PROJECT

SAFTInspect

Ultrasonic inspection solution for railway crossing points

Funding: European (Horizon 2020)

Duration: Oct 2017 - Feb 2020

Status: Complete

Total project cost: €1,419,313

EU contribution: €993,518

Call for proposal: H2020-SMEINST-2-2016-2017

CORDIS RCN : 211991

Objectives:

The heart of the rail crossing points, also known as “frogs”, are a mechanical installation that enable a train to switch from one track to another. Frogs are subjected to repetitive impact collisions from the rolling stock. Such actions cause fatigue cracking which compromise the structural integrity of these safety critical components. For this reason, the EU infrastructure employs manganese steel at safety critical locations such as crossings.

The railway sector involves companies that need to inspect railway crossings accurately and in time. SAFTInspect is the only solution that will warranty the total inspection of the “frog” and it will also monitor the evolution through time with a Data base (Big Data).

SAFTInspect is based on a Synthetic Aperture Focussing Technique (SAFT) that facilitates, for the first time, full volume inspection of railway crossing devices in order to detect flaws on critical parts reinforcing the railway safety regions. SAFTInspect system will improve levels of safety for the railway industry preventing train derailments. Rail operators, underground operators, rail maintenance service providers and manufacturers, will benefit from our SAFTInspect innovative device that will be used both in pre-service and in-service analysis:

- Pre-service: SAFT Inspect will allow the manufacturer to control every asset produced and to offer a better service to its customers (100% of quality). No special infrastructure is required, nor special skills from the user.
- In-service: Full volumetric inspection is more effective (90%). We will reduce 85% the total time per inspection and 94% on savings from labour costs.

Cracks that occur during service will be detected at an early stage in their growth cycle. Therefore, it will eliminate the unnecessary cost of replacing frogs that are not damaged (savings around €1.89M per year).

From a global perspective, avoiding unscheduled maintenance, rail operators will save up to €87.5M in penalties in Europe due to train derailments.

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)

Lead Organisation:

Airtren, S.I.

Address:
CALLE JOSE LOMBANA IGLESIAS 14

28023 MADRID
Spain

Organisation Website:
http://www.airtren.com

EU Contribution: €631,181

Partner Organisations:

Microtest Sa

Address:
CALLE VALLE DE TOBALINA NAVE 10
28021 MADRID
Spain

Organisation Website:
http://www.microtest-sa.com

EU Contribution: €362,337

Technologies:

Non destructive testing
Ultrasonic Tomography and Ultrasonic testing system for rails

Development phase: Research/Invention

STRIA Roadmaps: Infrastructure

Transport mode: Rail transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security

Geo-spatial type: Infrastructure Node