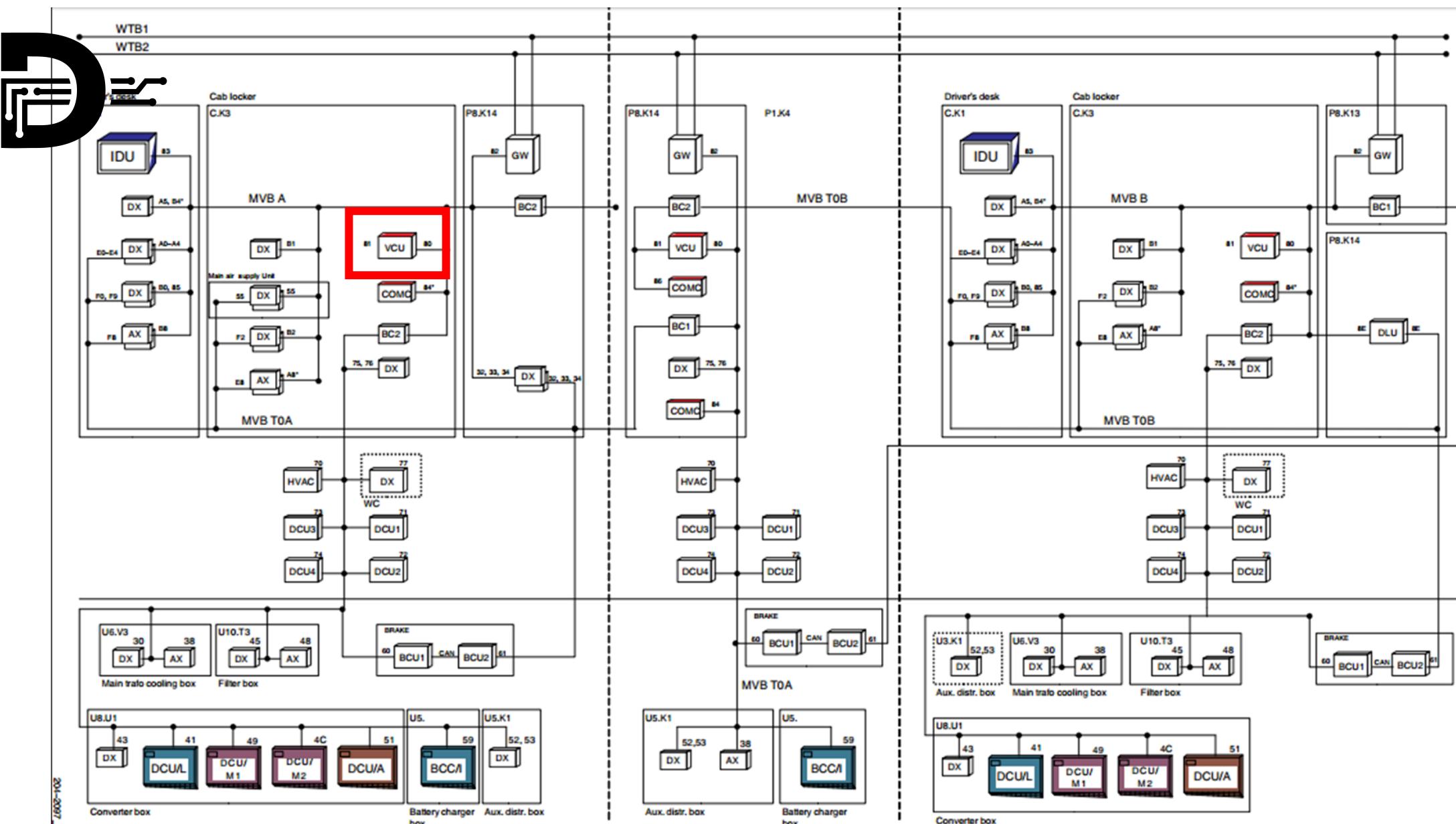


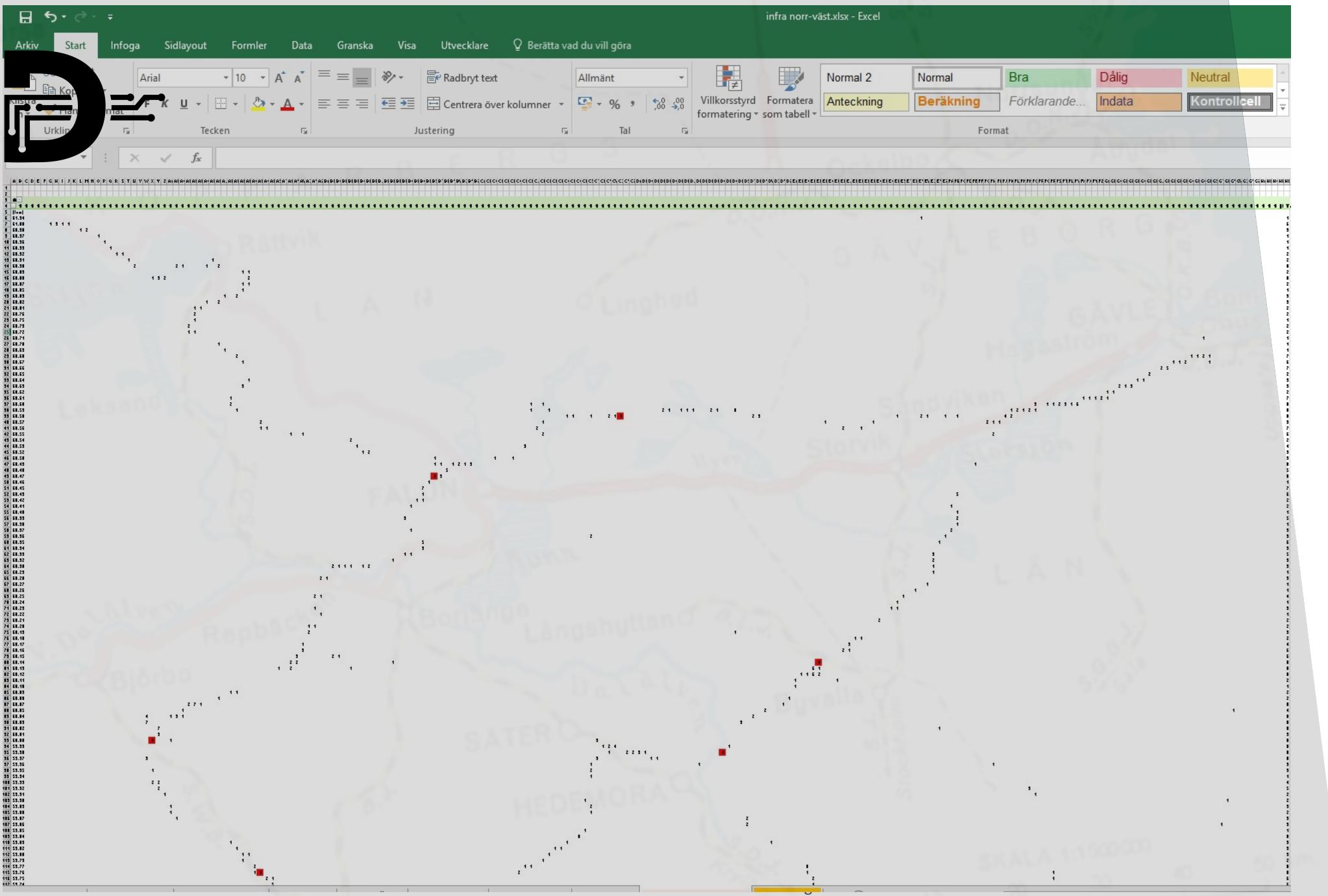
A high-speed train is positioned on a track within a modern railway station. The station features a large, curved glass roof supported by a steel framework. The platform floor is made of dark tiles with a textured pattern. In the background, the station building is visible, and overhead catenary equipment is seen above the tracks.

