

EH Powered Rail Track Monitoring Goes Global



In previous episodes....

- Axle Bearings



- Wheels



- Gearboxes



- Traction Motors



- Track

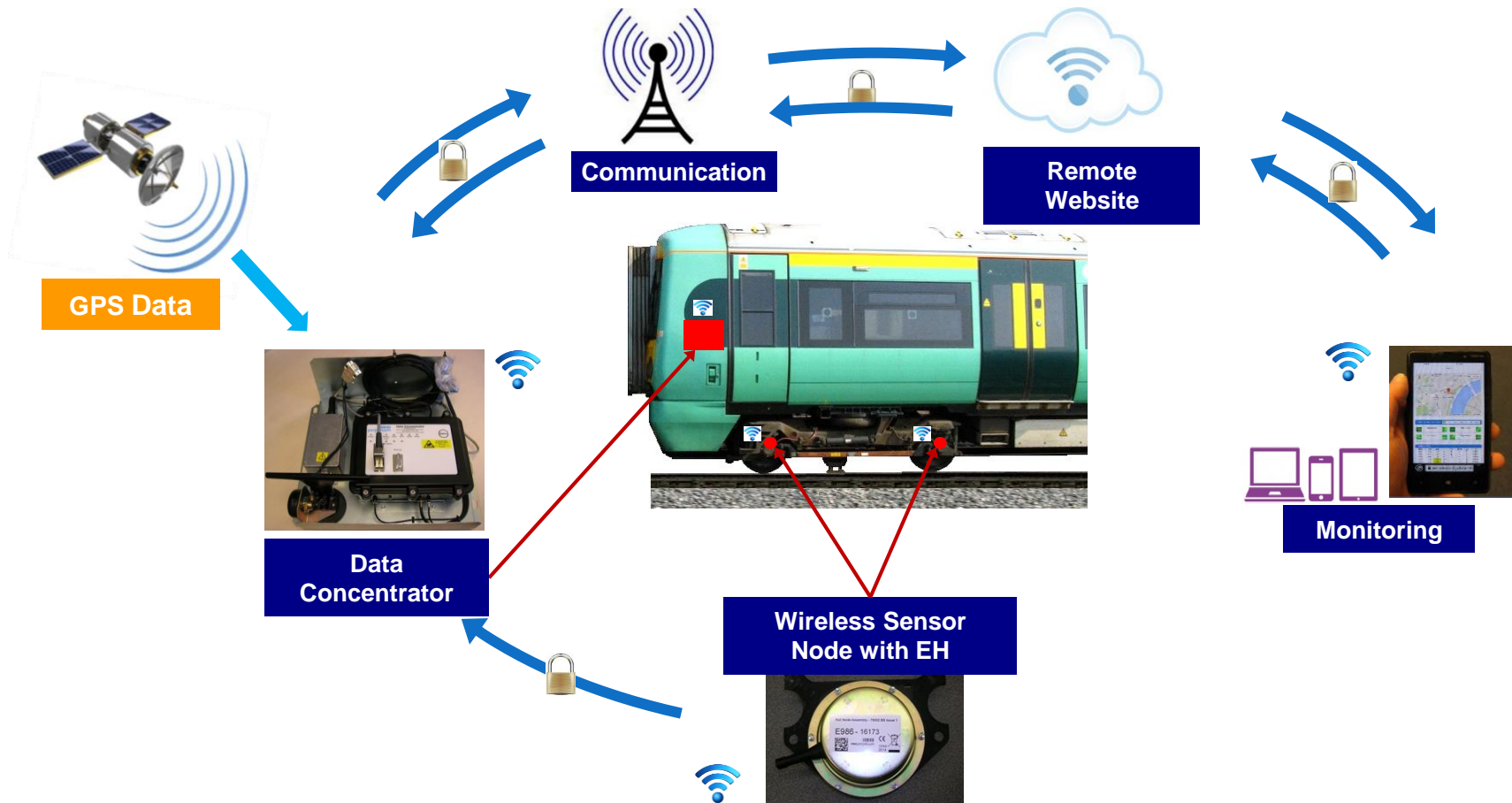


From Product to Data to Information

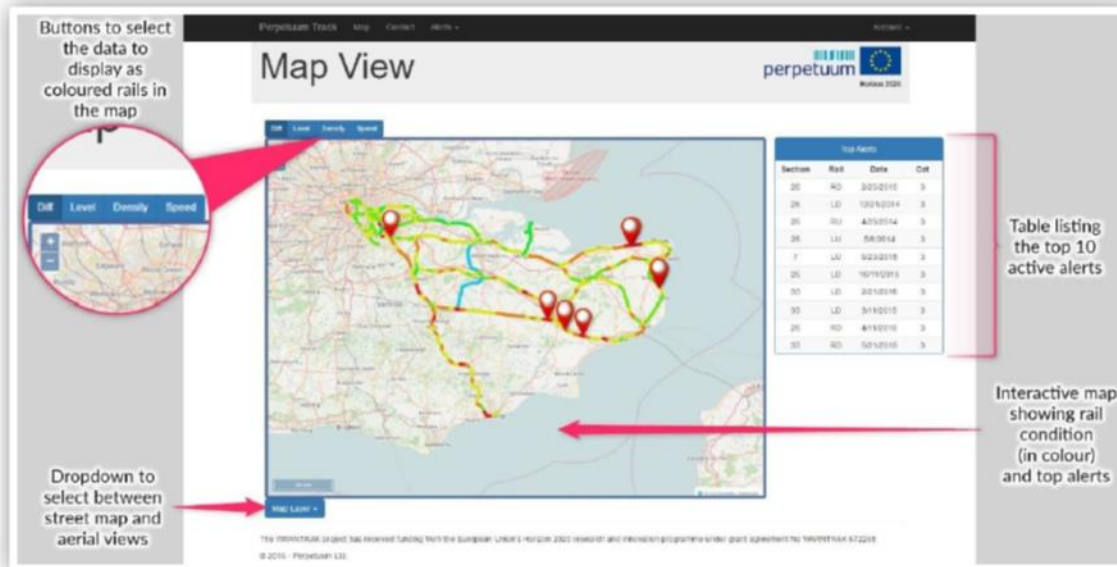


2009
• DATA

Data and Information



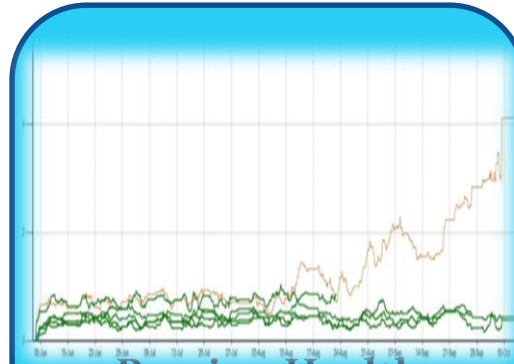
Live Wheel/Rail Interface Management



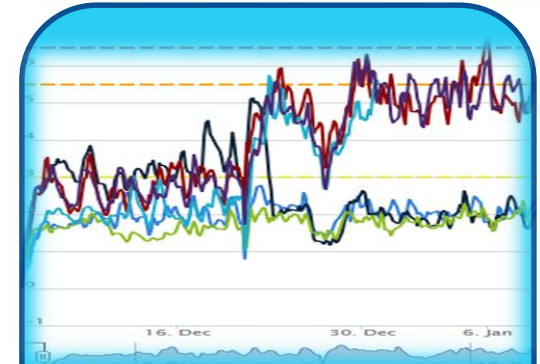
