

A stylized blue graphic of a rail track, consisting of a series of vertical bars connected by horizontal lines, positioned on the left side of the title.

TMEs - Old Dogs & New Tricks

A stylized blue graphic of a rail track, consisting of a series of vertical bars connected by horizontal lines, positioned on the right side of the title.

Paul Furnival - TME (Tonbridge)

Paddy White - TME (Hither Green)

• Brief history of time

- Started in BR as trackman 1991, no knowledge about railways or risk
- 1st , 2nd and 3rd shift were a track renewal of Met Jcn
- Section manager took me out walking doing renewal specs
- Section Supervisor in 8 years and Section Manager in 10 years
- First Section Manager to have a Track Engineer under Railtrack (Neil Hobden)
- TME since 2008 Ashford and Tonbridge with Secondments to other things





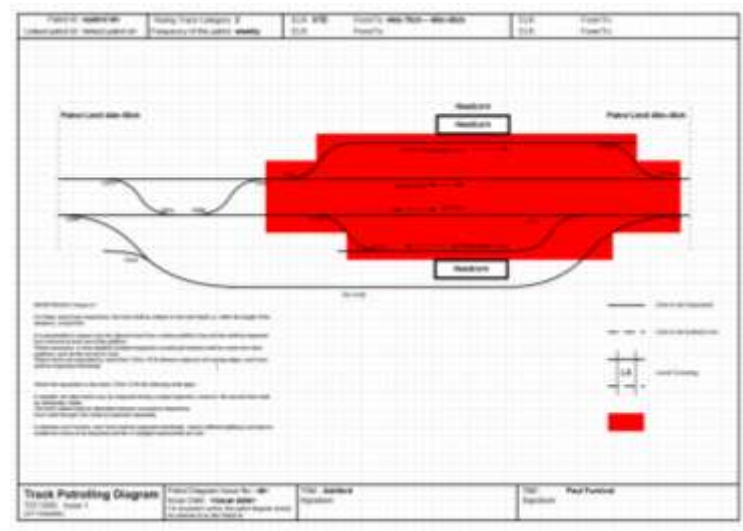
Track recording



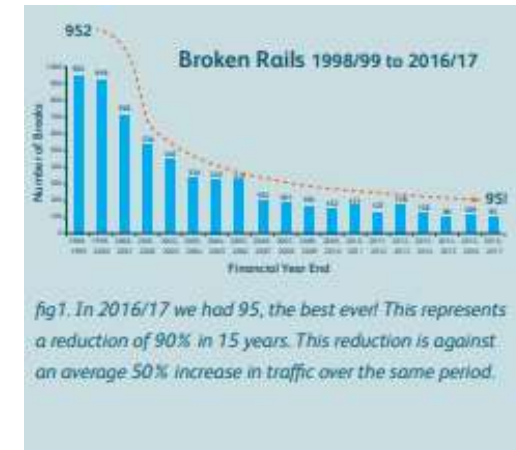
Recording site details



All other Inspections



First Patrol Diagrams 2009



UTU using GPS for ultrasonic inspections location, then for L2 s





Table 2 - Minimum Actions Following Risk Based Maintenance Inspections

Component	Defect	Minimum Action	Maximum Thresholds to Complete Minimum Action				Failure Modes
			Track Cat 1A & 1	Track Cat 2	Track Cat 3	Track Cat 4 & 5	
Flat	Too low	Re-level within 2 years	3 years	3 years	3 years	3 years	1A/2A
Flat	Ball level within 100mm	Re-level all remaining rail depth	Re-level 13 months, re-level 5 years	Re-level 13 months, re-level 5 years	Re-level 13 months, re-level 5 years	Re-level 13 months, re-level 5 years	1A/2A
Track Bed	Worn Crown	Re-level 13 months, re-level 5 years	30 months	30 months	30 months	30 months	1A/2A
Track Bed	Worn Crown	Re-level 13 months, re-level 5 years	30 months	30 months	30 months	30 months	1A/2A
Adjustment	Track level within 100mm	Re-level 13 months, re-level 5 years	30 months	30 months	30 months	30 months	1A/2A
Adjustment	Track level within 100mm	Re-level 13 months, re-level 5 years	30 months	30 months	30 months	30 months	1A/2A



Form TEP Inspection

Issue 61 Sep

Summary of

Track Section

ELR

Between

Mileage from

Line speed

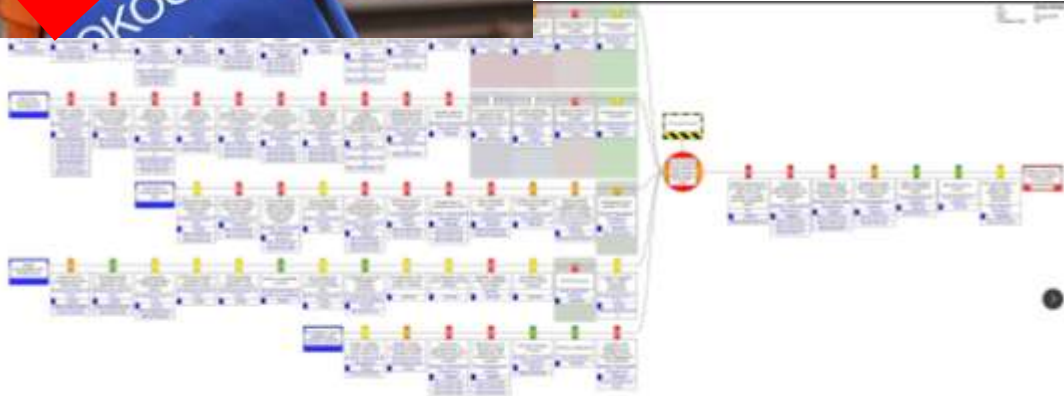
Traffic types / loads

Track config

Rolls (Consider old sections and history)

Sleepers (Consider old sleepers and history)

Ballast profile



Things I have learned along the way

- Know your patch, but it can change
- If it needs fixing, get it done
- You need to trust people, but know their limitations
- Be strong and determined, but don't take everything on yourself
- Knowledge of a problem is great, but seeing it is better



Advance learning – When things don't go to plan

- Remember why you're there
- And you always have the
'Who wants to be a millionaire option'