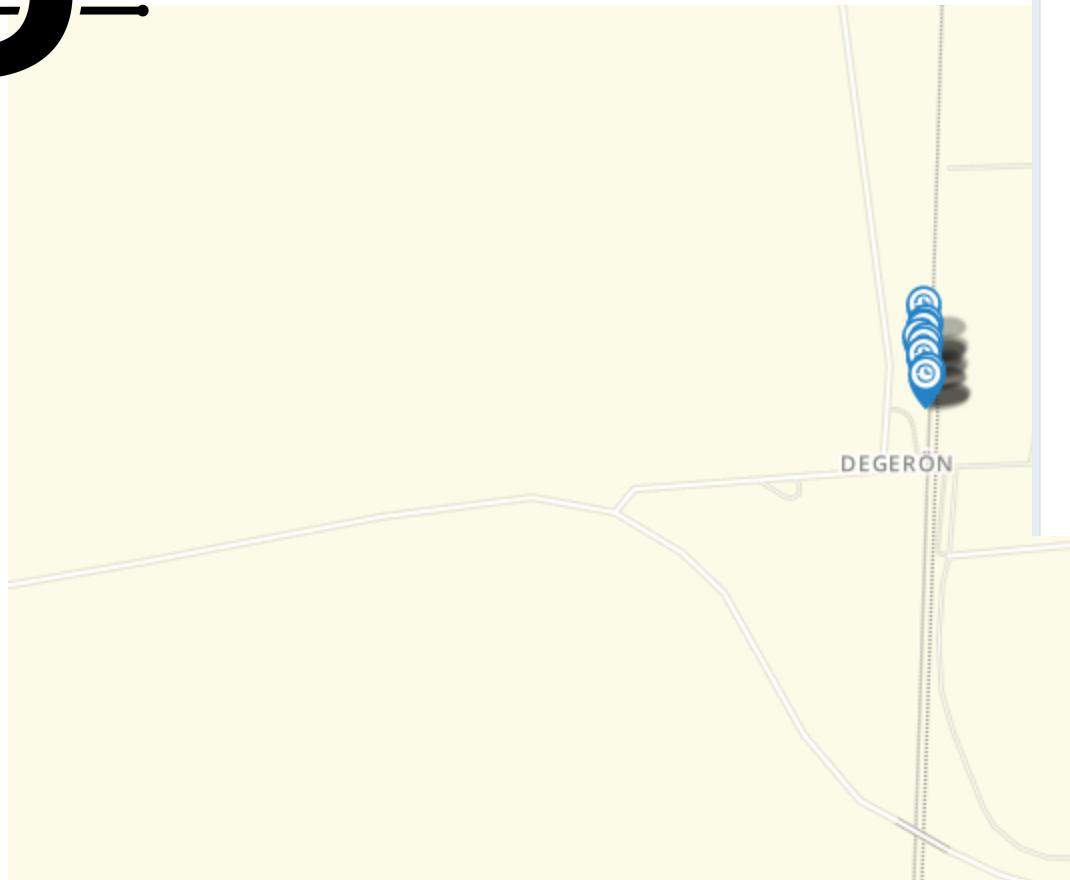
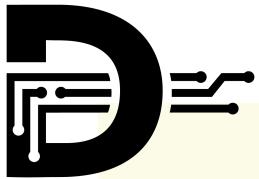
DRAIL

KEEPING TRACK









ANNONS

Lägre kostnader. Färre besök på fältet. Nöjdare kunder.

Rescue Lens. Innovativ direktvideo som stöd vid tillverkning.

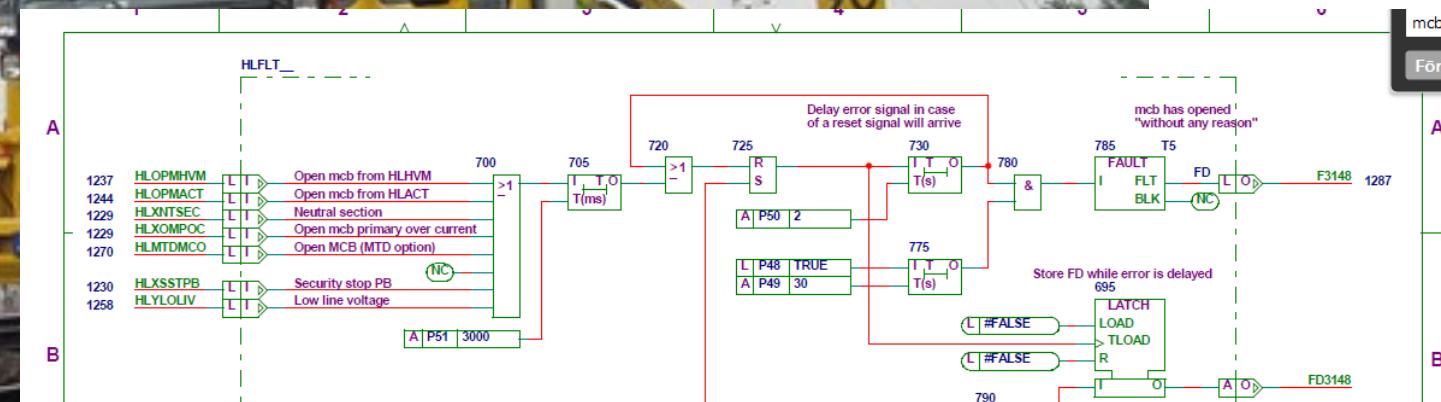
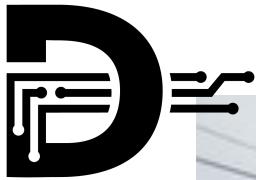


Redan i december fick samarbetet effekt. Då upptäckte Euromaint Rail att flera tåg hade registrerat problem med strömförserjningen på en speciell sträcka norr om Motala. Felet var en skadad kontaktledning som riskerade att rivas ned av tågens strömavtagare.

Tack vare att tågen som passerade kände av felet och rapporterade det kunde Trafikverket åtgärda skadan innan den ledde till att ledningen fallit ner och orsakat trafikstopp.

