

Data Management and Analysis of Infrastructure Measurements

NOVEMBER 28TH

INTRODUCTIONS

LUCA MILANI
Software Engineer



- Designs and implements modern data systems
- Expertise in digitizing railway networks
- Advances software design to improve railway operations

JOHAN VEKEMANS
Track Engineer



- Decades of experience in infrastructure management
- Manages Infrabel measuring cars
- Coordinates installation of measuring and video systems

TODAY'S TOPIC

DATA MANAGEMENT SYSTEM BEST PRACTICES



How to transform data into useful information



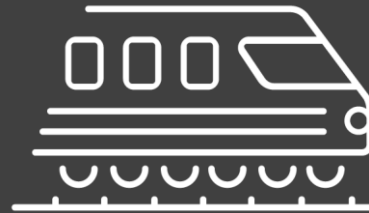
Maximizing value, ease of use, and data security



Effective maintenance and budget planning



COLLECTING THE DATA



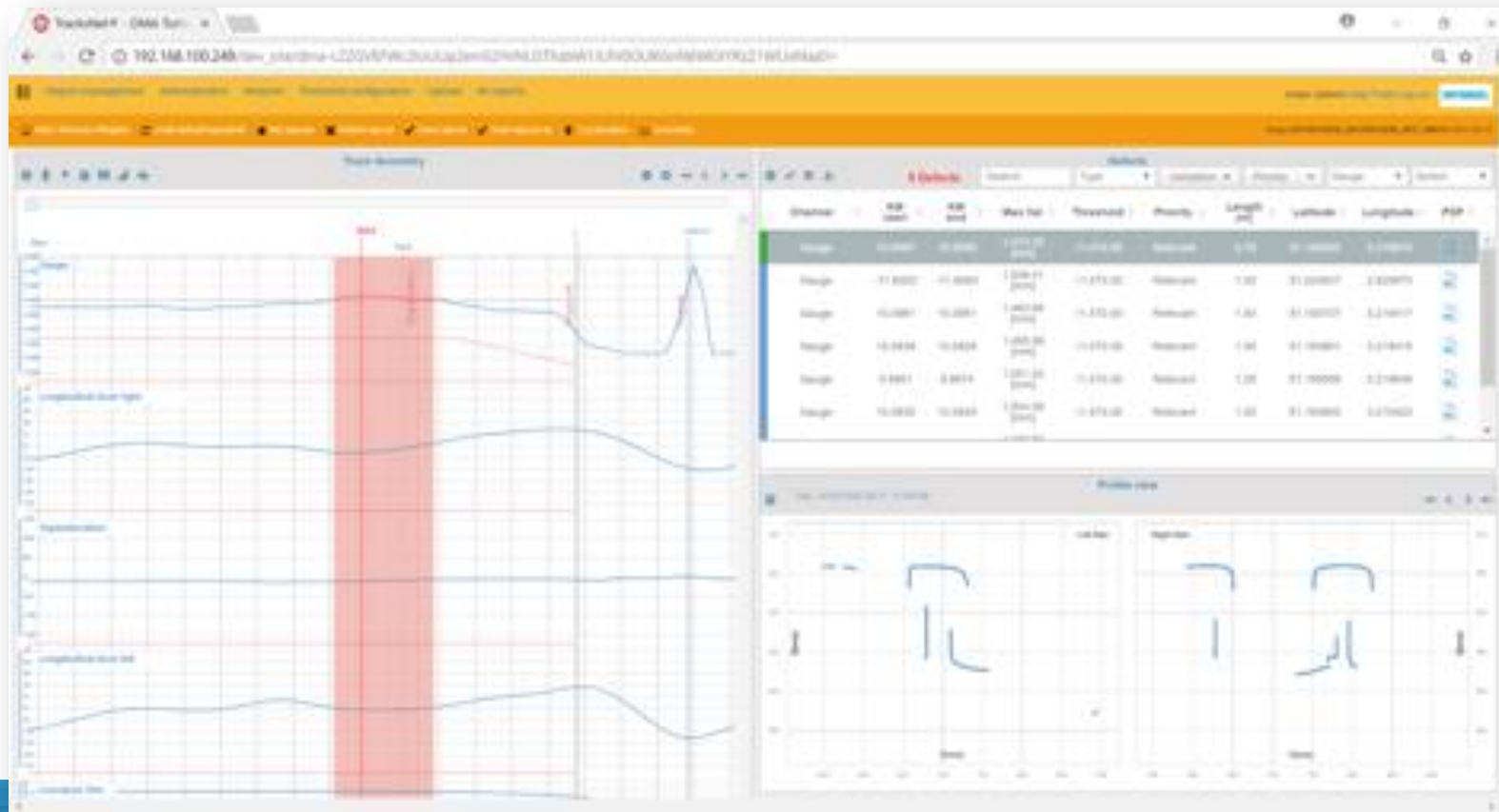
Two measuring systems
installed on Infrabel car
Track geometry Video system