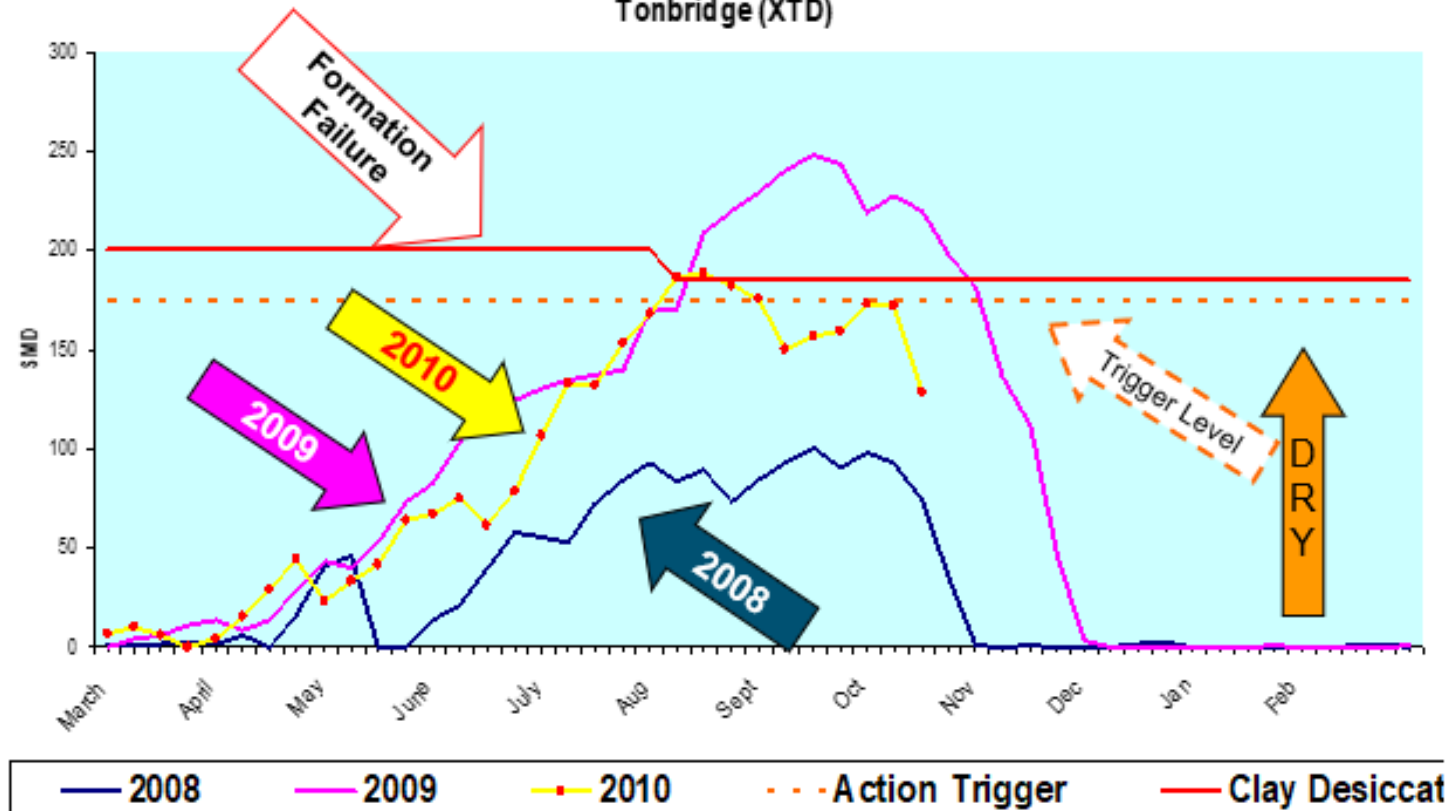


SMD for Square 174

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SMD MOREC Square 174: Covering Ashford to Maidstone (SBJ) & Ashford to Tonbridge (XTD)



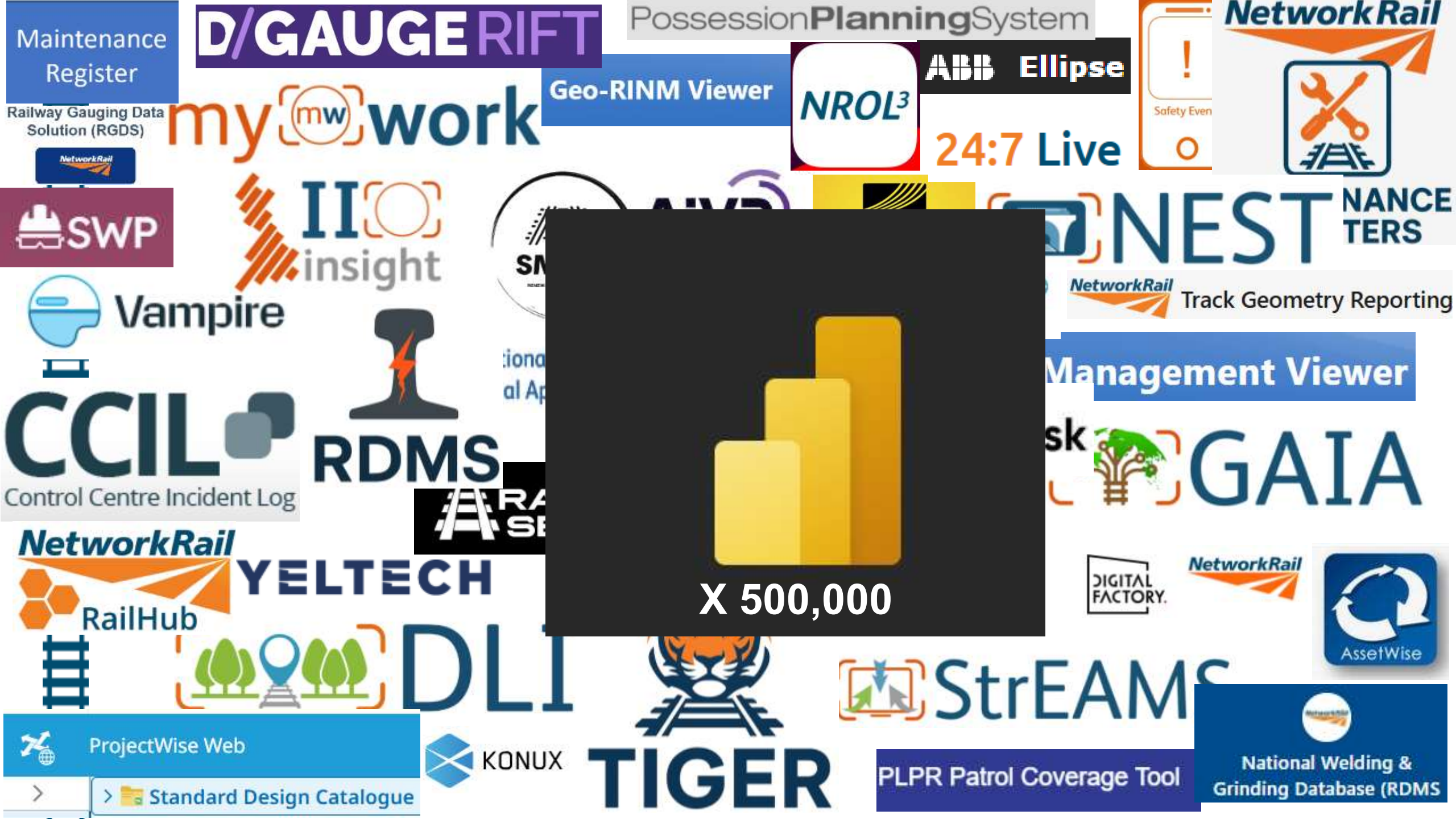
New Tricks?