Leaflet

#	Allvarlighet	Tägsätt	Aktiv hytt	System	Tid	Hastighet	Riktning	Händelse
121 visa		9023	DMA	Kraftförsörjning	2014-12-05 11:15:40	116 km/h	Väster	3148: Huvudbrytaren har öppnats p.g.a. fel
122 visa		9021	DMA	Kraftförsörjning	2014-12-05 08:21:09	159 km/h	Norr	3148: Huvudbrytaren har öppnats p.g.a. fel
123 visa		9021	DMA	Kraftförsörjning	2014-12-05 06:24:30	139 km/h	Syd	3148: Huvudbrytaren har öppnats p.g.a. fel



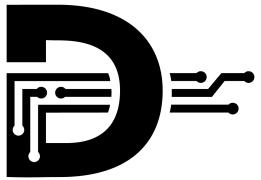


Photo: Svante Fält

7





HÅKANTORP-Ö

Accident Octo Train Easte

Prima Second mainten Result structur No. Fatality No. Injuries A Great InterCity had been It was hour (south. Four p further in the

On 10 M occurred derailed train en station p structure A West service l 12:45 b Norfolk, travelling Class 365 electric multiple unit (unit

Start Nyh

F

E

1. annonsen

Håkantorp-Ö

tar på ib.adnxs.com...

WanderWander

Gefle Dagblad

Train Operator(s) - West Anglia Great Northern

[Home](#) [Videos](#) [City](#) [India](#) [World](#) [Business](#)

Primary Secondary Result structure

No. Fatalities

No. Injuries

A Great InterCity had been

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structure

A West



ägare



huvudman



operatör



underhållare



TRAFIKVERKET

ägare /förvaltare

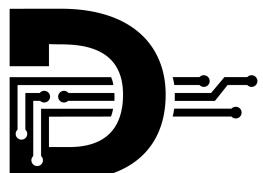
INFRANORD

mätning

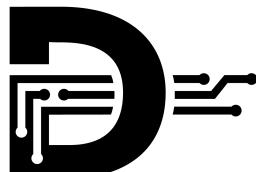
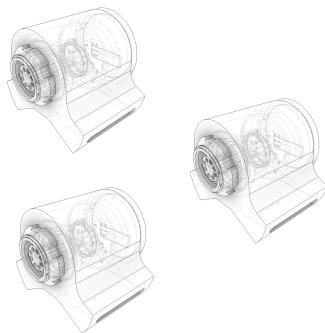
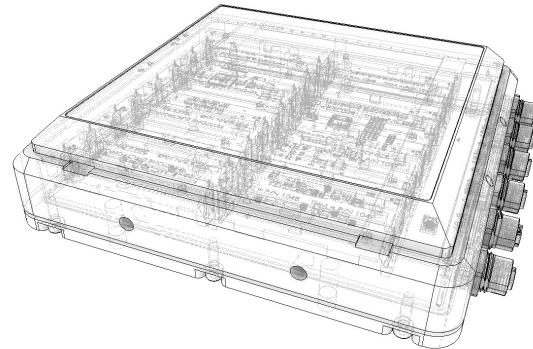
DATA

NRC Group

underhållare



The hardware



SENSORS:

Cutting edge technology designed for minimum maintenance and maximum performance.

The sensors are developed to measure the relative status of tracks, track bed, catenary and signal system, and can do this from any train.

They are designed to fulfill EN50155, EN50121, CE, IP68 and IK10. etc.

The sensors are completely autonomous with a battery life, without energy harvesting, up to 2,5 years in full operation.

Combined with an energy harvesting circuit (magnetic field harvesting) extends the battery life up to infinity.

Without energy harvesting, the sensor is charged on the train inside the depot. 1 hour = full charge.

The hardware



INSTALLATION:

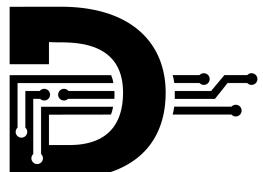
1 gateway & 2 sensors (with 2 or 3 sensing devices) per train is all that is needed.

The sensors are developed for maximized ease of installation and done without a single hole being drilled. One complete train is installed in about 1-2 hours.