Data feeds into TracksNet
Data Management System

USING THE DATA

TracksNet™ Data Management System



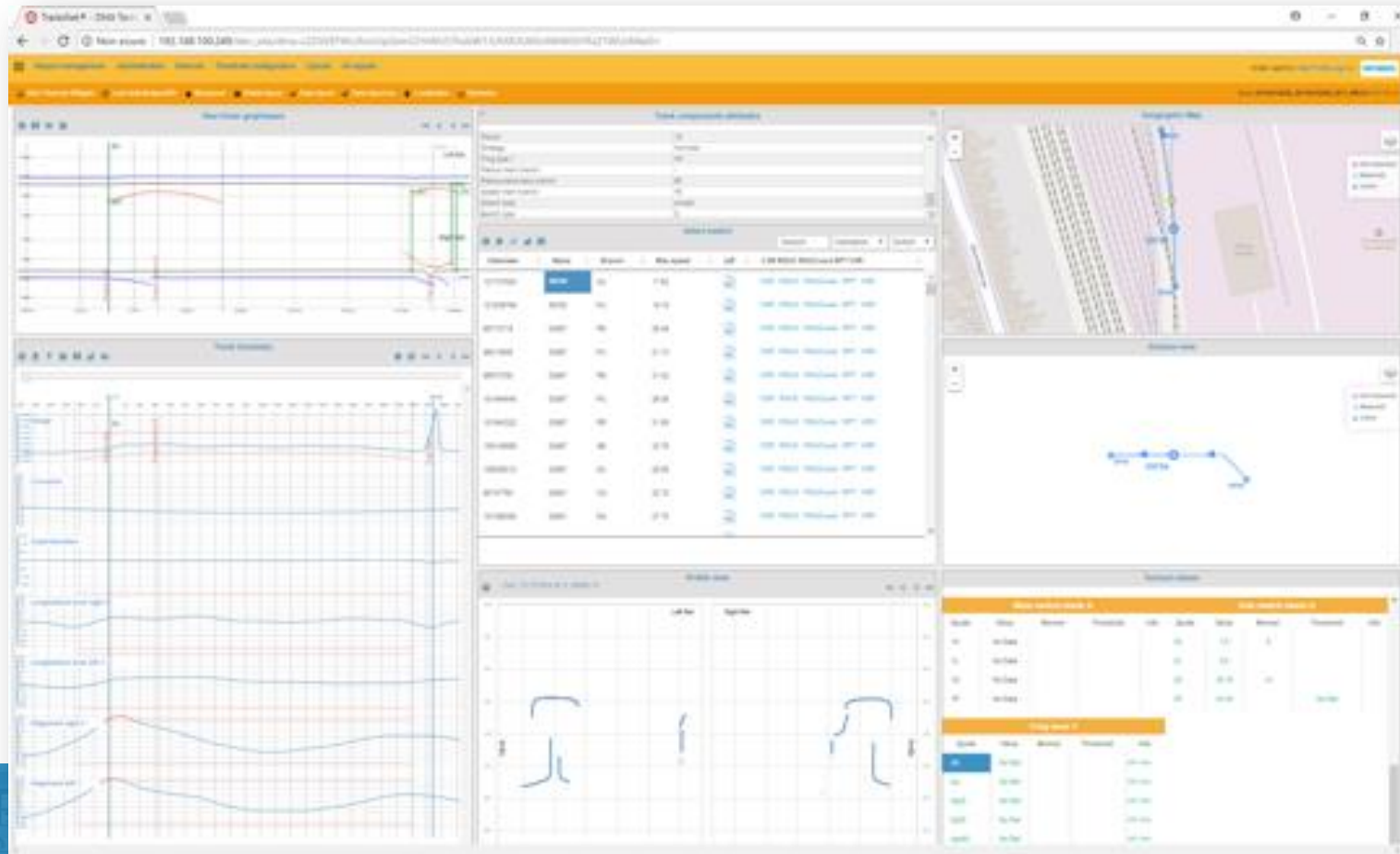
Links information from multiple data sources

