

INNOWAG Final Event Press Release

INNOWAG is the acronym for a Shift2Rail project called: INNOvative monitoring and predictive maintenance solutions on lightweight WAGon.

The INNOWAG project, financed within the Shift2Rail initiative of the European Commission, had its Final Event in Munich, Germany on the 17th and 18th June 2019. The project outcomes and conclusions have been presented and debated in front a large audience composed by professionals with strong expertise in the rail sector during the “*Innovation in Freight Conference*”, a special event organised by seven IP5 S2R Projects, with the support of Shift2Rail JU.

The INNOWAG project partners gave detailed presentations and discussed in details the outcomes of the work carried out during the 32 months of the project life in the three Work Streams which comprised the research:

- *Work Stream 1:* Cargo condition monitoring;
- *Work Stream 2:* Wagon design;
- *Work Stream 3:* Predictive maintenance.

The interested audience attending the event had the opportunity to get information and insights on the tests and demonstration activities performed. These included demonstrators related to autonomous self-powered wireless sensor systems for cargo tracing and condition monitoring with various combinations of Bluetooth, on-board RFID, and trackside RFID connected sensor systems, combined with positioning and communication systems powered by either batteries or energy harvesting technologies, including solar and a vibration energy harvesting (VEH) prototype based on the existing VEH technology of partner Perpetuum.

Three innovative concepts of lightweight wagons have been presented by the INNOWAG consortium, investigating new materials, modular and optimised designs. The INNOWAG novel wagon concept designs achieved weight reductions of up to 27% for the wagon and 51% for the carbody, along with capacity increases of up to 14%. Outcomes of supporting activities, including analysis, assessment and testing of structural strength, as well as vehicle dynamics, have been presented.

With regards to predictive maintenance, the analysis of critical components of freight wagon running gear and development of diagnostic and prognostic models carried out in the project was described. The highlight was on the presentation of the Wizard Tool provided with a friendly graphical user interface, and uses *Proportional Hazards Modelling* to integrate reliability and cost information for maintenance processes and policy optimisation.

For further information, please visit www.newrail.org/innowag

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