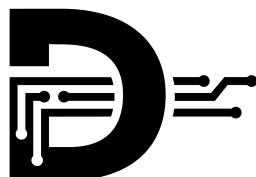
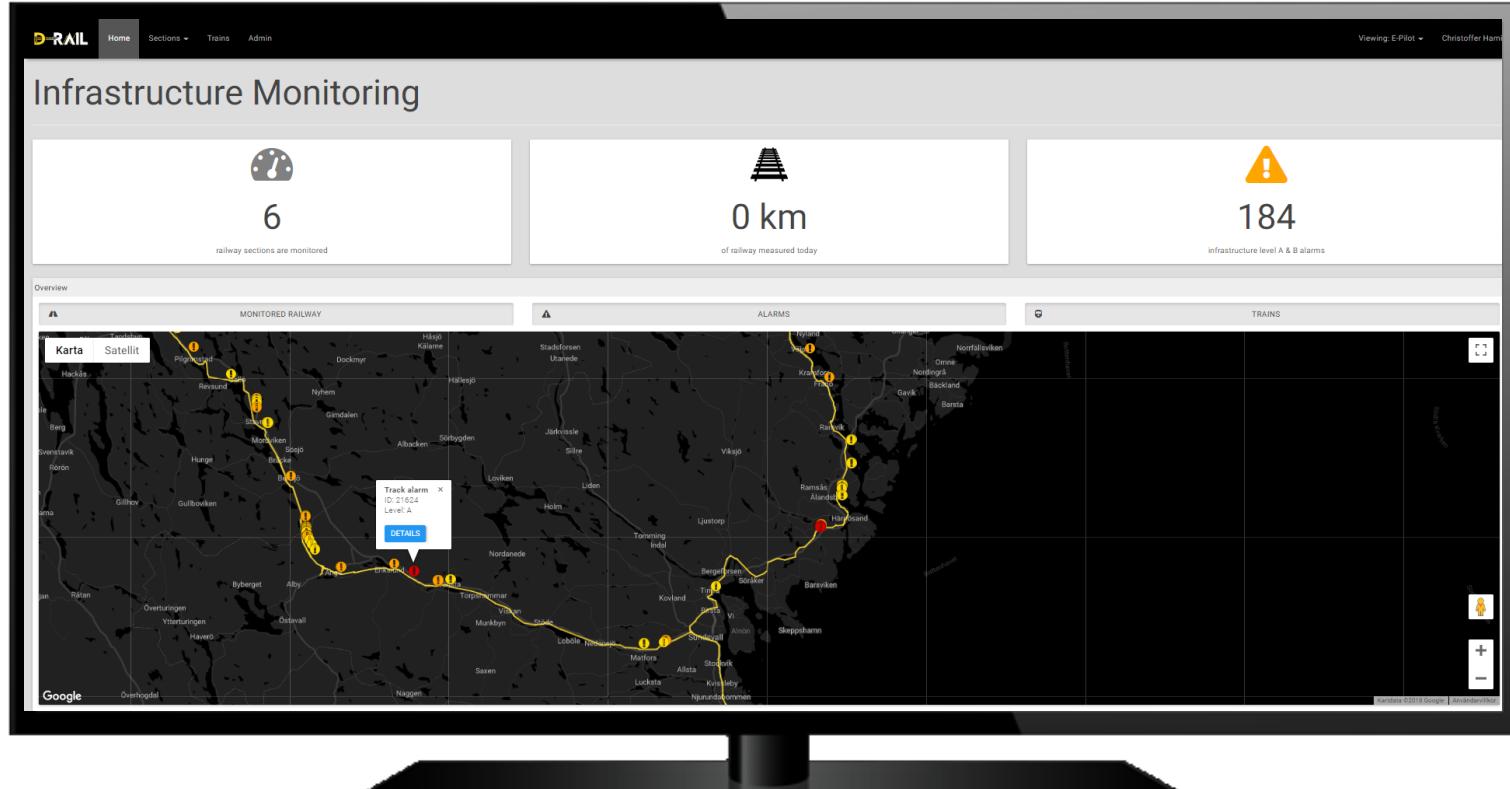
Train specific documentations prior to installation is produced together with train operator/owner and signed by the necessary parts.

The system is CSM-RA considered to be a non significant change. And 100% reversible.

The system is owned and insured by D-Rail.



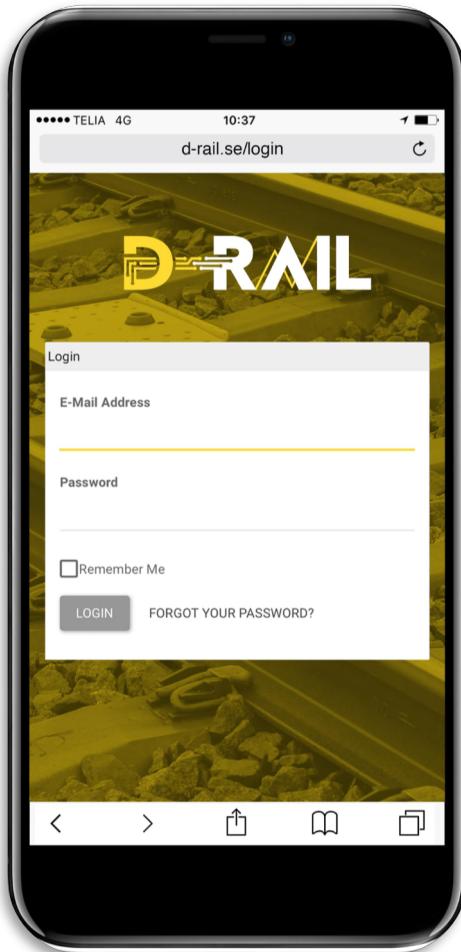
Infrastructure Monitoring As A Service



www.d-rail.com

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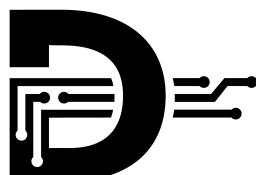
IMAAS

