

# InfraROB – Maintaining integrity, performance and safety of the road infrastructure through autonomous robotized solutions and modularization



*Maintaining integrity, performance and safety of the road infrastructure through autonomous robotized solutions and modularization*

# InfraROB Project Presentation

Prof. Dr. Rade HAJDIN | IMC

InfraROB Exploitation Manager & Coordinator Support Team



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# InfraROB in a Nutshell

- **H2020** Research and Innovation Action (RIA)
- Information, results, publications:  
<https://cordis.europa.eu/project/id/955337/en>



- InfraROB will provide advances beyond state of the art across 5 different technological areas by delivering solutions reaching at least TRL7\*

\*Technology readiness levels:

[https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-g-trl\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-g-trl_en.pdf)



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# Consortium Members



**SMALL AND MEDIUM-SIZED ENTERPRISES**

TinyMobileRobots iE inSITU

**ACADEMIC INSTITUTIONS**

Universidade de Vigo

Universidade do Minho

TECHNISCHE UNIVERSITÄT DARMSTADT

Technology Arts Sciences TH Köln

SAPIENZA UNIVERSITÀ DI ROMA

CENTRO DI RICERCA PER IL TRASPORTO E LA LOGISTICA

ROMA TRE UNIVERSITÀ DEGLI STUDI

**LARGE ENTERPRISES**

RINA TPA

TesiSystem prefabbricati in cis

MOBA MOBILE AUTOMATION

Brussi 1854 Impresa di costruzioni

**NON-PROFIT ASSOCIATIONS**

AIPSS Associazione Italiana dei Professionisti per la Sicurezza Stradale

FEHRL

CECE COMMITTEE FOR EUROPEAN CONSTRUCTION EQUIPMENT

**PUBLICLY OWNED CORPORATIONS**

ASFiNAG

# Our Objectives : Technological Area 1



TA1

Autonomous robotized machinery for construction, upgrade and large maintenance interventions

- Road construction train
  - Feeder, Paver, and Rollers
  - Sensors for a more efficient and safer paving interventions
- Automated installation of fiber optic sensors
  - Long-term pavement condition monitoring system



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# Our Objectives : Technological Area 2

Autonomous robotized machinery for the routine or periodic maintenance of the pavement

TA2



- Robot for repairing potholes and cracks
  - 3d-printing solution
- Line-marking robot
  - cold paint solution



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# Our Objectives : Technological Area 3



**TA3**

Modularization of road construction or upgrade through industrial prefabrication

- Multi-functional all-in-one precast concrete element
  - Safety barrier
  - Gutter and curb
  - Storm drain



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# Our Objectives : Technological Area 4

Collaborative operation of safety cone robots and remotely piloted aircraft systems for work zone fencing and signaling

TA4



- Collaborative robot fleet
  - Artificial intelligence algorithms for monitoring of safety conditions
  - Effective alerting and signaling procedures for accident prevention



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# Our Objectives : Technological Area 5



**TA5**

Upgrading of management systems to ensure safer operations and maintenance

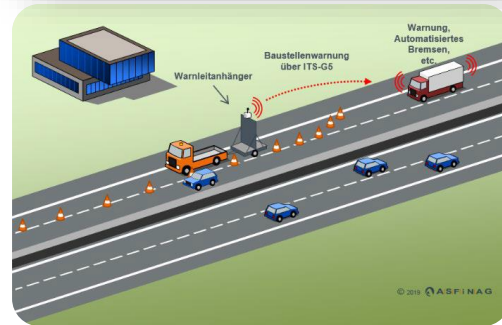
- Pavement Management System

- Digital twin
- Rentability
- Performance over time



- Traffic Management System

- Coordination
- Interoperability
- Safety of work zones



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## Our Objectives : Expected Impact