Started on the railway not long after Paul in 1997...





*“Technology is
the Answer!”*





Maintenance
Register

D/GAUGE RIFT

Possession Planning System

ABB Ellipse

Geo-RINM Viewer

NROL³

Railway Gauging Data
Solution (RGDS)

SWP

Vampire

CCIL
Control Centre Incident Log

Network Rail
RailHub

ProjectWise Web

Standard Design Catalogue

KONUX

TIGER

PLPR Patrol Coverage Tool

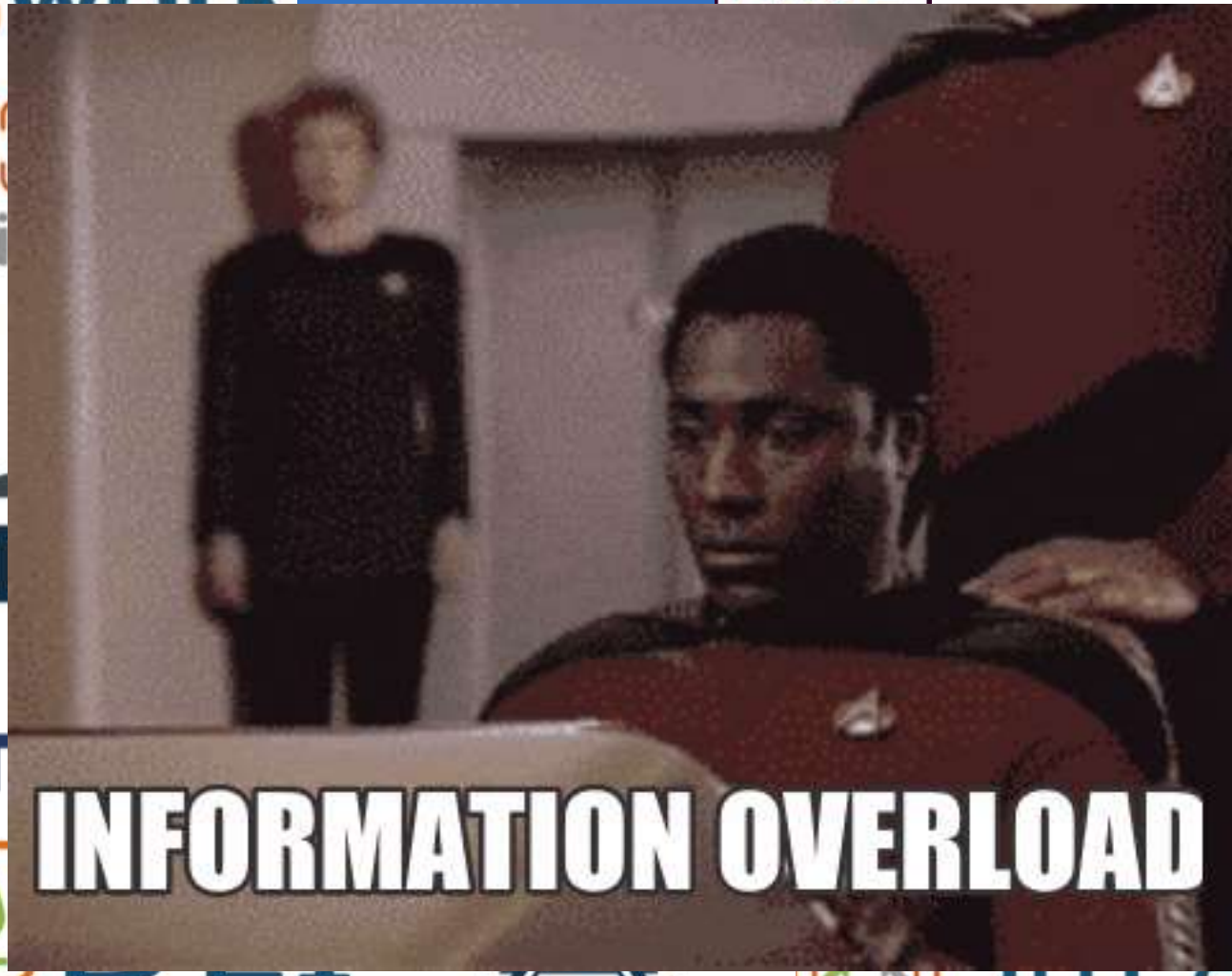
National Welding &
Grinding Database (RDMS)

