

# MAIN OBJECTIVES AND OUTCOMES

## 1. Innovative sensors & condition monitoring.

To formulate technology concepts for condition monitoring systems to be applied in the next generation of running gear, also considering hardware and methods in use in other sectors such as energy and aerospace industry

## 2. Optimised Materials.

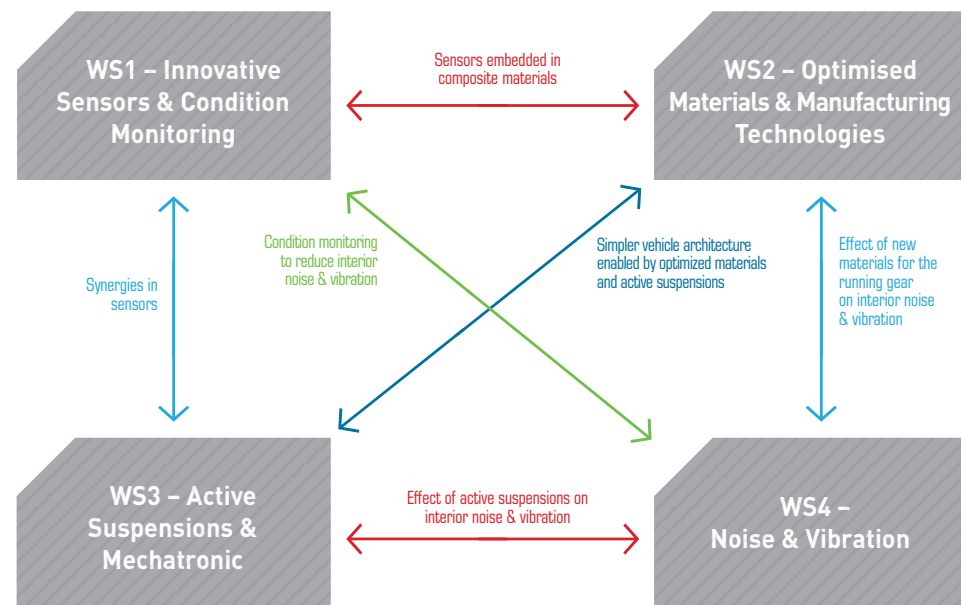
To explore the potential and risks presented by new materials (lightweighting structural components, enhanced materials, efficient fabrication processes, new solutions for wheelsets) to reduce unsprung masses and life cycle costs

## 3. Active suspension & control technology.

To assess off-the-shelf and innovative technology for active suspensions to allow simpler and lighter architecture of the running gear and to improve the running behaviour and ride comfort of the existing running gear

## 4. Noise & Vibration.

To develop of a novel and comprehensive methodology for predicting the transmission of noise and vibration from the running gear to the carbody and to validate it in measurement campaign in Spain. Assessment of new and existing techniques for reducing noise and vibration transmission using the new model