Web-based, accessible from any browser

One location for analysis and reporting

CUSTOMIZING THE DATA

TracksNet™ Data Management System



Flexible screen layout
and report formats

Complete view of
the system

Intuitive and easy
to use

ANALYSING THE DATA

TracksNet™ Data
Management System

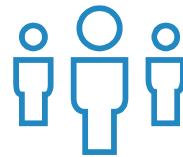


Different data analysis tools available

Threshold/formula
evaluation

Trend
analysis

Norm-based
evaluations



User administered system

Evolves with
user needs

Build
queries

User ownership
of data

ANALYSIS DMA S&C DATABASE INFRABEL



March – October 2018
= 6 months



2261
measured switches



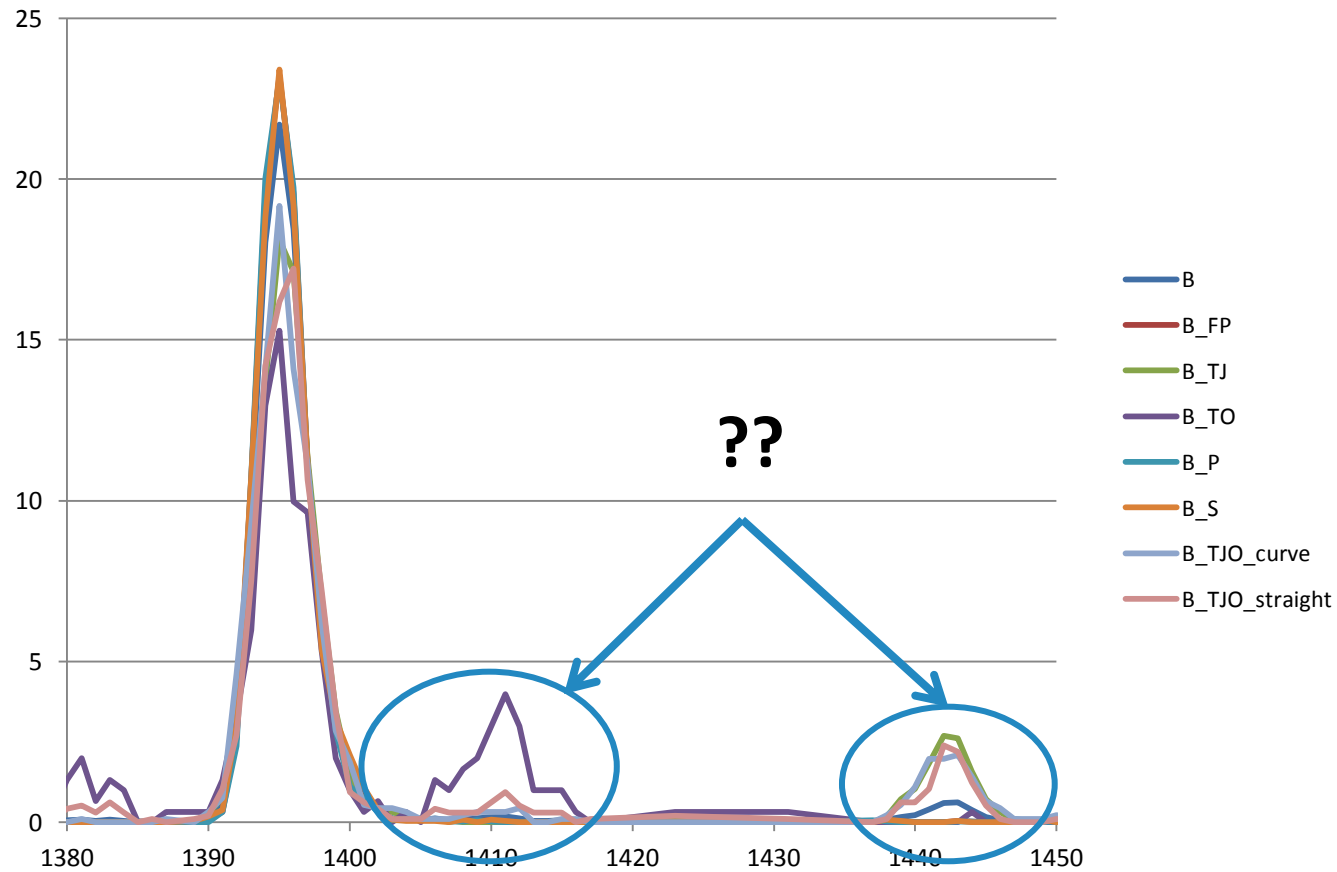
7757
MEASURED
branches



120904
measurement values

NOSE PROTECTION FROG (1/2)

Nose protection frog point



Funny distribution
Why?