Algorithms for Generating Alerts



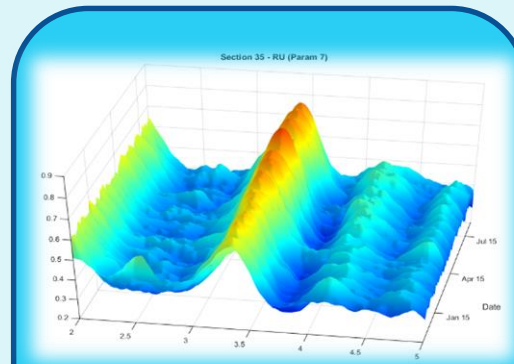
Wheel Health Index



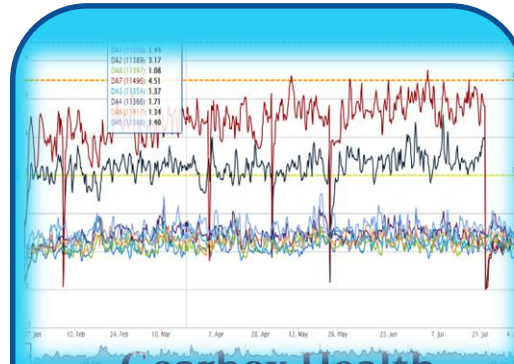
Bearing Health Index



Motor Health Index



Track Health Index



Gearbox Health Index



Ride Health Index

Email Alerts for Track & Ride Quality



perpetuum



Wed 13/04/2016 14:45
Perpetuum Track <donotreply@perpetuum.com>
Alert [Category 1] 02:45 12/02/2014

