GaLoROI
Galileo Localisation for Railway Operation Innovation

In this project, a certifiable satellite based localisation unit for railways will be developed. This unit enables a safe and infrastructure independent localisation of train.

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Project partner:
- Institute of Measurement and Control Engineering, Karlsruhe Institute of Technologie, www.mrt.kit.edu
- Septentrio nv, www.septentrio.com

Problem / Motivation:
To reach an enduring strengthening of railway, new solutions are required. The European satellite based localisation system Galileo which is currently put into operation promise an advanced solution. To apply the migration from conventional localisation equipment towards the usage of Galileo for transportation this project serves for an appropriate base. Since in Europe nearly 50% of all railway lines belong to secondary railway lines and in other countries this seems to be even more, this sector may be assumed as a niche but could rise to a mass market if the number about 50,000 locomotives in Europe is regarded. The resulting localisation unit promises a short-term return on invest (ROI).

Approach and Project objective:
The objective of the project GaLoROI is the development of a certifiable safety relevant satellite based on-board train localisation unit to be used on low density railway lines.

The safe and precise on-board localisation unit developed in GaLoROI will mainly serve for train control but also for train integrity monitoring, train and fleet management, green driving and furthermore for track inspection, especially for diagnosis during operational movement. GaLoROI allows migrating from conventional localisation techniques towards a satellite based technology. A safe localisation will be enabled by a satellite independent device (eddy current sensor) supported by the EGNOS Safety of Life service (SoL).