Network Rail
Safety Even
NEST
Track Geometry Reporting

Management Viewer

GAIA

AssetWise

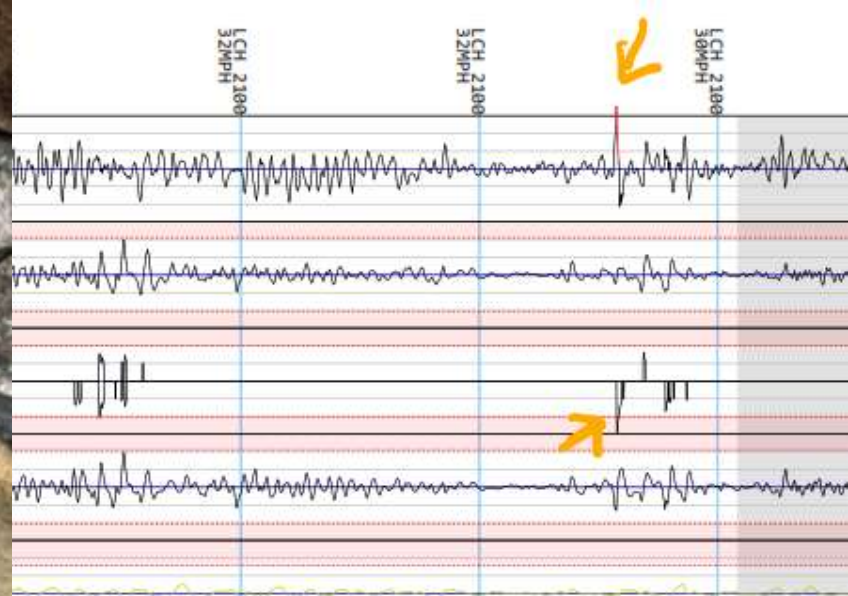
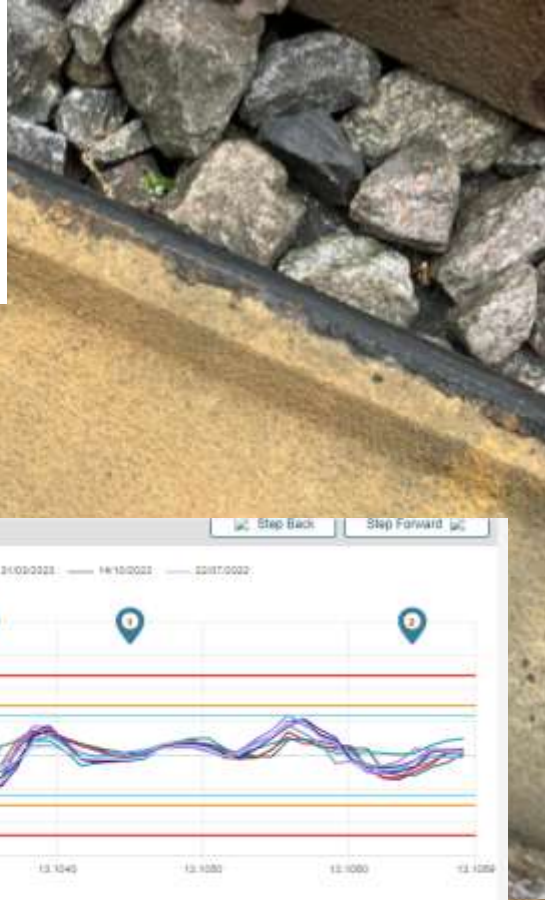


INFORMATION OVERLOAD

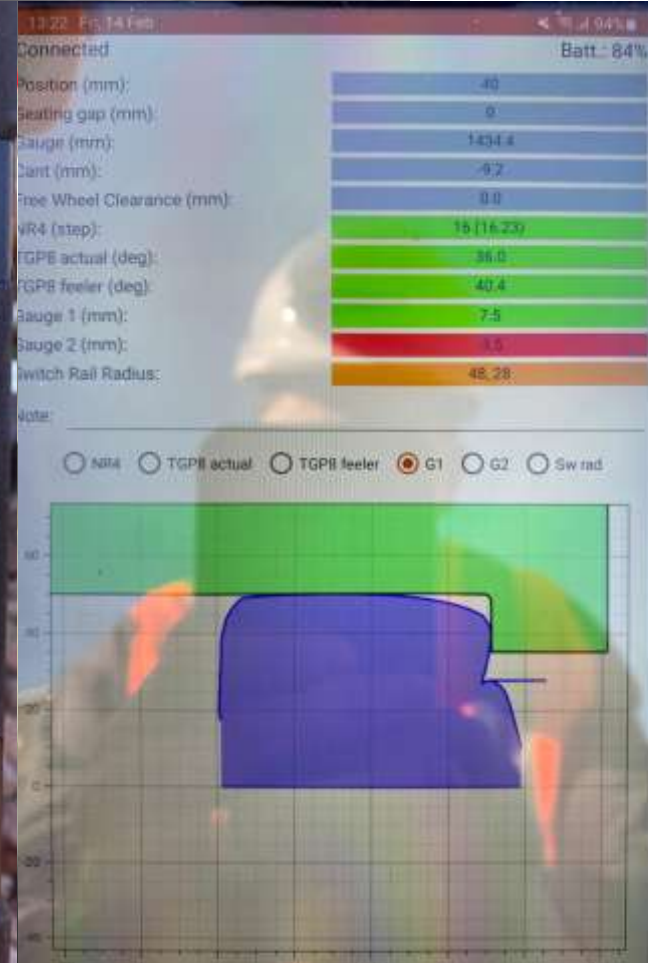
Making Data Work For Us...