To Matt Jones

New category 1 alert occurred on 02:45 12/02/2014.
[View Details](#)



Description: Cat 1 T26_LD (P2)

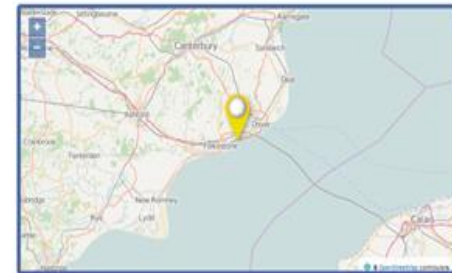
Latitude: 51.100142
Longitude: 1.227049 -
[View on Map](#)

Rail: LD
Track Section: 26
Distance: 27040

Perpetuum Track Map Contact Alerts Account

Alert Details


Horizon 2020

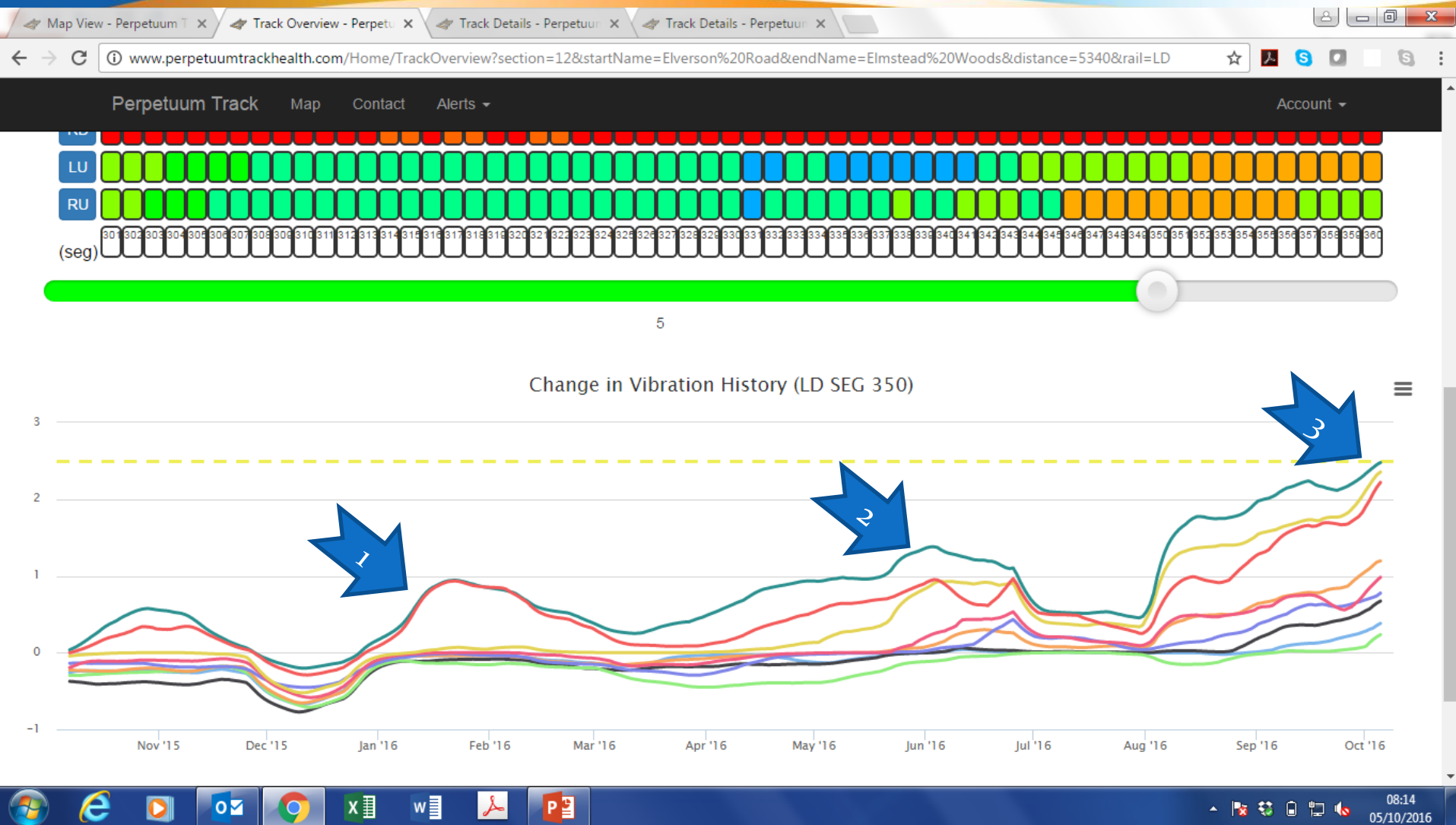


TrackSection	26
Rail	LD
AlertTime	2/12/2014 2:45:00 AM
VibrationParam	1
Segment	1352
Distance	27040
Latitude	51.100141803441
Longitude	1.22704887086481
MaxCategory	1
MaxValue	2.99149664040361
MaxVibrationParam	0
MaxSegment	1368
MaxDistance	27360
MaxLatitude	51.1005605903121
MaxLongitude	1.2315828968731
Value	1.97015652678142
State	100
LastUpdateTime	7/16/2015 12:00:00 AM
InitialAlertTime	2/12/2014 2:45:00 AM
InitialLatitude	51.100141803441
InitialLongitude	1.22704887086481
LowerBound Segment	1314
UpperBound Segment	1371
Description	

