

Business Challenge



KiwiRail maintains more than 4000kms of rail track. They are seeking novel proposals for:

High-speed Automated Track Inspection Technologies

that can give reliable and accurate measurements of track condition to reduce maintenance costs.

KEY CHALLENGES:

- #1 Non-invasive method for measuring stress in rail tracks**
- #2 Non-invasive method for measuring wooden sleeper integrity**
- #3 Image analysis of track condition**

See overleaf for details...



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Initial discussions between K-Matrix, KiwiNet and KiwiRail, have lead to the identification of 3 challenges that will greatly benefit KiwiRail if solved.

CHALLENGE #1 Non-invasive measurement of stress in railway tracks

Incorrect stress on iron rails can cause them to buckle or break. This is a highly dangerous situation that may lead to derailment. The classic methods to measure longitudinal rail stress are:

- Cutting the rail and measuring the resulting gap/overlap
- Using the lifting frame method (current KiwiRail preferred method)

KiwiRail needs to measure rail stresses non-destructively, providing reliable information for maintenance engineers to allow them to de-stress rails before problems occur.

CHALLENGE #2 Non-invasive measurement of sleeper integrity

Splits or cracks in a sleeper can mean derailment. While wooden sleepers are being replaced with concrete versions, the cost and effort to identify those that need replacement are significant.

Automating & accurately identify sleepers that need to be replaced would result in major savings.

CHALLENGE #3 Image analysis of track condition

There is a desperate need to improve the monitoring of track condition. Connections of the rail to the sleeper, overgrowth of foliage on the side of the tracks or overhead power coupling can be improved using innovative image analysis technology to identify and warn KiwiRail of potential issues, saving both time and accidents.

FUNDING FOR YOUR SOLUTIONS IS AVAILABLE!

Kiwi Innovation Network is keen to hear your proposals to solve these challenges, and we are willing to help support good ideas from research organisations to prepare prototypes and prove technologies.

ARE YOU UP FOR THE CHALLENGE?

For more information about each challenge visit www.kiwinet.org.nz, or email your expression of interest & contact details to KiwiNet: admin@kiwinet.org.nz by 25th October and we'll be in touch!