Bringing Datastreams Together

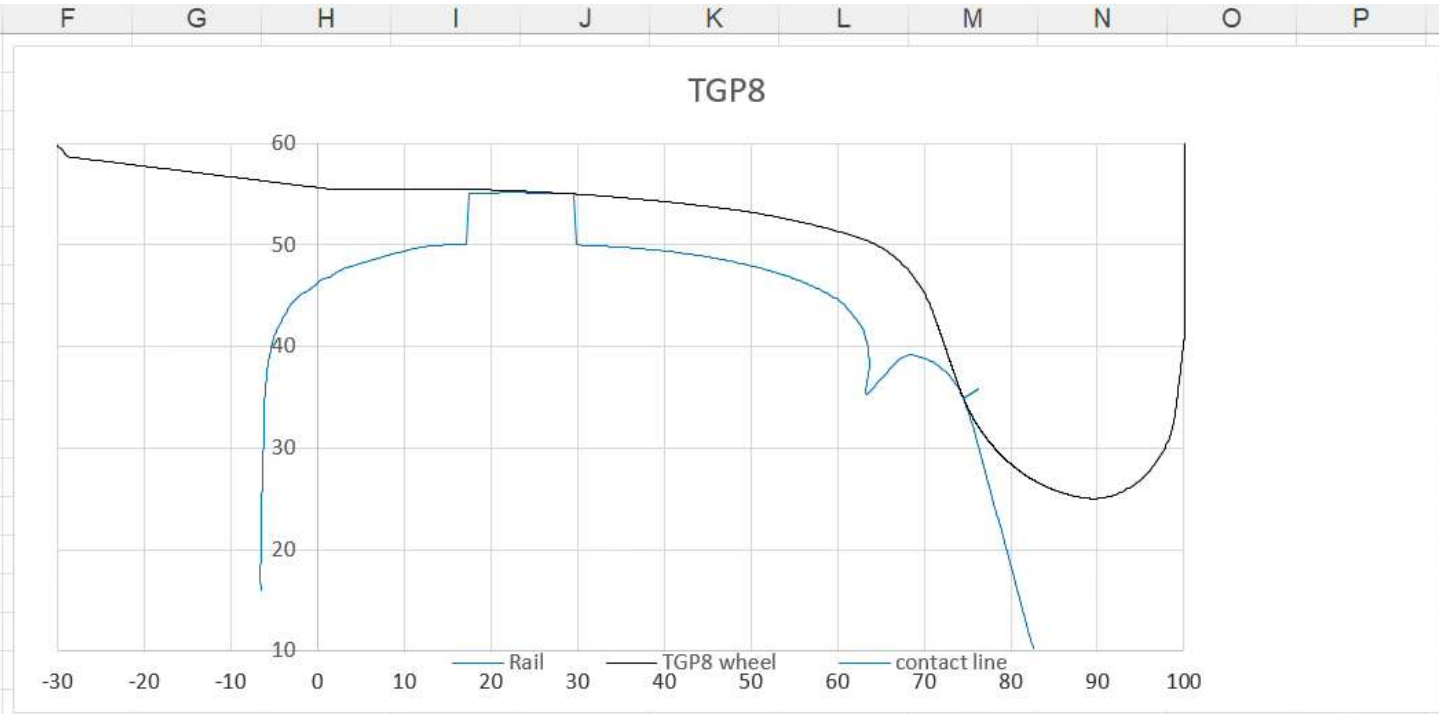


Increasing Inspection Accuracy



Increasing Inspection Accuracy

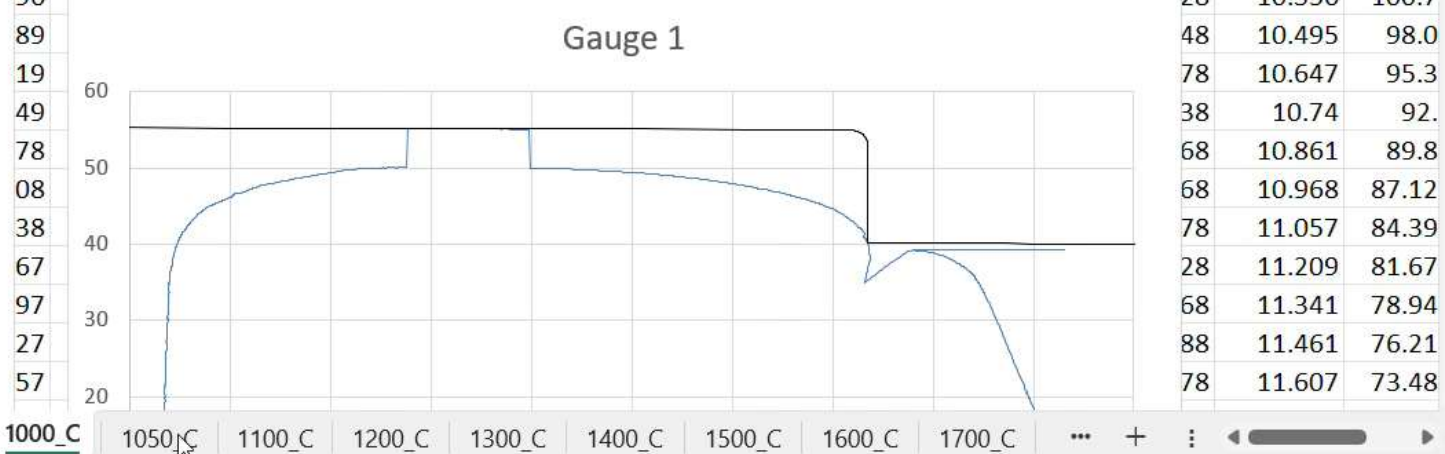
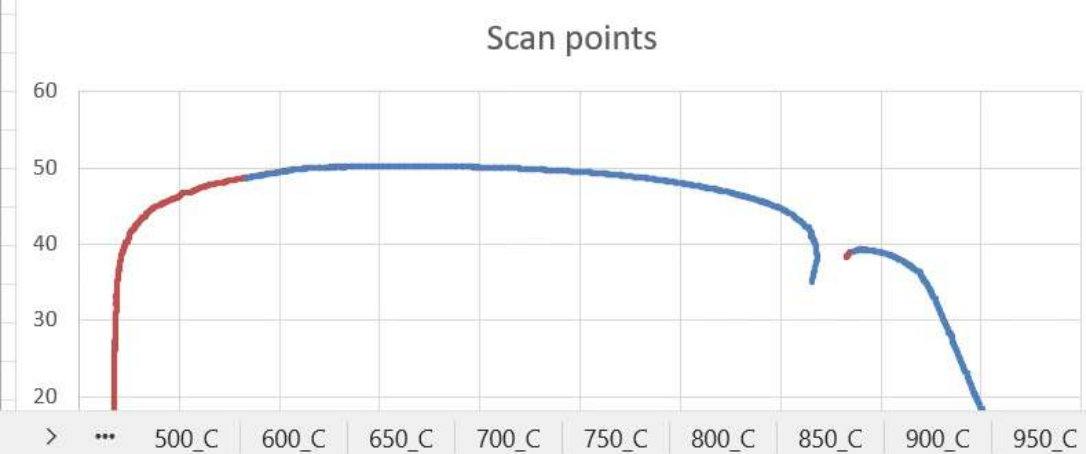
Measurement type	Value	Back to summary
Track gauge (mm)	1441.7	
Cant (mm)	-0.1	
Free wheel clearance	0	
Seating gap (mm)	5	
TGP8 actual (deg)	63.4	
NR4 (step)	16 (16.47)	
Gauge 1 (mm)	0.9	
Gauge 2 (mm)	3.0	
Switch rail radius	15, 21, 31	
Notes		
Verification check date	29 December 2024 05:16:25	
Scan date & time	29 December 2024 08:49:00	