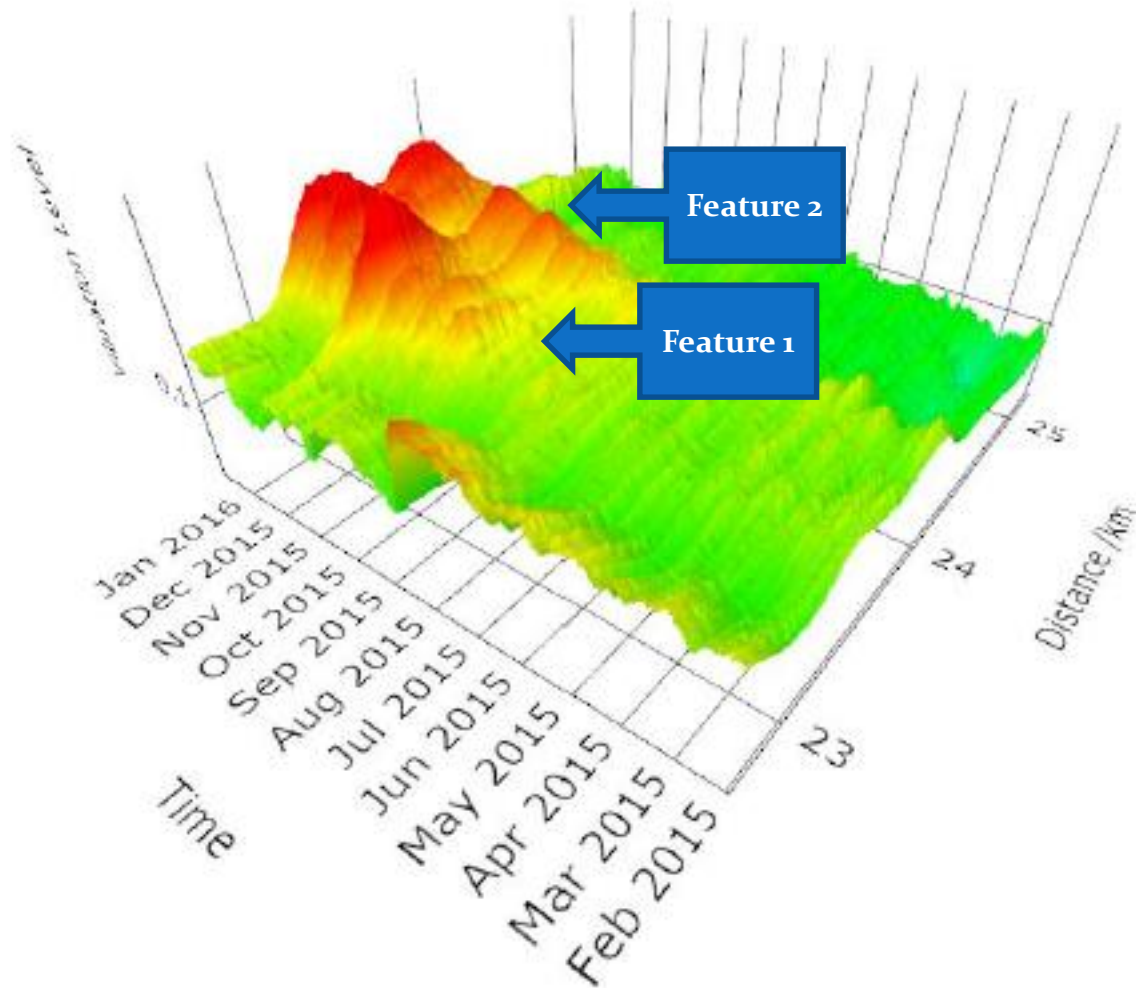
Clear

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