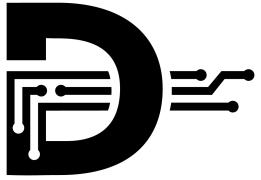


**We provide a real time information online,
from any device.**

**All information online is analysed
and processed in the cloud by us.**

**The information does not need to be
downloaded or processed locally.**

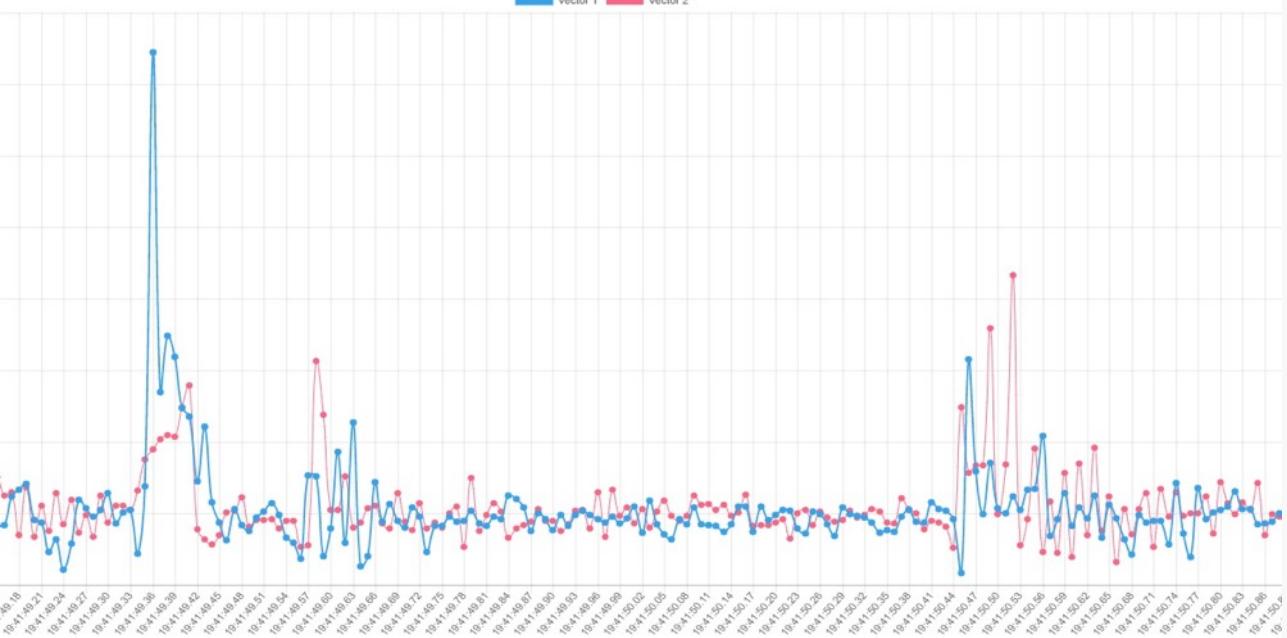




**AN EXAMPLE OF A TRIGGERED ALARM,
UNDERMINATION CAN COME SUDDEN AND CAUSE ACCIDENTS**

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11

I do not believe that our staff has even noticed that there is measurement equipment onboard