Data points			
X gauge	Y gauge	X field	Y field
97.4998	-19.806	82.8138	37.218
87.4568	10.682	82.1238	37.736

TGP8					
X rail	Y rail	X TGP8	Y TGP8	X lines	Y lines
82.6258	10.231	100.126	84.6969	74.5307	34.8981
82.5548	10.405	100.126	44.496	75.2184	35.7048

Gauge 1		
X rail	Y rail	X Gauge
92.6258	10.231	103.4
82.5528	10.356	100.7





Simpler Data Visualisation^{OFFICIAL}

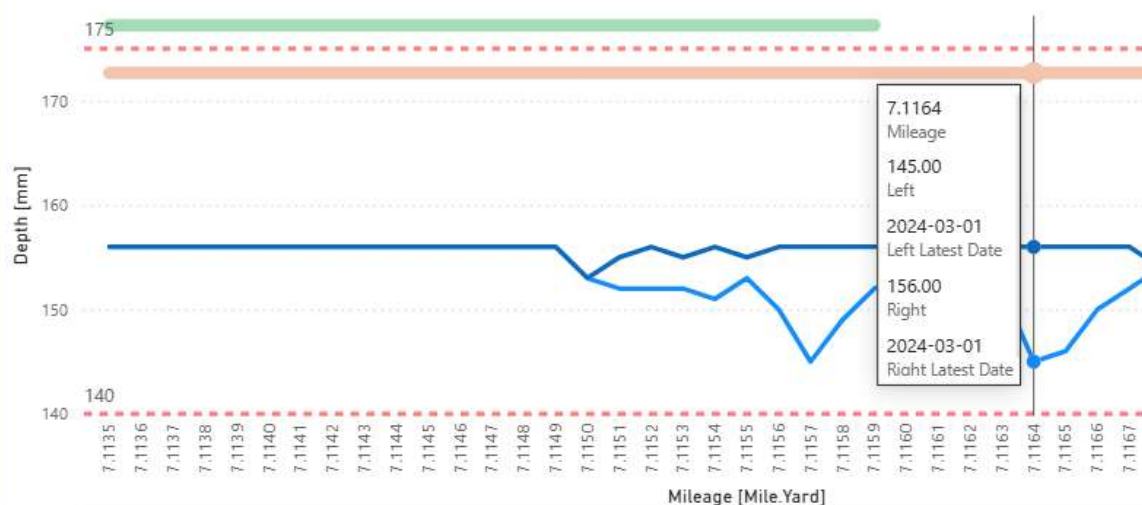
ELR-TID-Date

- ☐ BEX-1100
- ☐ BEX-2100
- ☒ BTC-1100
- ☒ 2024-03-01
- ☐ BTC-2100
- ☐ 2024-03-01
- ☐ HDR-1100
- ☐ HDR-2100
- ☐ LCH-2100
- ☐ NKL-1100
- ☐ 2024-06-21
- ☐ 2024-03-01



Latest Depth Detail

- ☒ Left
- ☒ Right
- ☐ Bridge
- ☐ Curve
- ☐ S & C
- ☐ Platform
- ☐ Tunnel



23-24ch Dn Rd
7mm headwear
both rails

Getting Teams Involved





Remote Scoping

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AiVR
Workspace: **National Track Inspection (Class 153 VIU & UTU)**
UTU 1 XTD 7m46c to West St Leonards #372083 ☆

LAT: 51.4362404 LNG: 0.0148843 ELR Mile & Chain XTD track 2200 8.34 +3m speed 18 MPH (Tachometer)

+

^

Navigate Up

-

v

Navigate Down

▶

Play

Settings

Image Adjustments

Primary

+

-

Map

Data

Leaflet | © MapTiler © OpenStreetMap contributors | Contains Ordnance Survey data © Crown copyright and database right 2024. Licence No. AC0000849662