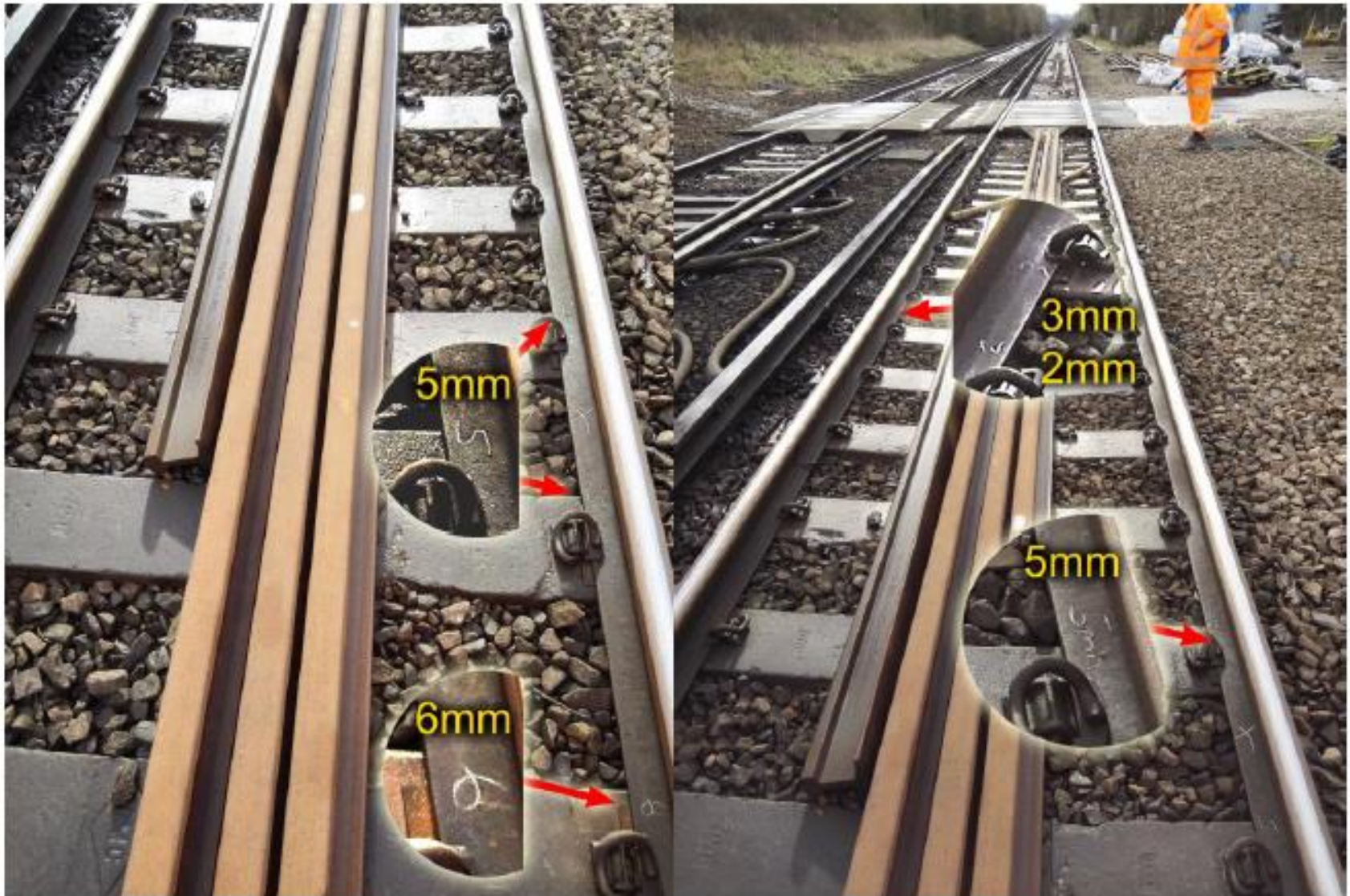
Recurring faults –rail analysis over time



