Consequently, most

European urban road infrastructure authorities are ill-prepared for the introduction of this new mode on their road network, because their road infrastructure is only designed for conventional vehicles.

In this context, CoEXIST will increase the capacity of road authorities and other urban mobility stakeholders to get ready for the transition towards a shared road network with increasing levels of automated vehicles and to plan accordingly.

In this project, FEHRL will focus on engaging its members and network to contribute to:

- Developing a trans-disciplinary approach to the deployment of CAVs on urban road networks by bringing together leading networks for road research. The results will be summarised in an automation-ready framework for road authorities
- Extending the existing microscopic and macroscopic simulation tools of the market leader in transport simulation models by developing model-based default behavioural parameters for CAVs with the control logics of leading organisations in the field of AV technology
- Creating a new understanding of the impact CAVs have on road infrastructure by developing an impact assessment tool that can support the creation of the first Automation-ready road infrastructure design recommendations
- Preparing eight use cases representing a diverse range of road infrastructure and their context in four road authorities

that are national automation champions

- Disseminating activities to ensure uptake and exploitation of project results
- Linking to existing CAV research projects

The project is coordinated by Rupprecht Consult.



► For more information, see [www.H2020-CoEXIST.eu](http://www.H2020-CoEXIST.eu), follow CoEXIST on Twitter @H2020\_CoEXIST or contact Project Coordinator Syrus Gomari at [s.gomari@rupprecht-consult.eu](mailto:s.gomari@rupprecht-consult.eu) or Bernard Gyergyay at [b.gyergyay@rupprecht-consult.eu](mailto:b.gyergyay@rupprecht-consult.eu)   

## PARTNERS

GROUPE RENAULT

FEHRL



City of Gothenburg



Gemeente Helmond



PTV GROUP  
the mind of movement

University of Stuttgart  
Germany



tass international



INSTITUT  
VEDECOM  
DU VÉHICULE DÉPARFAIT ET  
COMMUNAUTÉ DE RECHERCHE

vti



## HOW WALKING AND CYCLING REDUCE CONGESTION

**What happens when you remove a car lane to put in a new bicycle lane? Or you give pedestrians more time to cross a busy road? The CIVITAS FLOW project has published a new collection of Quick Facts from cities who measured the impact of walking and cycling measures on congestion.**

FLOW has collected 15 Quick Facts to provide cities with evidence of how walking and cycling measures can not only improve conditions for pedestrians and cyclists, but also reduce congestion. From a FLOW survey, the project team knows that nearly half of European political and administrative decision makers worry about congestion when introducing walking (41%) and cycling (48%) measures. But there is growing evidence that walking and cycling measures can actually help reduce congestion in cities. The FLOW Quick Facts describe some surprising results about overall transport efficiency that have been achieved while improving conditions for walking and cycling.

## NARROWING ROADS IN LISBON TO REDUCE CROSSING DISTANCE FOR PEDESTRIANS DOES NOT INCREASE CONGESTION:

FLOW partner city Lisbon reduced the crossing distance and the curve radii on busy Alexandre Herculano Street in the city centre. This change in the intersection layout makes pedestrians feel safer (+18%) and less pressured to rush across the street (-14%). This widening of the sidewalk did not increase congestion despite the reduction of road space for cars.

So rather than fearing increased congestion when they improve conditions for walking and cycling, the project hopes that city officials are inspired by the FLOW Quick Facts to make bold decisions for their cities' streets and for the liveability of their cities. Active travel can be part of the solution to increase capacity and improve the flow of traffic – for everyone.

Download the FLOW Quick Facts at [h2020-flow.eu/fileadmin/user\\_upload/Deliverables/15\\_quick\\_facts\\_eng\\_FINAL.pdf](http://h2020-flow.eu/fileadmin/user_upload/Deliverables/15_quick_facts_eng_FINAL.pdf)

## ABOUT FLOW:

Despite the acknowledged benefits of walking and cycling in terms of health, travel-time reliability and cost effectiveness, the effects of walking and cycling on urban road congestion are still under-researched. FLOW is working toward a paradigm shift wherein non-motorised transport, often seen from a transport policy perspective simply as a nice "extra", is placed on an equal footing with motorised modes in its ability to reduce urban congestion.

FLOW is a CIVITAS H2020 research and innovation project running under the topic of MG-5.3-2014 – tackling urban road congestion from May 2015 to April 2018.

FLOW has developed a user-friendly multimodal analysis methodology, involving transport modelling, to assess the impact of walking and cycling measures on transport network performance and to reduce congestion. FLOW's ideas are being tested in its partner cities of Budapest, Dublin, Gdynia, Lisbon, Munich and Sofia.