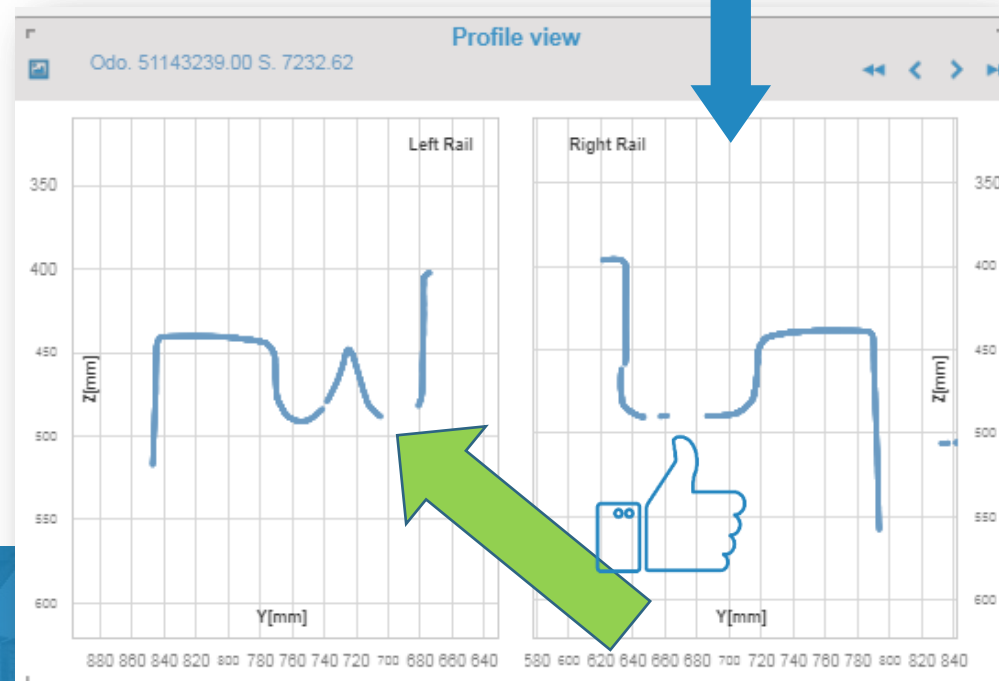
NOSE PROTECTION FROG (2/2)



