



Contact: Catherine Birkner
Company: FEHRL
Tel.: 02/775 8244
Email: catherine.birkner@fehrl.org

Press Release

SENSKIN: 'SENSing SKIN' for Monitoring-Based Maintenance of the Transport Infrastructure

First prototype of the sensor device and its data acquisition system developed in the first 18 months of SENSKIN.

Brussels, Belgium, 2nd February 2017. SENSKIN is a 42-month Horizon 2020 project implemented by 13 partners from 7 countries. A main objective of the project consortium is the development of a skin-like sensor that offers spatial sensing and can monitor large strains. Emerging Delay Tolerant Network technology is applied, so that the measurements of the sensors can be transmitted to the control even under difficult conditions, such as in the case of an earthquake, where some communication networks are inoperable.

The sensor measurements provide input for structural assessment, while a dedicated Module evaluates the rehabilitation options. The whole system will be integrated to provide decision support on the timing and type of rehabilitation based on the identified damage, structural condition and available rehabilitation options. The system will be field evaluated in the Bosphorus 1 bridge in Istanbul with an average daily traffic of 200,000 vehicles and a bridge on the Greek Egnatia Motorway that connects Europe to Asia.

The project officially launched its activities in June 2015. During the first 18 months of the project, the partners derived user requirements and, based on these, designed the prototype of the skin-like sensors and the data acquisition unit, provided proof of concept of the communication system and are finishing the prototypes of the communication, structural and rehabilitation modules.

The sensors show quite a linear output in a range of strains between 0 to 20%, which is unique in the market, as conventional sensors fail at strains of no more than 2%, while they can monitor both strains and crack openings (replacing both strain gauges and crack meters). Additionally, this sensor requires little power to operate, is capable of being installed on an irregular surface, is less expensive than existing sensors and allows simple signal processing - including the ability to self-monitor and self-report.

Structural assessment is based on detailed finite element analyses of the monitored bridge that have been developed, while the selection of rehabilitation methods takes into account economic and environmental considerations.





Project contacts:

Coordinator
Dr. Angelos Amditis
Institute of Communication and Computer Systems
(ICCS)
Email: a.amditis@iccs.gr

Communication Manager
Catherine Birkner
Forum of European National Highway Research
Laboratories (FEHRL)
Email: catherine.birkner@fehrl.org



Project Fact Sheet:

Duration: 42 months (June 1, 2015 - December 1, 2018)

**Total budgeted/
EC contribution:** 3,883,041€

Coordinator: Institute of Communication and Computer Systems (ICCS), a.amditis@iccs.gr

Partners:

- University of Potsdam, Germany
- Egnatia Odos S.A., Greece
- RISA GmbH, Germany
- TECNIC S.p.A., Italy
- Democritus University of Thrace, Greece
- Mistras Group Hellas A.B.E.E., Greece
- University of Stuttgart, Germany
- TRL Ltd, UK
- State Enterprise State Road Scientific Research Institute Named After M. P. Shulgin, Ukraine
- Forum Des Laboratoires Nationaux Europeens De Recherche Routiere, Belgium
- Teletronic Rossendorf GmbH, Germany
- Turkish General Directorate of Highways, Turkey



This project has received funding from the European Union's Horizon 2020 Programme under grand agreement no 635844.

Website: www.senskin.eu

Linked In: <https://www.linkedin.com/groups/7003026>