# PARTNERS

PROJECT COORDINATOR



TECHNICAL LEADER



BENEFICIARIES



# FACTS AND FIGURES



Total Project Value  
**2.7M€**



Duration  
**24 Months**



Partners  
**15**

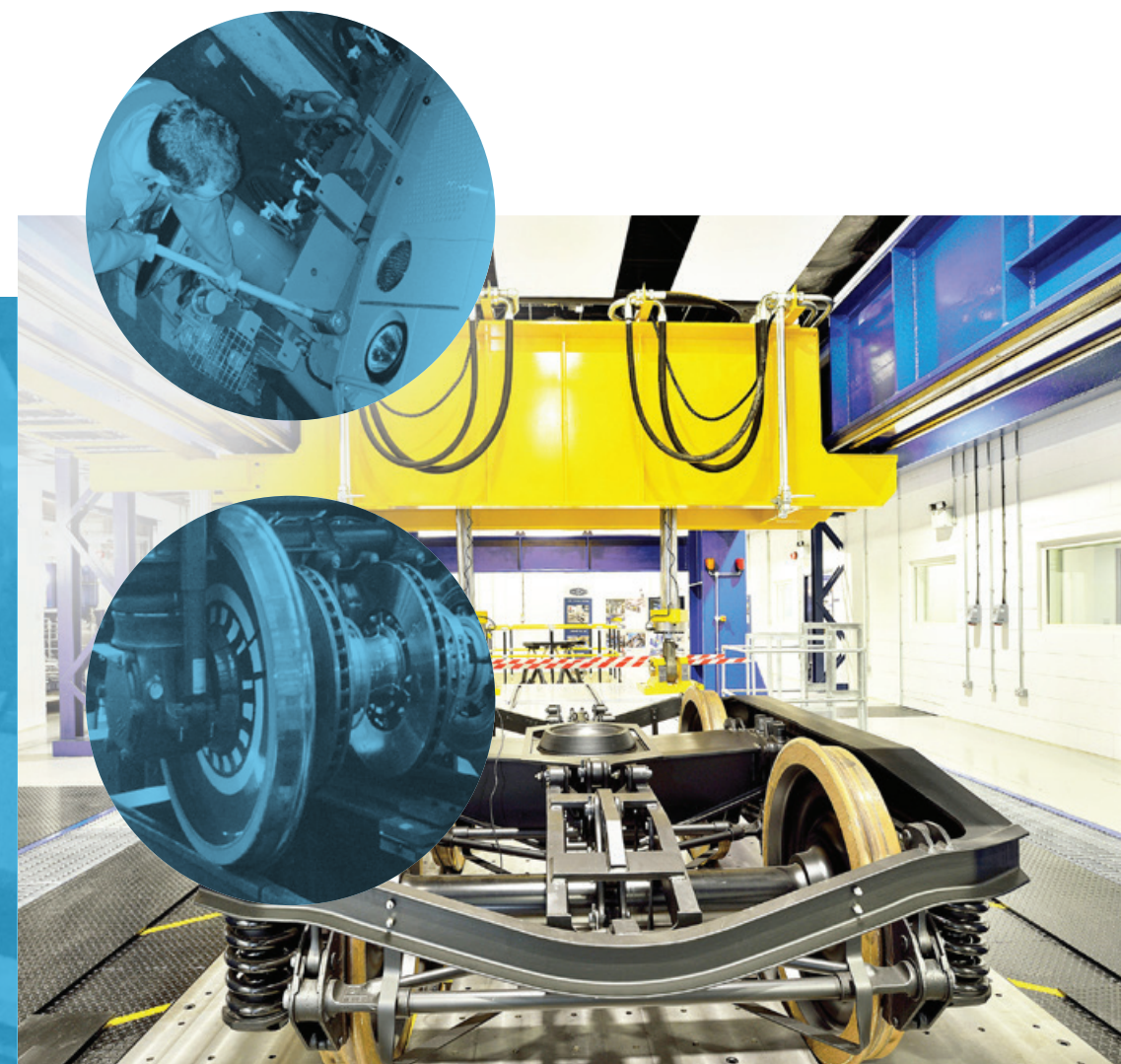


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# RUN2Rail

Innovative RUNning gear soluTiOns for new dependable, sustainable, intelligent and comfortable RAIL vehicles





## INTRODUCTION TO RUN2RAIL

RUN2Rail (Innovative RUNning gear solu-TiOns for new dependable, sustainable, intelligent and comfortable RAIL vehicles) is a Shift2Rail Open Call project within the Horizon2020 Programme of the European Commission.

RUN2Rail will explore an ensemble of technical developments for future running gear, looking into ways to design trains that are more reliable, lighter, less damaging to the track, more comfortable and less noisy. These innovations will be proposed in the form of case studies supported by the methods and tools elaborated in the project.

RUN2Rail develops across four thematic Work Streams:

- 1 Innovative sensors & condition monitoring
- 2 Optimised materials & manufacturing technologies
- 3 Active suspensions & mechatronics
- 4 Noise & Vibration

Dissemination and promotion of the project and its results will be ensured in a way which is consistent with the wider dissemination and promotion activities of Shift2Rail. It will also ensure that all important actors in the European railway sector are informed about RUN2Rail, its objectives, content and results. It will also facilitate acceptance of the project outcomes by the standards and regulatory bodies as well as by the main actors of the EU rail sector.