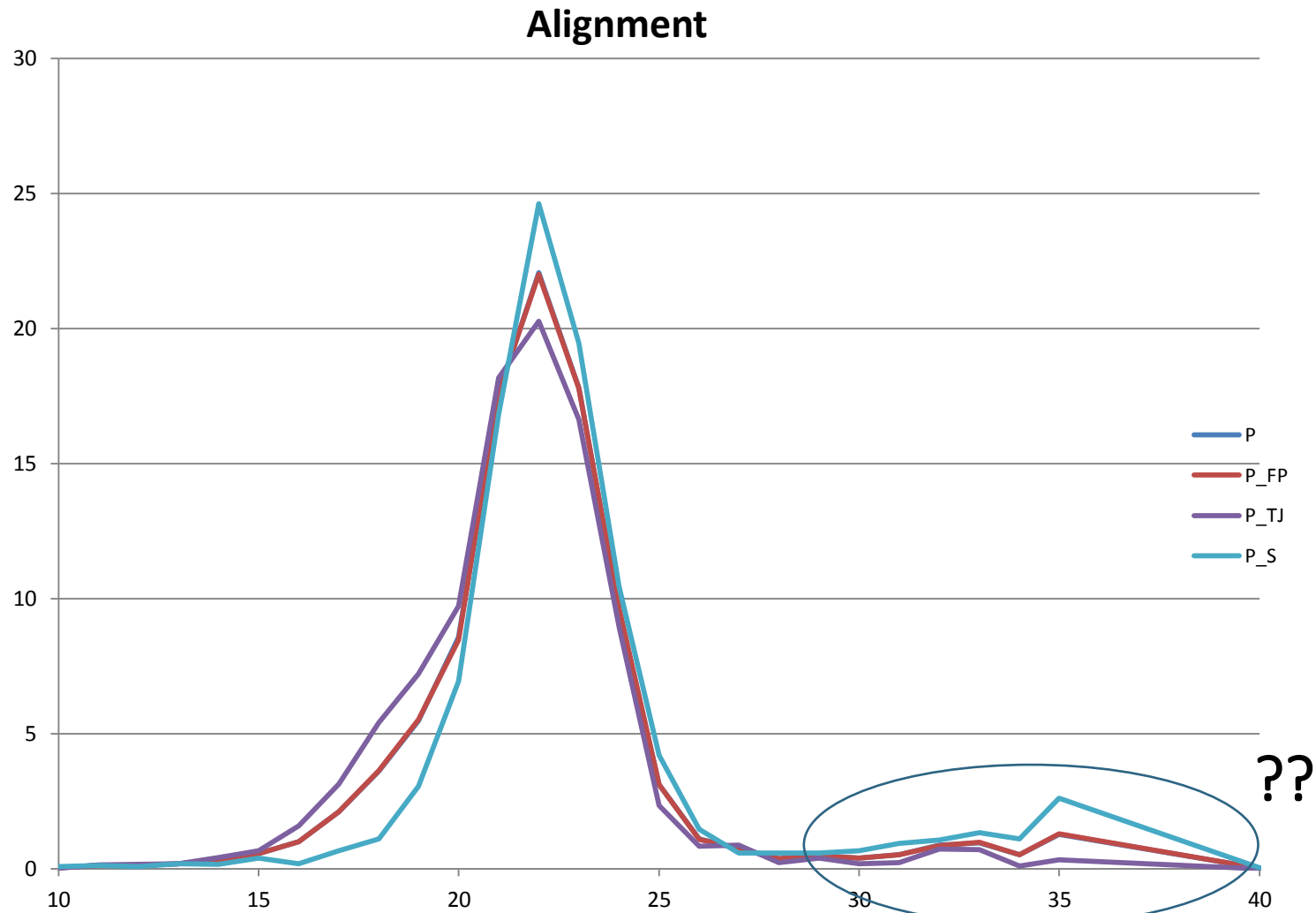
Data quality Infrabel



+ 3 datasteps = 6 cm



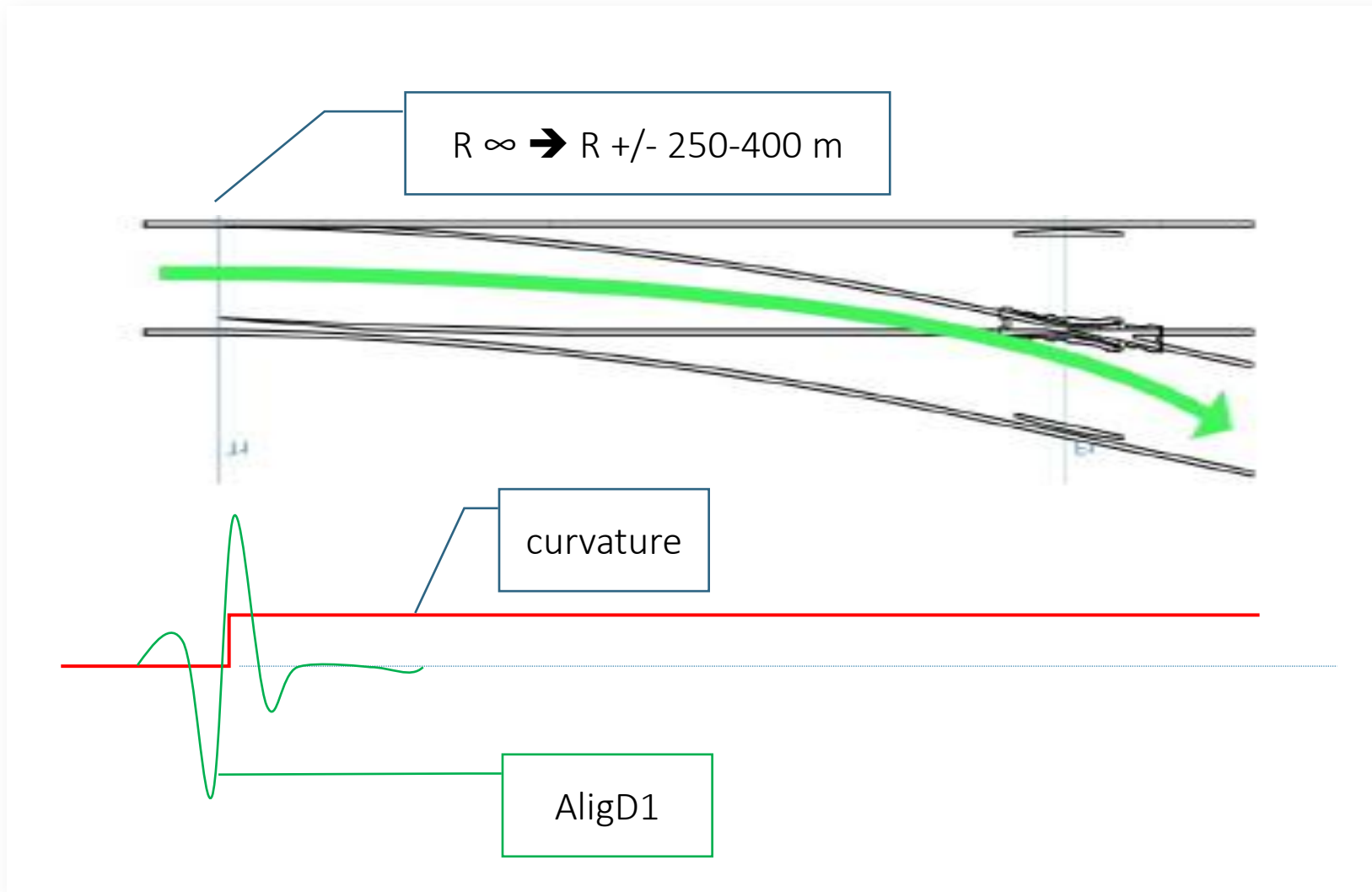
ALIGNMENT D1 (1/2)