**50%**

reduction of fatal accidents due to maintenance works

reduction of traffic disruption due to maintenance works by

reduction of routine maintenance costs by

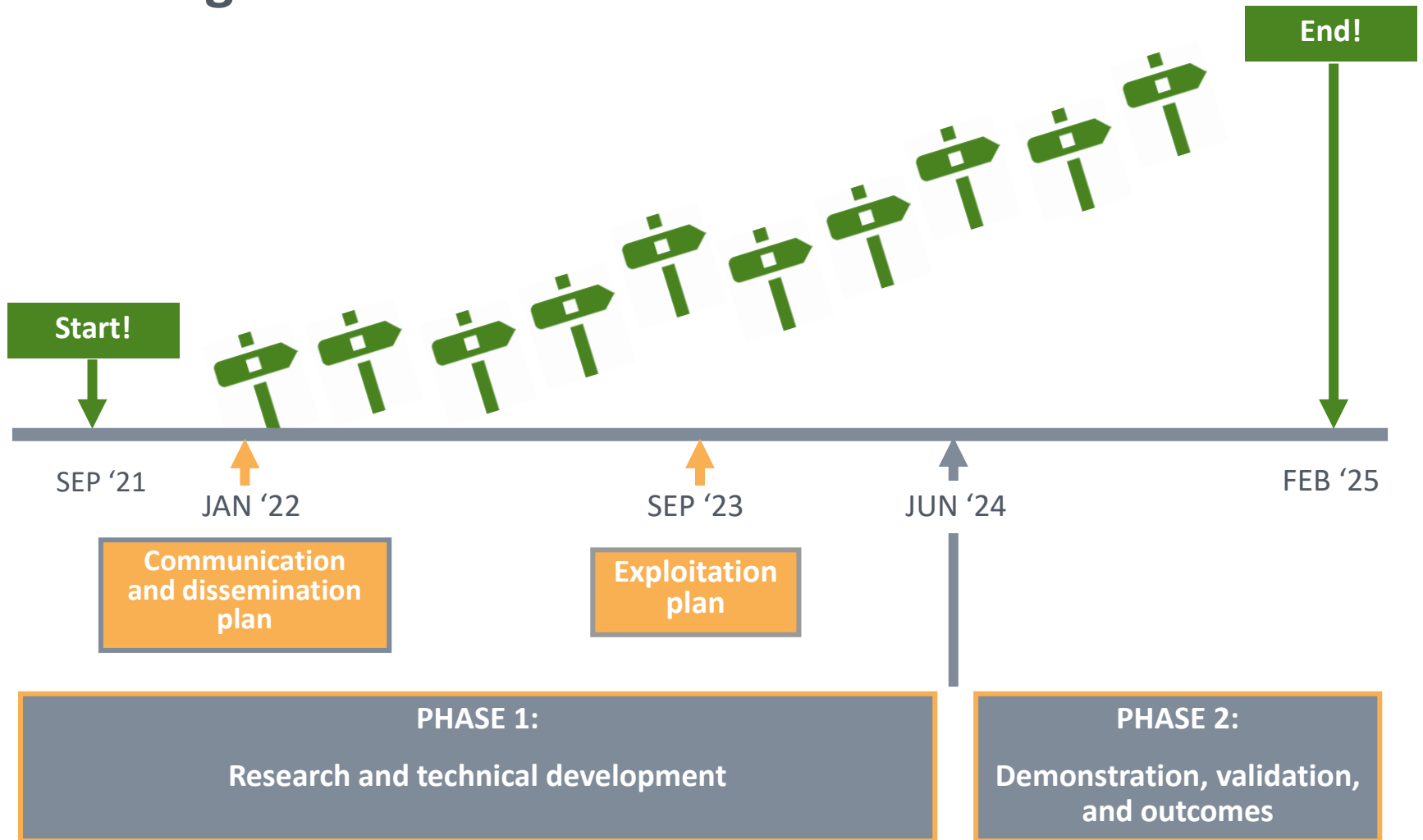
improvement of network capacity by

**20%**



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# Looking Ahead: Our Schedule

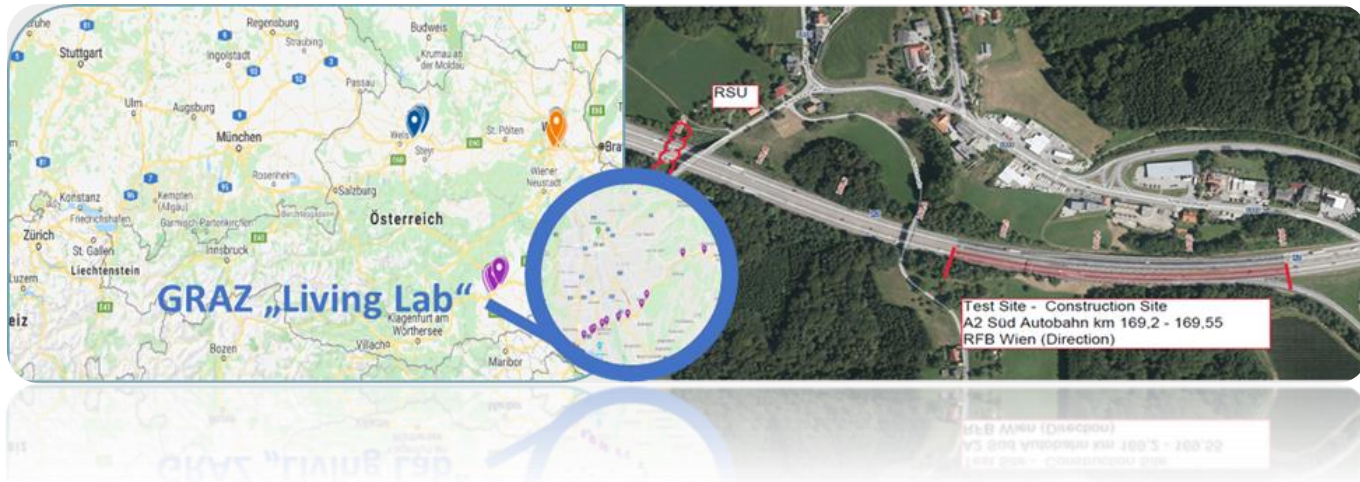


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# Looking Ahead: Graz Living Lab



FIELD VALIDATION AND DEMONSTRATION ON TEN-T\* CORRIDOR & INTEGRATED WITH CEF PROJECTS



TEN-T Corridor

\*[https://ec.europa.eu/transport/themes/infrastructure/ten-t\\_en](https://ec.europa.eu/transport/themes/infrastructure/ten-t_en)



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# Looking Ahead: Beyond the Consortium

- Communication

- InfraROB website
- Social media
- Events
- E-newsletters



- External Stakeholders Group (Feb 23): non-binding advisory board

- Dissemination & Exploitation

- Workshops
- Webinars
- Scientific publications
- e-Catalogue of technical solutions



- European Commission: Communication, dissemination, and exploitation:

[https://ec.europa.eu/research/participants/docs/h2020-funding-guide/imgs/quick-guide\\_diss-expl\\_en.pdf](https://ec.europa.eu/research/participants/docs/h2020-funding-guide/imgs/quick-guide_diss-expl_en.pdf)



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# Thank you for your attention!



[infrarobproject.com](http://infrarobproject.com)



[company/infrarob](https://www.linkedin.com/company/infrarob)



[infrarob@uvigo.es](mailto:infrarob@uvigo.es)



[infra\\_rob](https://twitter.com/infra_rob)



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## Project Partners

Universidade de Vigo

TinyMobileRobots



Technology  
Arts Sciences  
TH Köln



Universidade do Minho

