**WORK STREAM 1**

Monitoring and upgrading solutions addressed to bridges and tunnels.

- Railway tunnel examination technologies for subsurface defect detection (bridge and tunnel).
- Non-traffic-disturbing methods for cleaning long tunnel drainage pipes.
- Contactless measurement of noise, noise dampers for bridge.
- Development of an underframe image monitoring system and a "stereo images" systems for measurements of defects on rolling stock.
- System/Sensor to measure the transversal position of the wheel in relation to the rail.
- Models that quantify the impact of a given measured defect on the infrastructure.
- Data from fail-safe systems: Collection solutions (HD and SW) designed to achieve seamless safety approval.
- System/Sensor to measure the transversal position of the wheel in relation to the rail.

**WORK STREAM 2**

Monitoring solutions for trains and track geometry & data collection from fail-safe systems.

- Study, design and development of "Read/Write RFID tags" for trains.
- Automatic features measurement configuration tools and processes.
- Assets4Rail shares the Shift2Rail view of having an ageing European railway infrastructure that needs to cope with the expected increased traffic in the future. To achieve this, we need an improvement in technology and a cost-effective maintenance and intervention system for infrastructure inspection and monitoring.

- 30% DECREASE ON TRACK DISTURBANCE
- 15% DECREASE ON NOISE LEVELS
- 50% INCREASE IN RELIABILITY AND PUNCTUALITY
- 20% OF THE COST OF TRACK INSPECTIONS

A 30 months Shift2Rail project which will contribute to the modal shift to rail by exploring, adapting and testing cutting-edge technologies for railway asset monitoring and maintenance.

**HARDWARE PROTOTYPING**
**DATA COLLECTION**

**SOFTWARE PROTOTYPING**
**LAB TESTING**

**SYSTEM DESIGN**
**FEEDBACK**

**INFORMATION MODELLING**
**MONITORING**
**TEST SECTIONS**

**INTERVENTION MEASURES**
**FATIGUE CONSUMPTION ASSESSMENT**

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Horizon 2020 European Union funding for Research & Innovation
MAIN OBJECTIVE

To achieve cost efficient and reliable infrastructure by developing a set of cutting-edge asset-specific measuring and monitoring devices that will not only collect and deliver the status data of the railway system (tunnel/bridges/track geometry/safety systems/rolling stock) but also process and analyse the information in Building Information Models with integrated algorithms to generate relevant maintenance infrastructure-related information to support asset management decisions.

MEASURING
MONITORING
DATA HANDLING

for railway assets; bridges, tunnels, tracks and safety systems

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