Funny distribution
Why?

??

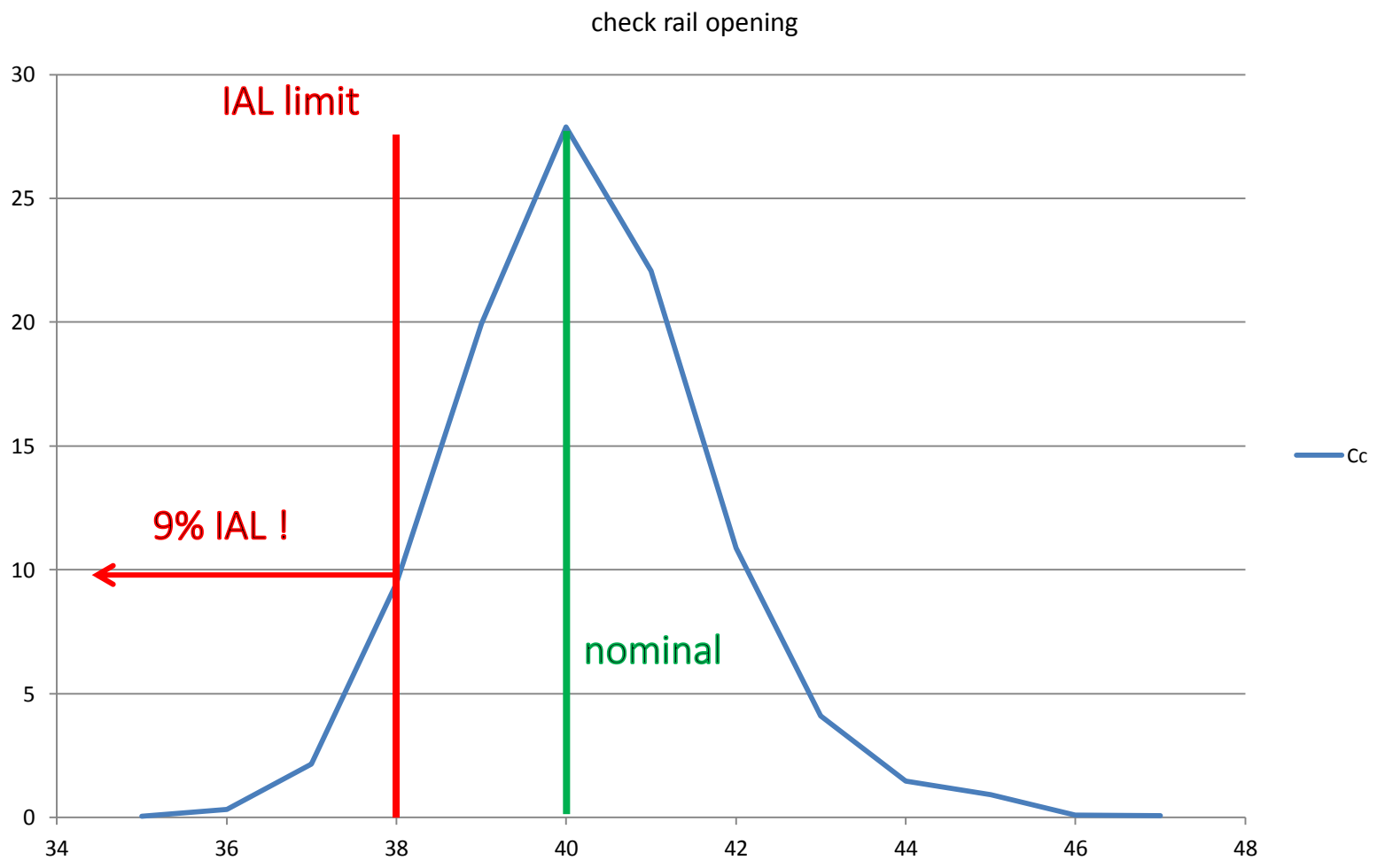
ALIGNMENT D1 (3-25M) (2/2)



