

Potential Applications and Opportunities

Chris Harrison – Futures Lab Systems Engineer

Rail Safety and Standards Board

We are the independent safety, standards and research body for Great Britain's rail network.

We help to make an evolving railway safer, more efficient and more sustainable for everyone.



RAIL SAFETY AND STANDARDS BOARD

Level crossing landscape

In Great Britain we many different types of crossing with many different controls eg:



- Barriers
- Lights and audible warnings
- Train protection





Each crossing is risk assessed using the All Level Crossing Risk Model (ALCRM)



All Level Crossing Risk Model (ALCRM)

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All Level Crossing Risk Model (ALCRM) Inputs

Data is collected on level crossing usage. Need to know:

- Number and type of trains
- Number and type of road traffic vehicles
- Number and type of pedestrians
- Traffic behaviour around the crossing

Opportunities of space based services for collection of census data

Census undertaken using different methods

- In person
- CCTV
- Counters on gates







Opportunity to explore alternate solutions that enable level crossing usage to be monitored more regularly and at a reduced cost.



Coverage







Understanding Traffic Behaviour





Opportunities of space based services for capturing other data

Global Navigation Satellite Systems (GNSS/SatNav) can be used for

- Global positioning
- Localisation
- Navigation

GNSS could be used in combination with other space assets and/or terrestrial sensors to support applications like:

- Positioning and localisation of trains, road vehicles and pedestrians
- Activation of warning systems at level crossings as trains approach them
- In-vehicle warnings for road vehicles as they approach level crossings
- Asset conditioning monitoring



Summary

Space based services potentially offer the opportunity for:

- Easier deployment to remote locations
- Wider view of the level crossing and the context it sits in
- Wider time window of data that can be captured
- Capture true user behaviour
- Use of GNSS with other systems to develop level crossing applications

The benefit this brings is wider and more timely data to inform decision making, the development of new applications – ultimately making the railway safer.



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Special Notices