X: 0 Y: 0

Reset

18/09/2024 21:35:10 BST

XTD 7.46

18.17

28.66

39.39

5

2

Q

S

I

3

Q

S

I

4

Q

S

I

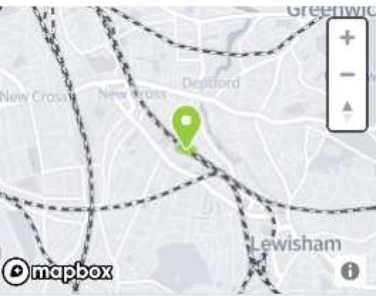


Assessing Repair Effectiveness & Giving Positive Feedback



833B(TU)
Tanners Hill

Advanced



Health

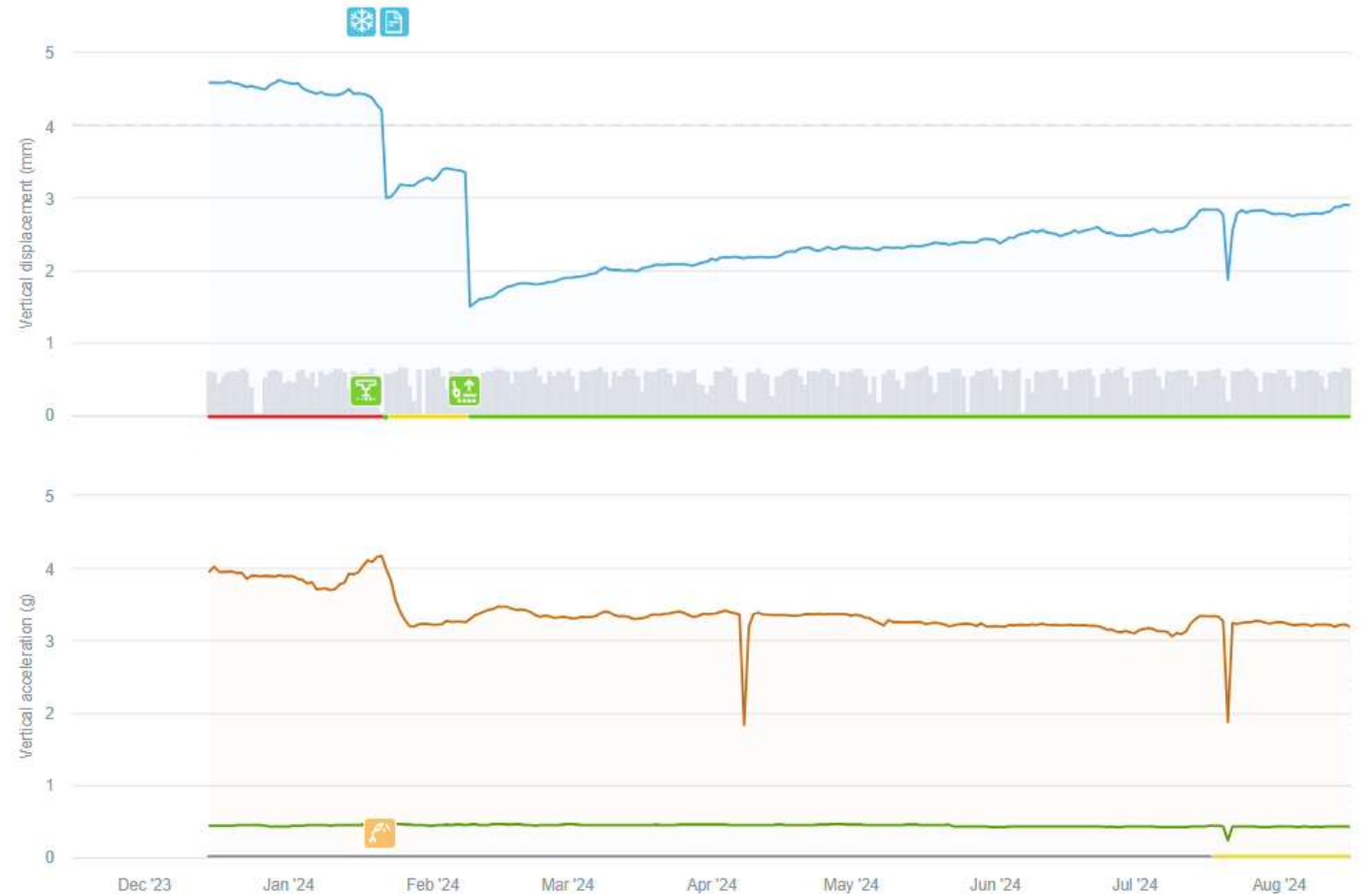
- Load and traffic
- Data explorer
- Track access windows
- Point operating equipment

Health at Crossing

Device status Healthy Add maintenance activity

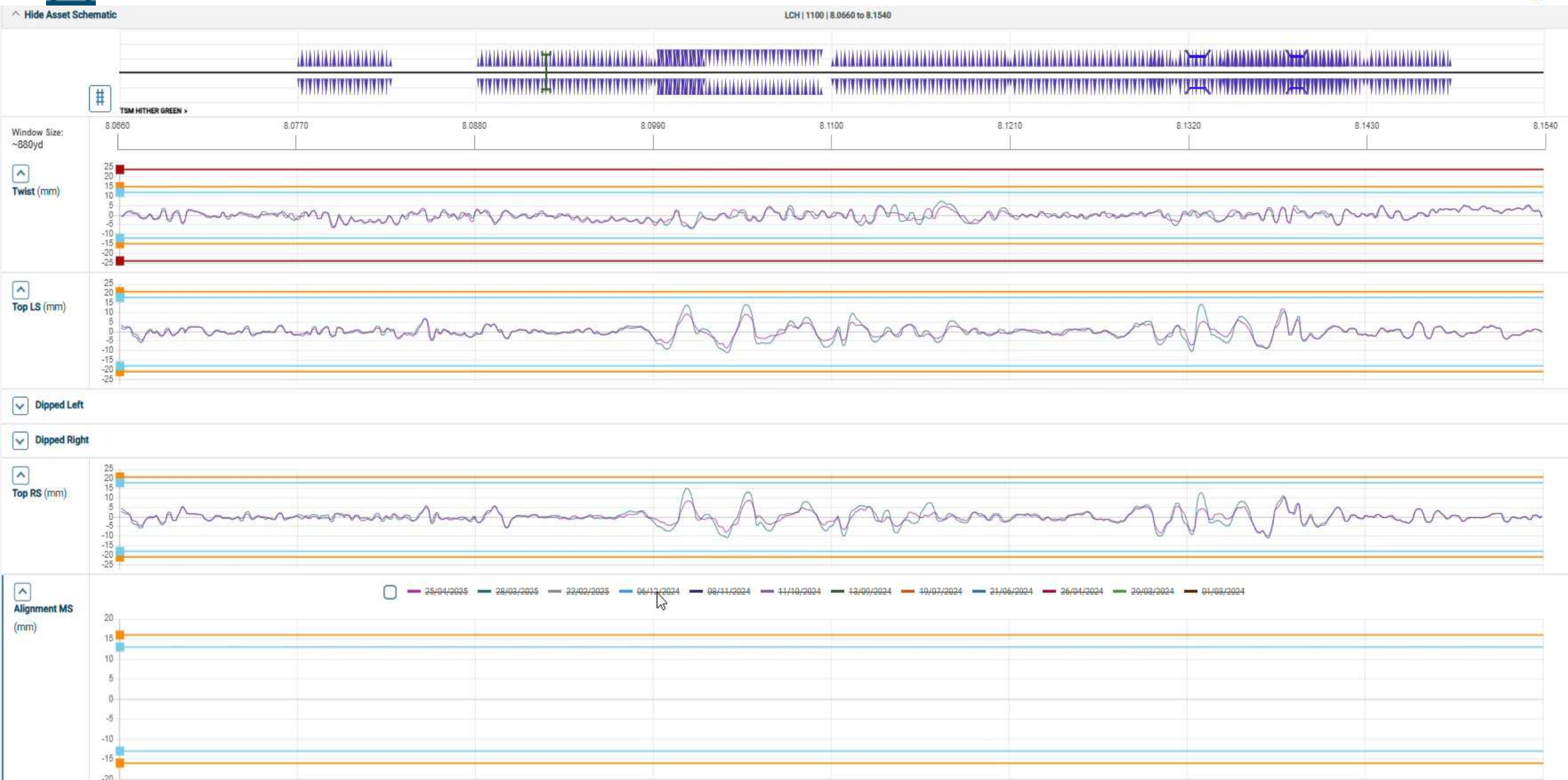
- TB** Trackbed
 - Vertical displacement ⓘ 1.5 mm
 - 90d forecast 1-2 mm
- CR** Crossing
 - Vertical acceleration (7d avg) ⓘ 1.3 g
 - Relative acceleration ⓘ -9%
 - Recent activity Not available

