

PROJECT

## RESIST

### RESilient transport InfraStructure to extreme events

**Funding:** European (Horizon 2020)

**Duration:** Sep 2018 - Aug 2021

**Status:** Complete

**Total project cost:** €4,956,810

**EU contribution:** €4,956,810



[CORDIS RCN : 215997](#)

#### Objectives:

The overall goal of RESIST is to increase the resilience of seamless transport operation to natural and man-made extreme events, protect the users of the European transport infrastructure and provide optimal information to the operators and users of the transport infrastructure.

The project will address extreme events on critical structures, implemented in the case of bridges and tunnels attacked by all types of extreme physical, natural and man-made incidents, and cyber-attacks. The RESIST technology will be deployed and validated at 2 pilots in real conditions and infrastructures.

#### Methodology:

RESIST will use risk analyses and leverage and further develop recent exploitable research results in robotics, driving under panic, sensing and communications, to dramatically improve the speed and effectiveness, while reducing the cost, of structural vulnerability assessment, situation awareness, response operations and increased users' protection under extreme events towards a high level of resilience of the transport infrastructure at 3 levels:

1. increased physical resilience of bridges/tunnels by robotic inspection and predictive analytics;
2. restoration of services/routes back to normal quickly and permission of a continuous flow of passengers and freight across different modes of transport soon after an extreme event, which will be achieved by rapid and accurate robotic damage assessment after extreme physical events, cyber security solutions, alternative secure and continuous communication under emergency operations (including integration of terrestrial and satellite systems) and increased cross-modal flexibility;
3. clear and effective communication of transport operators and users, emergency responders and the public in the vicinity, to minimise the impact of the disruption on people and businesses, by exploiting real-time data, available networks, social media and mobile technologies to allow for real-time emergency information dissemination.

#### 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)

**Other programmes:** MG-7-1-2017 Resilience to extreme (natural and man-made) events

#### Lead Organisation:

**Institute Of Communication And Computer Systems**

**Address:**

Patission  
10682 Athens  
Greece

**Organisation Website:**

<http://www.iccs.gr>

**EU Contribution:** €576,875

**Partner Organisations:****Egnatia Odos Ae****Address:**

ChIm Thessalonikis-Thermis  
57001 Thessaloniki  
Greece

**Organisation Website:**

<http://www.egnatia.gr/>

**EU Contribution:** €312,500

**Fundacion Andaluza Para El Desarrollo Aeroespacial****Address:**

Calle Torneo 26  
41002 Seville  
Spain

**EU Contribution:** €374,375

**Technische Universitaet Graz****Address:**

Rechbauerstrasse  
8010 Graz  
Austria

**Organisation Website:**

<http://www.tugraz.at>

**EU Contribution:** €199,960

**Logisystems Sprl****Address:**

AVENUE DE L HIPPODROME 144  
1970 WEZZEMBEKK OPPEM  
Belgium

**EU Contribution:** €151,250

**Risa Sicherheitsanalysen Gmbh****Address:**

Krumme Strasse  
10627 Berlin  
Germany

**Organisation Website:**

<http://www.risa.de>

**EU Contribution:** €423,250

**European Dynamics Luxembourg Sa**

**Address:**

RUE JEAN ENGLING 12  
1466 LUXEMBOURG  
Luxembourg

**EU Contribution:** €505,750

**Foundation For Research And Technology****Address:**

N Plastira Str 100  
1527 HERAKLION  
Greece

**Organisation Website:**

<http://www.iceht.forth.gr>

**EU Contribution:** €231,250

**Ben-Gurion University Of The Negev****Address:**

Office Of The President - Main Campus  
Beer Sheva 84105  
Israel

**Organisation Website:**

<http://www.bgu.ac.il>

**EU Contribution:** €175,175

**D. Mpairaktaris Kai Synergates-Grafeion Technikon Meleton Etaireia Periorismenis Efthynis****Address:**

PESMATZOGLOU 17  
14561 ATHINA  
Greece

**EU Contribution:** €222,825

**Forum Des Laboratoires Nationaux Europeens De Recherche Routiere****Address:**

Boulevard de la Woluwe 42  
1200 Brussels  
Belgium

**Organisation Website:**

<http://www.fehrl.org>

**EU Contribution:** €247,313

**Sphynx Technology Solutions Ag****Address:**

GUBELSTRASSE 12  
6300 ZUG  
Switzerland

**EU Contribution:** €250,000

**Consiglio Nazionale Delle Ricerche**

**Address:**

Piazzale Aldo Moro  
185 Roma  
Italy

**Organisation Website:**

<http://www.cnr.it>

**EU Contribution:** €218,250

**Johann Wolfgang Goethe-Universität Frankfurt Am Main****Address:**

THEODOR W ADORNO PLATZ 1  
60323 FRANKFURT AM MAIN  
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**Organisation Website:**

<http://www.uni-frankfurt.de>

**EU Contribution:** €232,950

**TecnositaF Spa Con Unico Socio****Address:**

Via Fabbrica Da Fer  
10053 Bussoleno To  
Italy

**EU Contribution:** €308,250

**Environmental Reliability And Risk Analysis****Address:**

LEOFOROS SYGGROY 67 KAI ZAN MOREAS 40  
11745 ATHENS  
Greece

**EU Contribution:** €174,838

**Universidad De Sevilla****Address:**

Calle S. Fernando 4  
41004 Sevilla  
Spain

**EU Contribution:** €352,000

**Technologies:**

Infrastructure management  
Decision-Support-System for proactive remedial  
measures

**Development phase:** Validation

**STRIA Roadmaps:** Infrastructure

**Transport mode:** Road transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Safety/Security

**Geo-spatial type:** Other