## PARTNERS



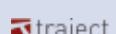
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FEHRL



BUDAPEST UNIVERSITY OF TECHNOLOGY



Wuppertal Institut



City of Munich



► For more information, see [www.h2020-flow.eu](http://www.h2020-flow.eu) or contact Project Coordinator Kristin Tovaas at [k.tovaas@rupprecht-consult.eu](mailto:k.tovaas@rupprecht-consult.eu) or Bonnie Fenton at [b.fenton@rupprecht-consult.eu](mailto:b.fenton@rupprecht-consult.eu)

**FRIDAY 20<sup>TH</sup> OCTOBER 2017**

## FIRST SKILLFUL PROJECT CONFERENCE



Register today for the first SKILLFUL project conference, which will take place from 10am-3pm on 20th October 2017 at the Belgian Road Safety Institute (BRSI), Chaussée de Haecht 1405, 1130 Brussels.

The aim of the conference is to present the results of the first year of the project as well as the future plans which includes an overview of the planned pilot tests. The conference aims to gather the views of end-users (SMEs, research centres, universities etc), suppliers (training centres etc) as well as policy makers so that they are able to influence the project outcomes.

- ▶ For more information or to register, contact Project Officer Claudia Ciuca at [claudia.ciuca@fehrl.org](mailto:claudia.ciuca@fehrl.org) or see the SKILLFUL website ([www.skillfulproject.eu](http://www.skillfulproject.eu)) or Linked In group "SKILLFUL - Skills and competences development of future transportation professionals at all levels".

**WEDNESDAY 25<sup>TH</sup> OCTOBER 2017 (AFTERNOON)**

## 2017 INFRAVATION ANNUAL EVENT



Register today for the 2017 InfraVation annual event on the afternoon of Wednesday 25th October 2017 hosted by the German ministry of BMVI at the premises of FEHRL member BASt near Cologne, Germany (Brüderstraße 53, D-51427 Bergisch Gladbach).

This event, on the same day as the FOX project's final conference, will cover presentations by the Management Group and each of the Project Coordinators. This event is one of the following series of events planned for the whole week (read more on p.11).

- ▶ For more information or to register, contact Project Officer Claudia Ciuca at [claudia.ciuca@fehrl.org](mailto:claudia.ciuca@fehrl.org) or see [www.infravation.net/events](http://www.infravation.net/events) or Linked In group "ERA-NET Plus InfraVation 2014 Call".

**WEDNESDAY 25<sup>TH</sup> OCTOBER 2017 (MORNING)**

## FOX PROJECT FINAL CONFERENCE



Come to the FOX project's final conference on the morning of Wednesday 25th October (10:00 to 12:00) at FEHRL member BASt near Cologne, Germany (Brüderstraße 53, D-51427 Bergisch Gladbach).

The conference will present all the project results, as well as the next steps for implementation and exploitation. It is just one of a series of events planned for the whole week (see InfraVation annual event below)

- ▶ For more information or to register, contact Project Officer Migte Paliukaite at [migte.paliukaite@fehrl.org](mailto:migte.paliukaite@fehrl.org) or see the FOX website ([www.useitandfoxprojects.eu](http://www.useitandfoxprojects.eu)) or Linked In group "FOR x 4 initiative on transport infrastructure".

**WEDNESDAY 8<sup>TH</sup> NOVEMBER 2017**

## FIRST SENSKIN PROJECT WORKSHOP



Come to the first SENSKIN workshop, to be held on Wednesday 8th November 2017 at the BluePoint Brussels (formerly DIAMANT Centre), 80 Bd. A. Reyers, 1030 Brussels. This workshop aims to analyse the functional and operational requirements of the SENSKIN system based on the needs of bridge owners and operators, as well as the methodology of the SENSKIN monitoring system.

To facilitate and enhance knowledge exchange between practitioners in the field of Structural Health Monitoring (SHM), a number of monitoring systems already being used, as well as those currently being developed, will be presented. This will provide input into the panel discussion, which will discuss among others the latest trends in SHM, how to make SHM more prominent in bridge monitoring, etc.

- ▶ For more information or to register, contact Project Officer Claudia Ciuca at [claudia.ciuca@fehrl.org](mailto:claudia.ciuca@fehrl.org) or see the SENSKIN website ([www.senskin.eu](http://www.senskin.eu)) or Linked In group "SENsing SKIN for Monitoring-Based Maintenance of the Transport Infrastructure".

**FEHRL**

