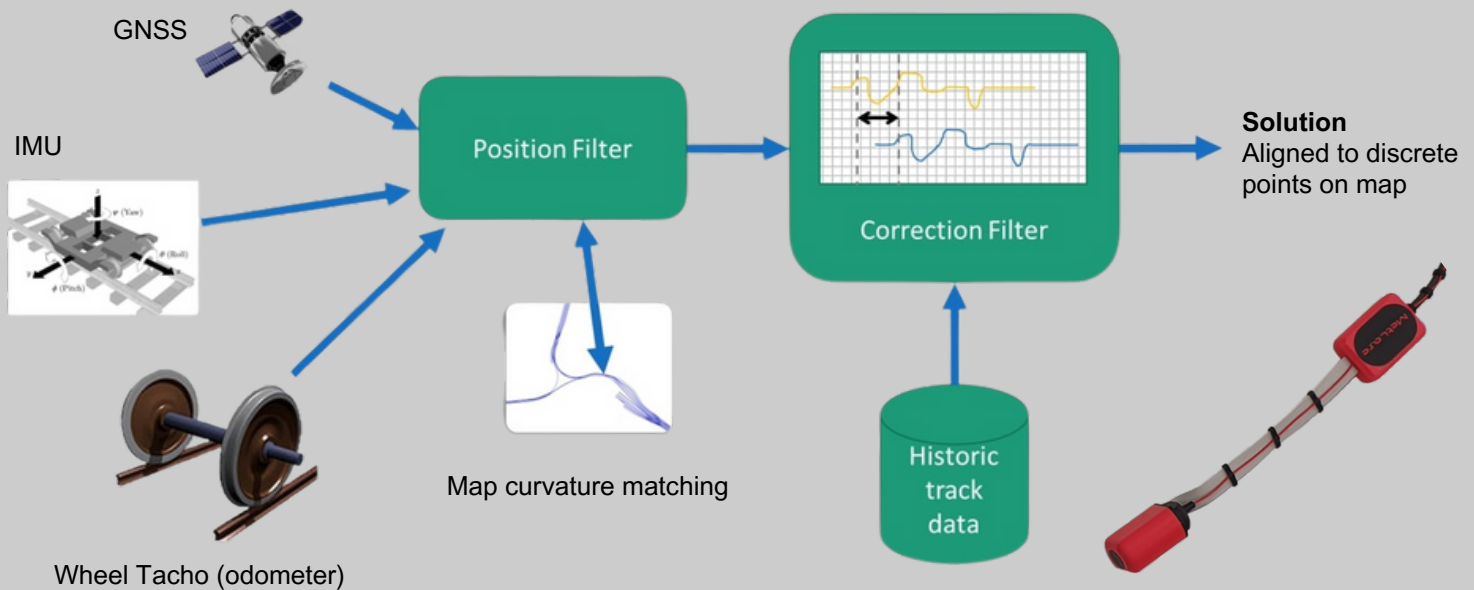




This project aims to begin to demonstrate the potential of some of these quantum sensors for positioning for real-life applications.

The objective of this project is to:

- Develop a quantum inertial navigation system for Rail (RQINS).
- Combine 2 quantum technologies to develop the quantum navigation system.
- Combine with MoniRail sensor system for track monitoring application.
- Demonstrate track monitoring use-case as evidence for wider application in rail and other sectors.

Partners

Lead: MoniRail

Rail Partner: Transport for London

Technology Partners:
Imperial College London,
Sussex University,
University of Birmingham,
PA Consulting,
Unipart

Challenges

- Accurate positioning and navigation in GNSS denied locations is challenging.
- Use of inertial systems is possible, however, drift causes the location provided by such systems to become more and more inaccurate dependent on speed.
- Dead reckoning needed in order to regularly correct position and provide accurate positioning.
- Current solutions usually rely on infrastructure and are often costly to implement and maintain.
- Lab results from quantum technologies have shown potential for providing accurate positioning with minimal drift over extended periods of time.



Timing Unit Hardware