Vertical displacement and acceleration





Assessing Repair Effectiveness & Giving Positive Feedback





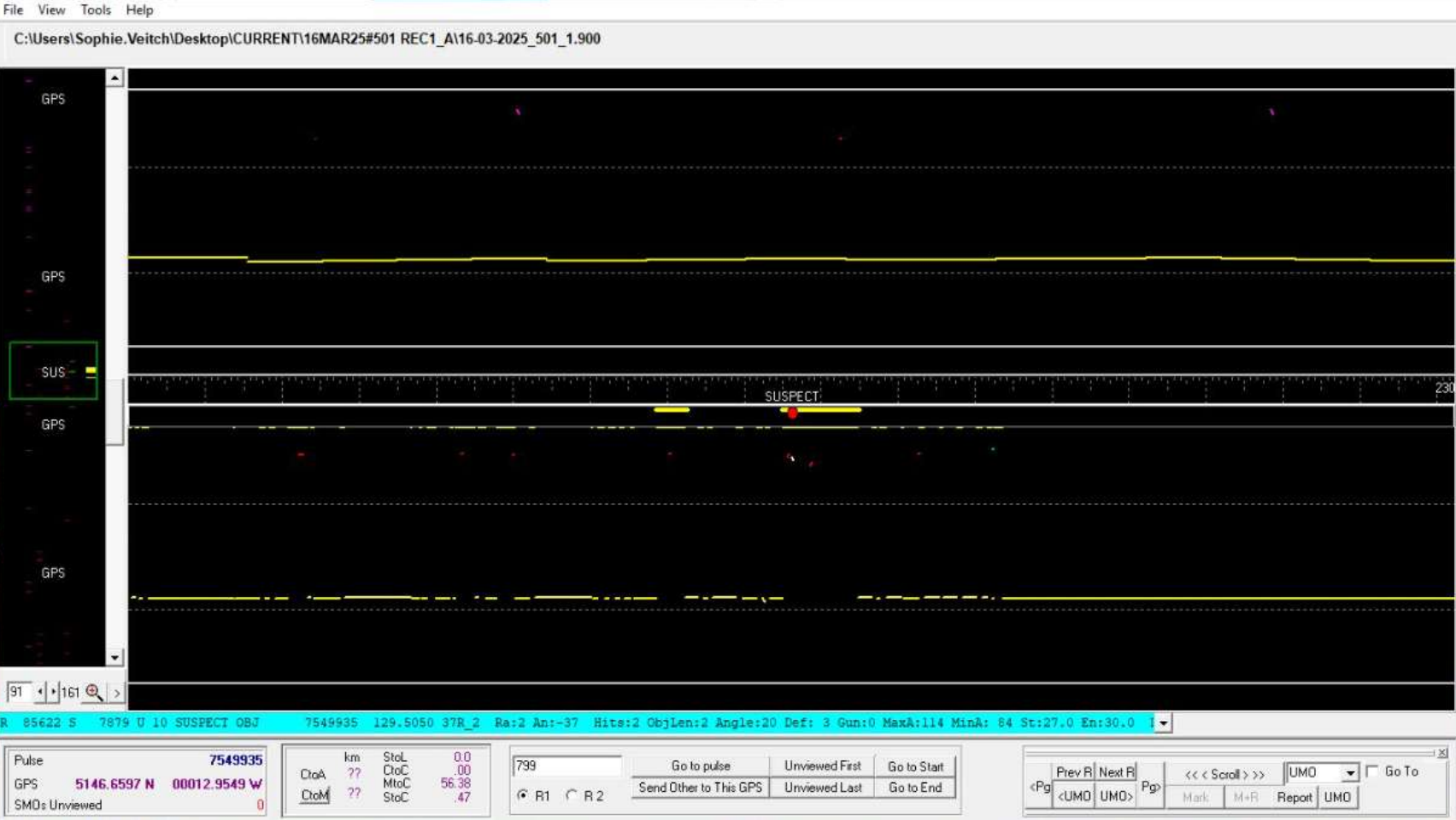
Remote Risk Review

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NEW SUSPECT RAIL DEFECTS REQUIRING VERIFICATION

Possible Surface Damage (Squat) Midrail. Length greater than 50mm 37 Indication Only (No T.O. Indication) middle of a cluster of similar indications

Priority: 3 Rail: L Pulse count: 7549935 UID: 547985



Suspect ID	Run Date	ELR	Track ID	Rail	Mileage	GPS Location	UIC Code	Description
547985	16/03/2025	ECM1	1100	L	18m 1100y	5146.6597 N 00012.9549 W	227	Possible Surface Damage (Squat) Midrail. Length greater than 50mm 37 Indication Only (No T.O. Indication) Middle of a cluster of similar indications

Nothing Ever Changes on the Railway

Except...



Thanks For Listening!