INNOVATIVE SENSORS & CONDITION MONITORING



OPTIMISED MATERIALS



ACTIVE SUSPENSION & CONTROL TECHNOLOGY



NOISE & VIBRATION

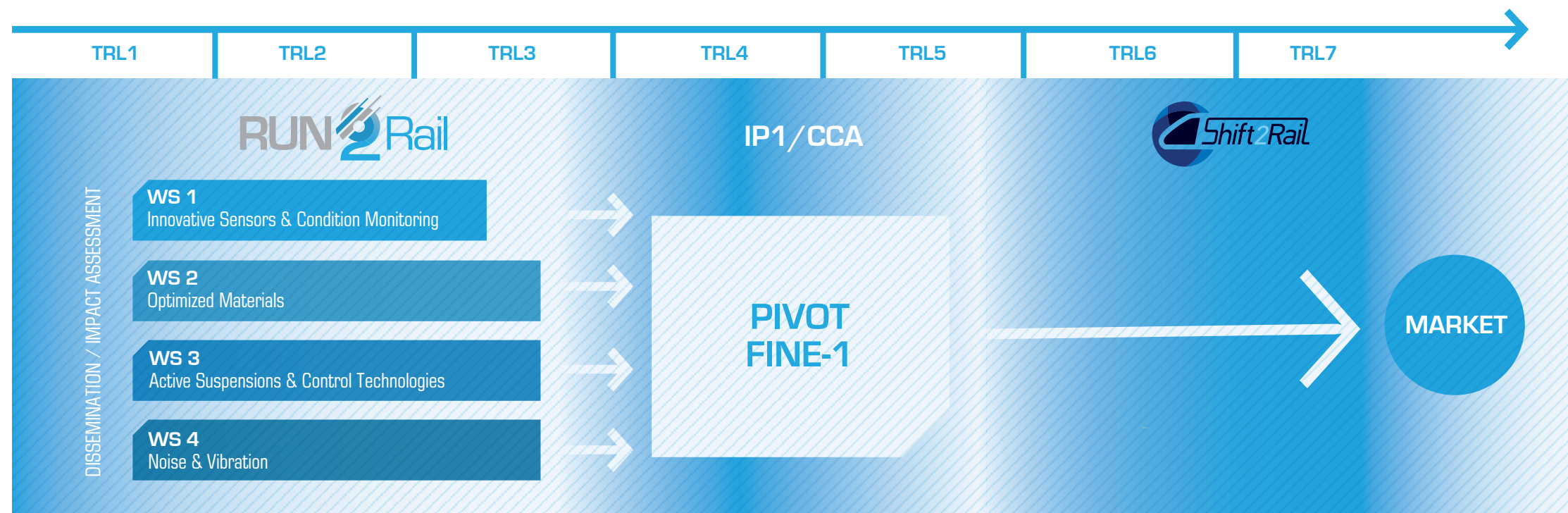
## PROJECT IN A NUTSHELL

In the four planned areas, RUN2Rail will provide a coordinated set of technical key contributions including (but not limited to):

- assessment of existing off-the-shelf technology for active control coming from other sectors;
- development of a novel and comprehensive methodology for predicting the transmission of noise and vibration from the running gear to the carbody.
- smart sensors and smart running gear components with self-diagnosing capability;
- use of novel materials and manufacturing methods in combination with intelligent / active suspensions to enable non-conventional running gear concepts; identification of efficient fabrication processes for the running gear (3D metal printing, automated tape layering of composite materials);

Within the four workstreams, the project will also perform a preliminary evaluation of the related regulatory and standardisation issues, together with a careful assessment of the impacts of the new solutions proposed. The research conducted will be multidisciplinary, i.e. based on the integration of different branches of engineering such as mechanical, materials, electronic and electrical engineering, and will establish models and formal methods to explore a full set of technological developments, exploiting at best the matching mix of talent and diverse skills offered by the Consortium.

RUN2Rail will be cooperating with two Shift2Rail Projects, PIVOT (Performance Improvement for Vehicles on Track) and FINE-1 (Future Improvement for Energy and Noise).



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