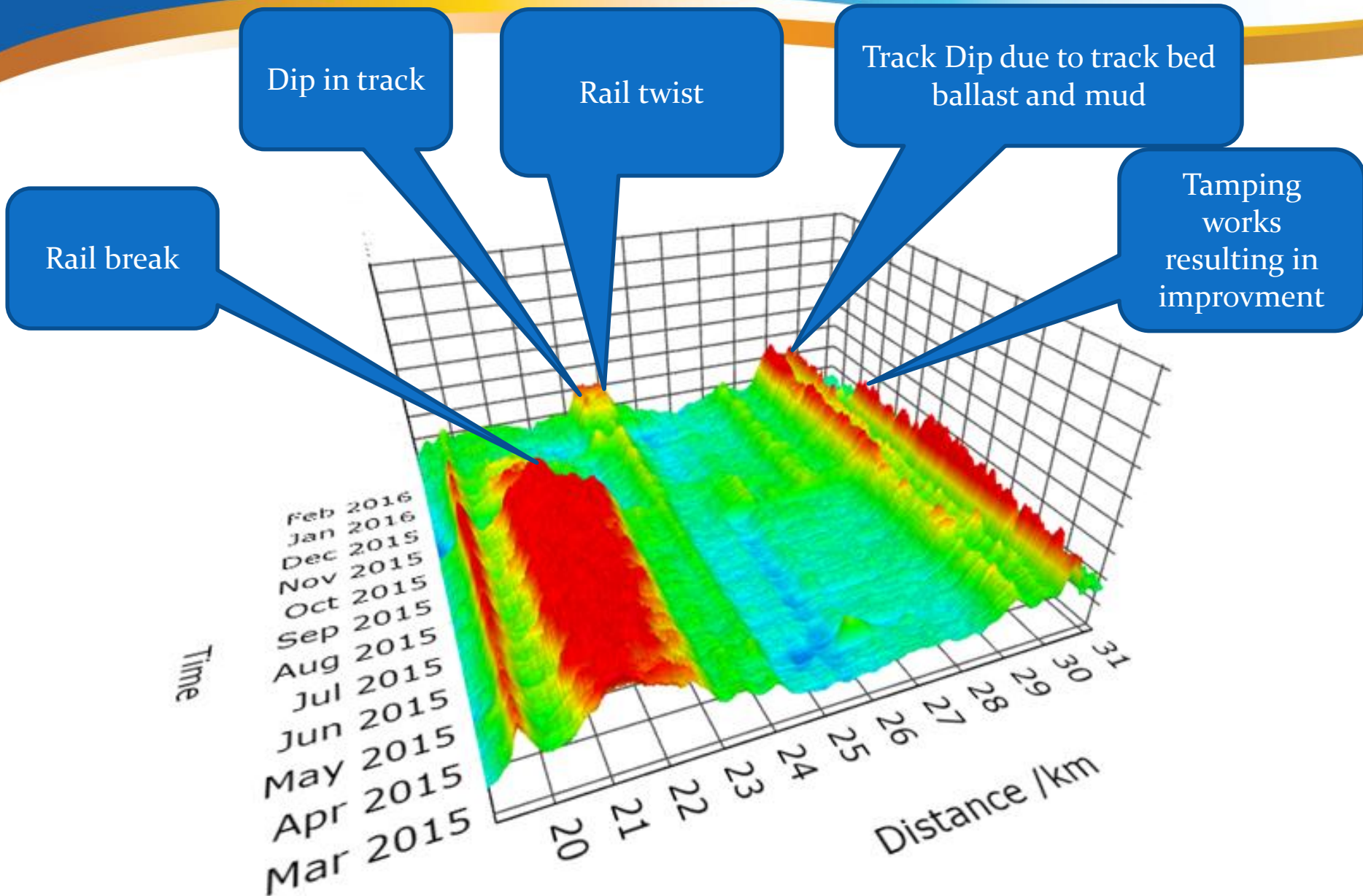
Site – features 1 and 2



Features 1 & 2 : dip and twist faults



Track Features

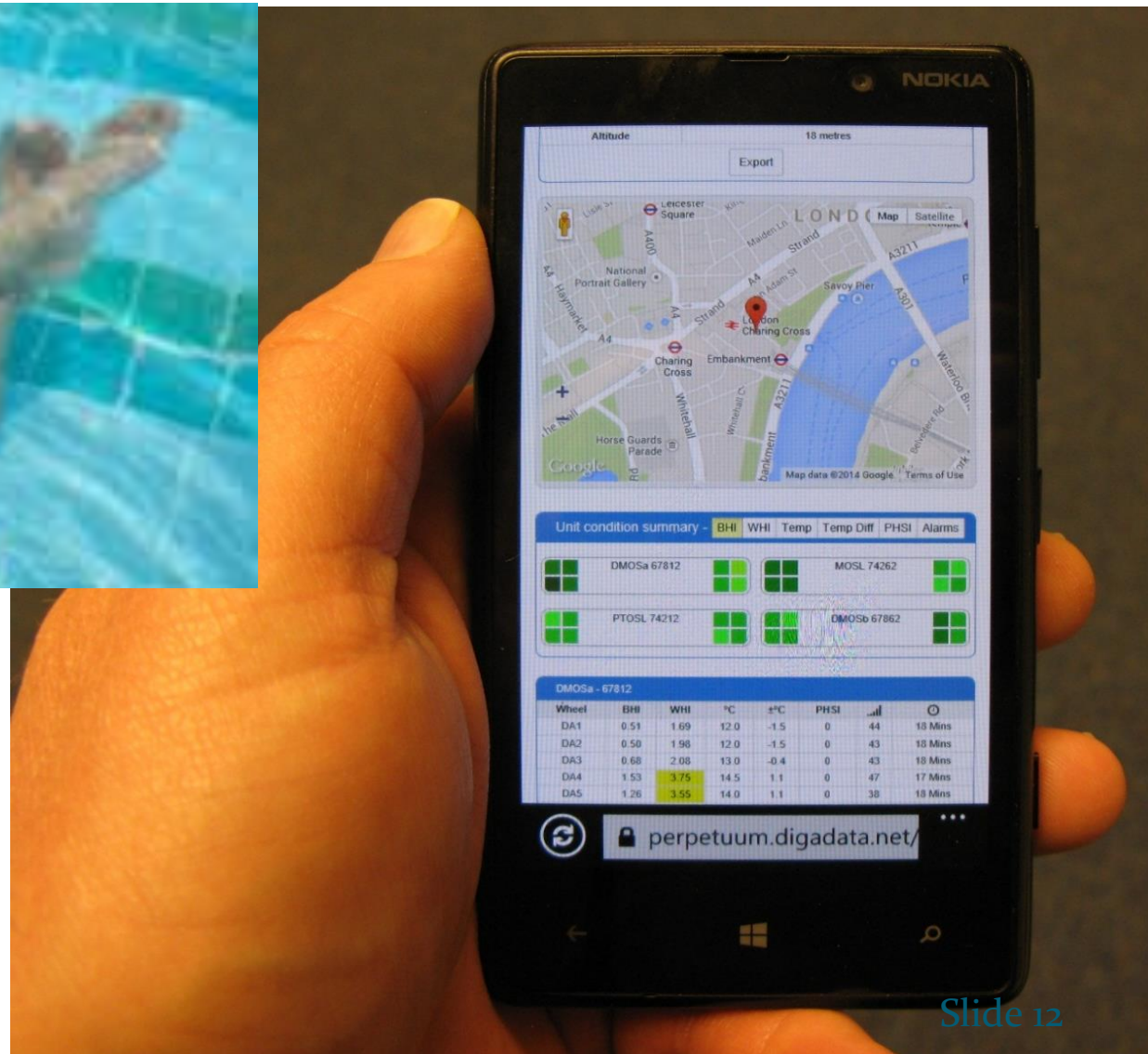


IoT—Improving Quality of Life

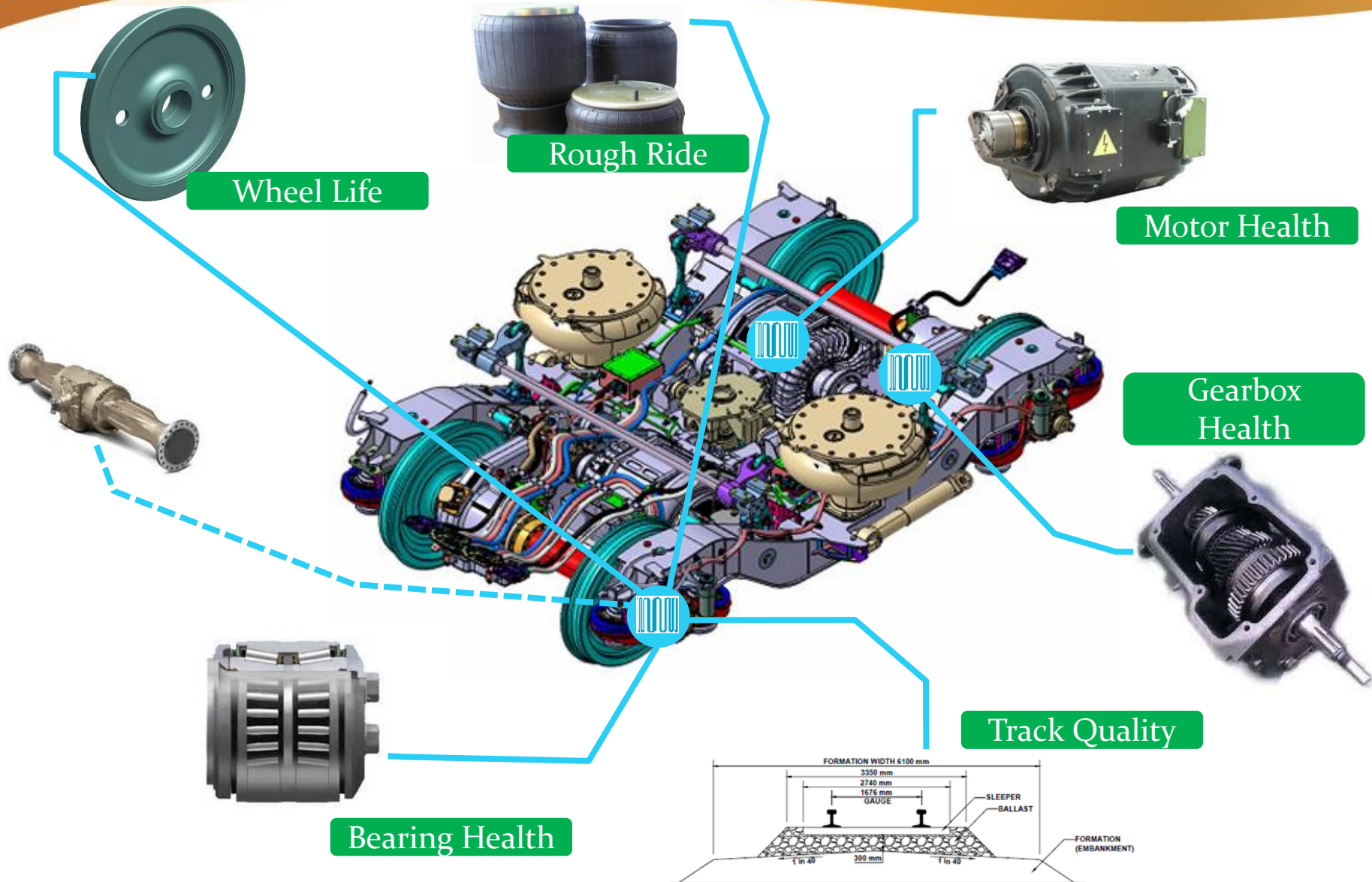


Checking the bearings on
the 12.37 to Brighton

or
New York, Amsterdam,
Stockholm, Melbourne



Vision ... the Intelligent “IoT” Bogie



- Opportunities in EH come from
 - Good Ideas and Good Luck
 - Doing sums: Available Energy v. Average Power Required
 - Finding applications with strong benefits from wireless without batteries
- Damage to EH reputation from unsubstantiated claims
- Look for published requirements and funding calls e.g.
 - Shift2Rail asking for EH power for trackside signalling
 - ETALON will survey ideas – let me know if you have ideas
 - InnovateUK funding calls