LENNART SKOOG

FLEET MANAGER TKAB

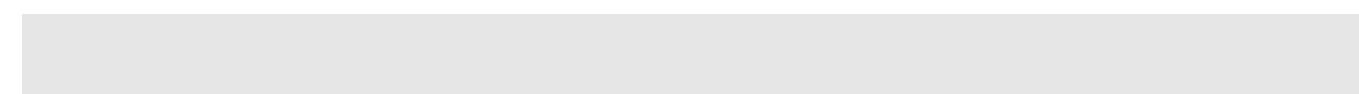
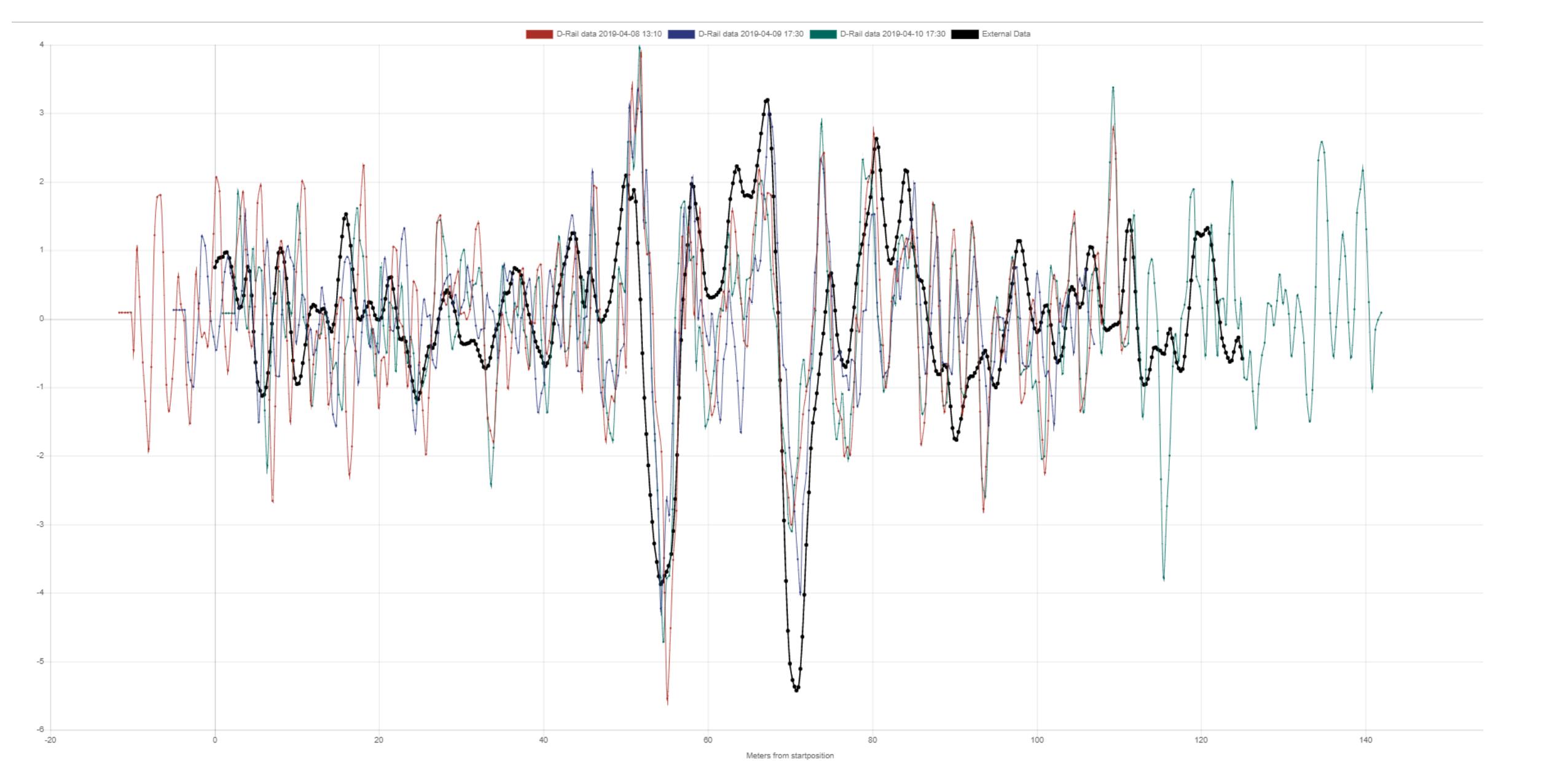
A yellow curved shape, likely representing a segment of a larger diagram.

