

PROJECT

## SMART2

### Advanced integrated obstacle and track intrusion detection system for smart automation of rail transport

**Funding:** European (Horizon 2020)

**Duration:** Dec 2019 - Nov 2022

**Status:** Ongoing

**Total project cost:** €1,708,738

**EU contribution:** €1,499,529



**Call for proposal:** H2020-S2RJU-OC-2019

[CORDIS RCN : 226340](#)

#### Objectives:

SMART2 project will build on the results achieved in project SMART by advancement, innovation and implementation of SMART2 on-board long-range all-weather obstacle detection (OD) and track intrusion detection (TID) system. 2 new systems will be also researched, innovate and developed: advanced SMART2 trackside (TS) /airborne OD&TID systems. All 3 systems will be integrated into a holistic OD&TDI system via interfaces to central Decision Support System (DSS).

A holistic approach to autonomous obstacle detection for railways would enable increased detection area including areas behind a curve, slope, tunnels and other elements blocking the train's view on the rail tracks, in addition to a long-range straight rail-tracks OD. SMART2 platform will be flexible and open for interfacing additional OD&TDI modules based on future technologies.

SMART2 project aims at developing a working prototype of the foreseen holistic OD&TDI that will be evaluated in different real-world railway use-case scenarios (TRL 6/7).

The SMART2 will review and assess the relevant requirements, including existing ones (in regulation or related to current technologies), as well as those relating to emerging technologies (as being defined in past and ongoing R&D projects). Based on this analysis, a new set of lower complexity requirements will be proposed for a harmonised approach concerning all systems involved in the implementation of ATO GoA 3/4, in general, and, particularly for the OD&TID System.

#### Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

#### Lead Organisation:

**Universitaet Bremen**

**Address:**

Bibliothekstrasse 1  
28359 Bremen  
Germany

**EU Contribution:** €420,625

#### Partner Organisations:

**Ohb Digital Services GmbH****Address:**

LISE-MEITNER-STR. 2  
28359 Bremen  
Germany

**Organisation Website:**

<http://www.ohb-system.de>

**EU Contribution:** €240,100

**Univerzitet U Nisu****Address:**

UNIVERZITETSKI TRG 2  
18000 NIS  
Serbia

**Organisation Website:**

<http://www.ni.ac.yu>

**EU Contribution:** €230,125

**Fokus Tech Napredne Tehnologije Doo****Address:**

ULICA ZOFKE KVEDROVE 9  
3000 CELJE  
Slovenia

**EU Contribution:** €102,804

**The University Of Newcastle Upon Tyne****Address:**

Kensington Terrace 6  
NEWCASTLE UPON TYNE  
NE1 7RU  
United Kingdom

**Organisation Website:**

<http://www.ncl.ac.uk/>

**EU Contribution:** €233,750

**Universitatea Tehnica Cluj-Napoca****Address:**

STR MEMORANDUMULUI 28  
400114 CLUJ NAPOCA  
Romania

**Organisation Website:**

<http://users.utcluj.ro/~gorgan>

**EU Contribution:** €126,875

**Harder Digital Sova D.o.o. Nis****Address:**

BULEVAR CARA KONSTANTINA 80  
18000 NIS

Serbia

**EU Contribution:** €145,250

### **Technologies:**

Rail operations

Obstacle detection and automatic braking

**Development phase:** Demonstration/prototyping/Pilot Production

### **STRIA Roadmaps:**

Cooperative, connected and automated transport, Network and traffic management systems, Other specified

**Transport mode:** Rail transport

**Transport sectors:** Passenger transport, Freight transport  
Safety/Security, Other

**Transport policies:** specified

**Geo-spatial type:** Other