Known issue

Deviated track switches
small radii

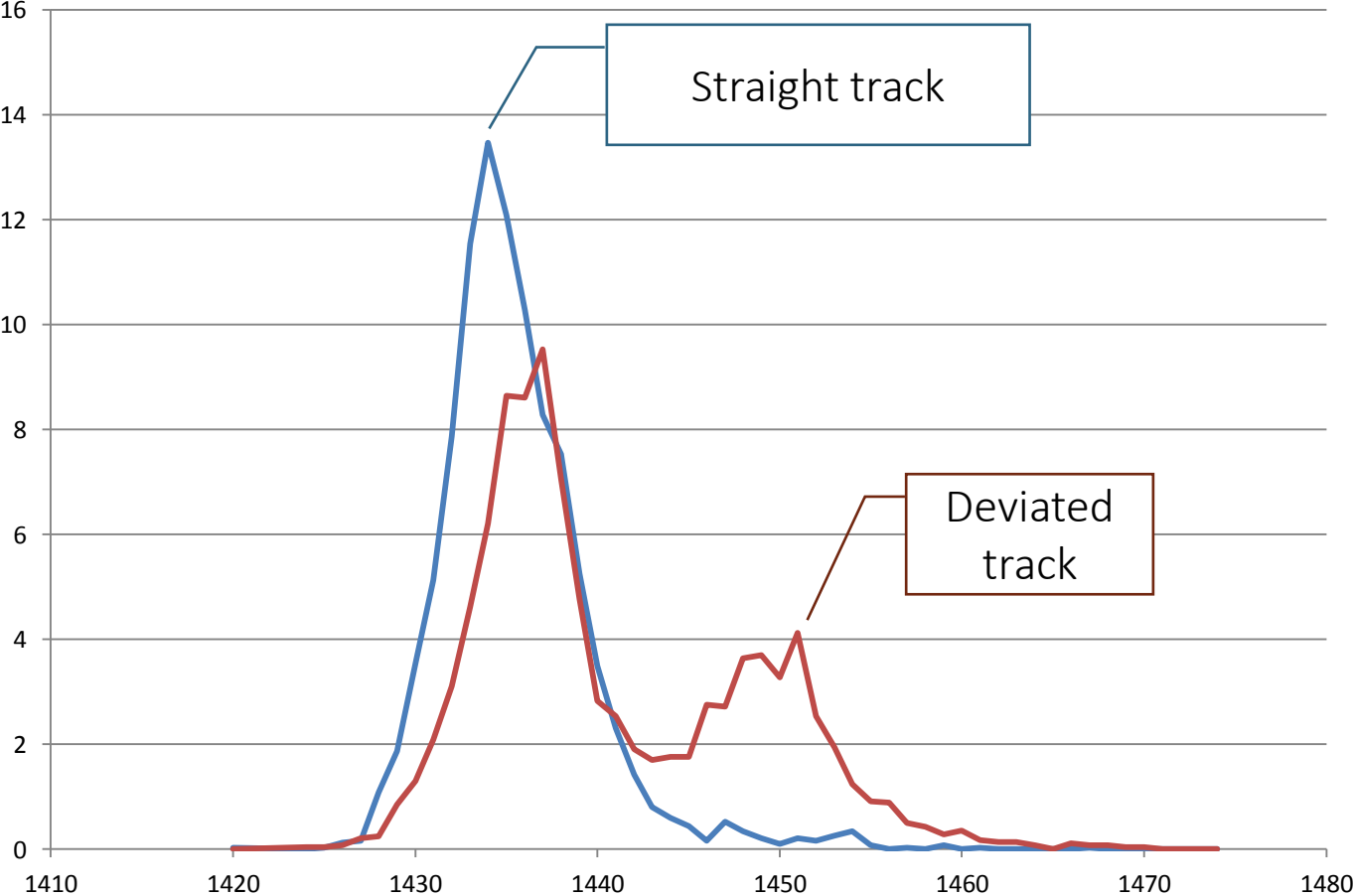
CHECK RAIL OPENING



Must Infrabel worry?
No
Details in Tracksnet

TRACK GAUGE

Track gauge



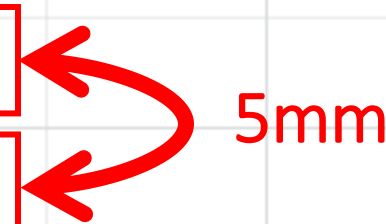
Known issue

Deviated track switches
Structural wide gauge

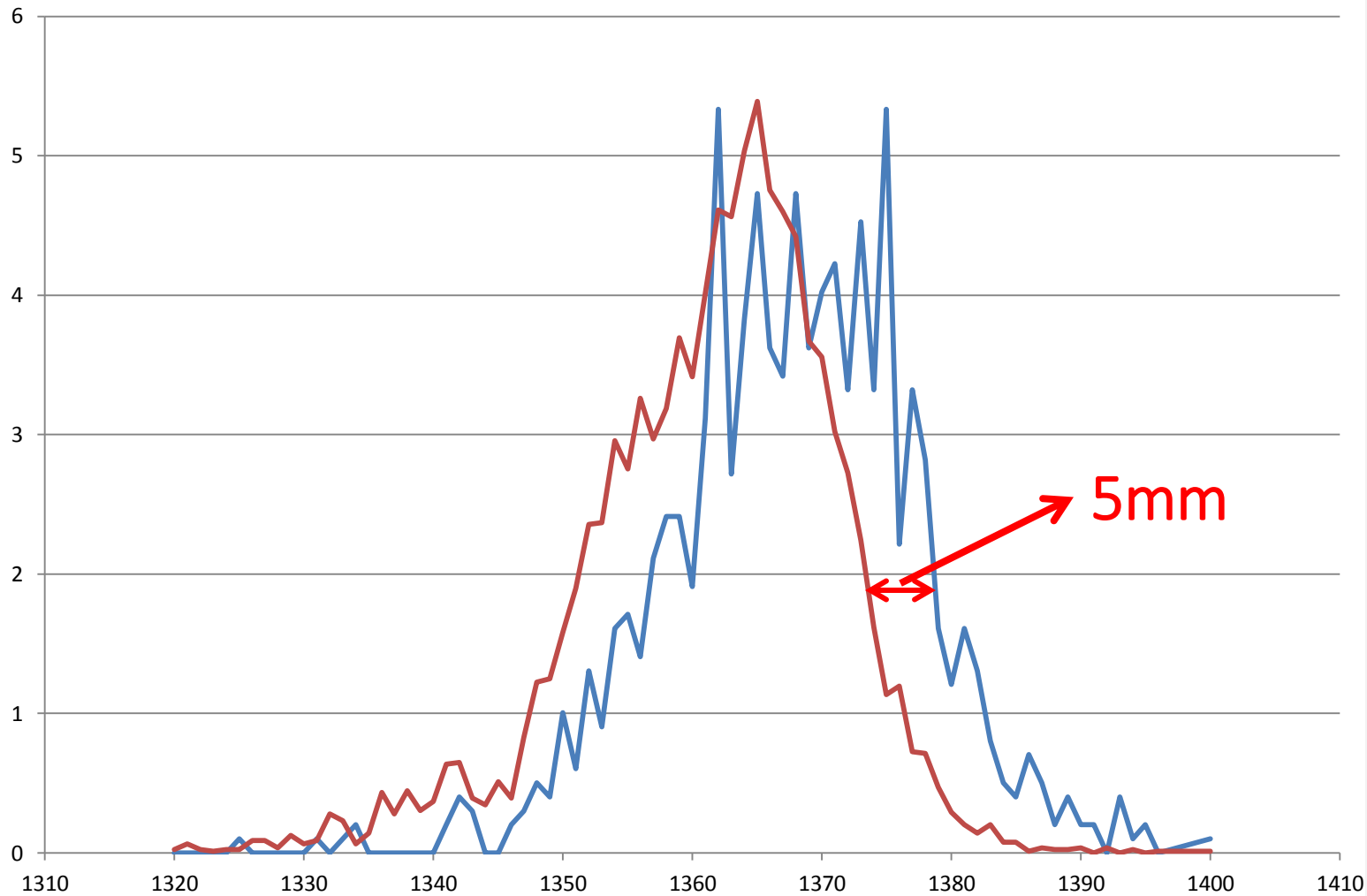
FREE WHEEL PASSAGE OPEN TONGUE

AARD VAN DE OPMETING	Nominale waarde	Toleranties	Limieten	
		NEW MAI	Intervention Limit IL	Immediate Action Limit IAL
<i>(Alle waarden in deze tabel zijn uitgedrukt in mm.)</i>				
<u>BESCHERMINGSMAAT VAN DE OPENDE TONG</u> (BMOT = AB + J)				
→ In de spoortoestellen type F				
→ → → Enkele aandrijving en $V \leq 40$ km/h				
Aangelegd voor 01.06.1978	1375			1385
Aangelegd na 01.06.1978	1370			1380
→ → → Meervoudige aandrijving	1365			1375

Infrabel rules



FREE WHEEL PASSAGE OPEN TONGUE



Statistics confirm rules

F_before1978
F_after1978

THANK YOU!

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INFRABEL
Right On Track