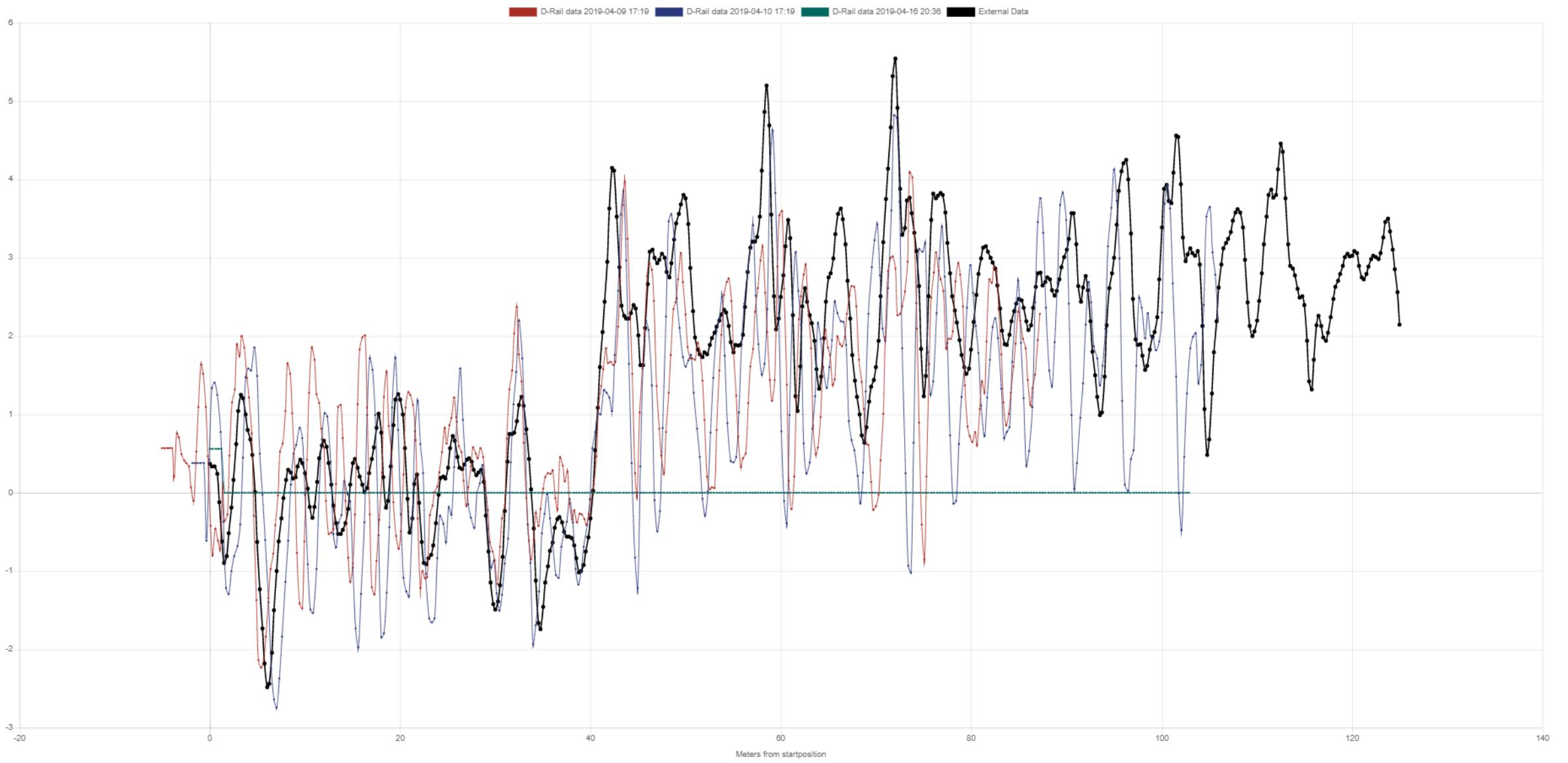
We are very pleased with the help we received locating a defect on the rail that was damaging wheels on vehicles of the Green line."

MAGNUS LÖFGREN

FLEET MANAGER MTR TECH







FAKTORER SOM KAN VARA PROBLEMATISKA (BRANSCHÖVERSKRIDANDE)

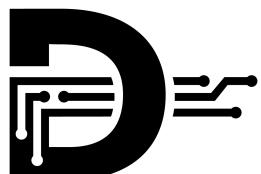
Inköp – Innovationsupphandling, LOU/LUF, funktionsupphandling?

Ändra material/ addera något nytt –
Finns krav från tillverkare / leverantör?
Eller påverkar vi andra krav på produkten som berörs?

Individer eller grupper – Att individer eller grupper faktiskt inte gör som de blivit tillsagda eller inte kan/ förstår.

Olika budgetar – Att det faktiskt kan skapa en förlust inom någon del av en och samma koncern

Omöjligt - Man har inte på projektnivå skapat kompletta kedjor



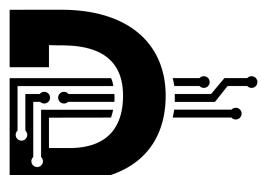
FAKTORER FÖR ATT LYCKAS MED FÖRÄNDRING

Ledarskap – det som ska ändras ska tydligt signaleras

Projekteras – hur det ska ändras ska tydligt bevisas

Implementeras – de som ska ändra sitt arbete ska förstå vad och hur det ska ändras och ska göras i en övergångsperiod med stöd.

Ändring genomförs – alla ska nu loopa ovanstående om så krävs vid minsta motstånd





A FEW TRAINS WITH A FEW SENSORS
CAN SAVE TIME, MONEY AND LIVES.

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The worldwide railway organisation
UIC digital award 2018



European transport
innovation award 2017



Accenture mobility
innovation award 2018



TREFF 2016 Logistics and
Transportation innovation award



Skapa national innovation
award 2015 and Skapa regional
innovation award 2017