

Optimization and digitalization of asset management

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“RAILWAYS ARE UNDERGOING ITS BIGGEST TRANSFORMATION SINCE ITS CREATION”

Digital transformation implies a culture shift that affects people, processes and technologies.



Railways as a strong alternative transport mode

Railway networks across the world are getting busier and busier; trains travel at higher speeds and carry more passengers or heavier axle loads than ever before.



NEW NEEDS

Rising railway traffic means that infrastructure needs to be in better shape than ever, making asset management optimization crucial.

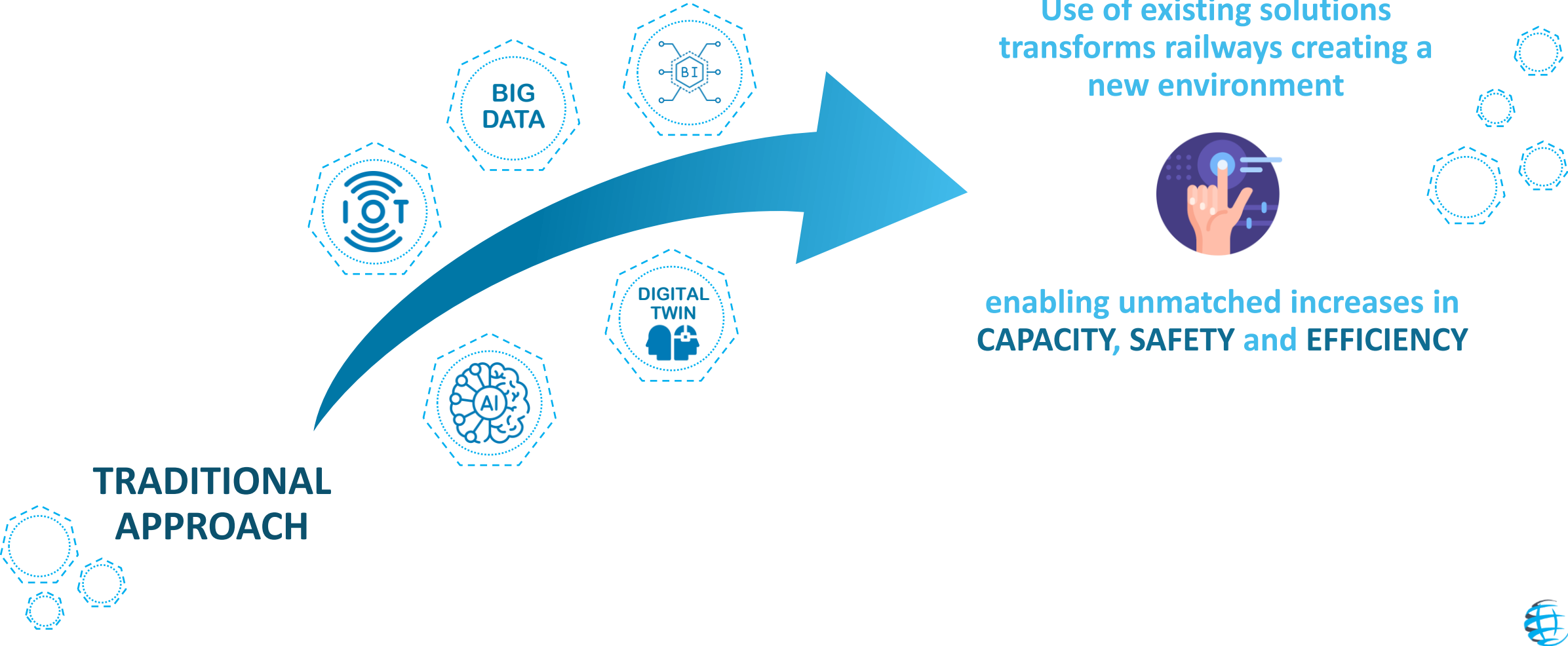


NEW METHODOLOGIES

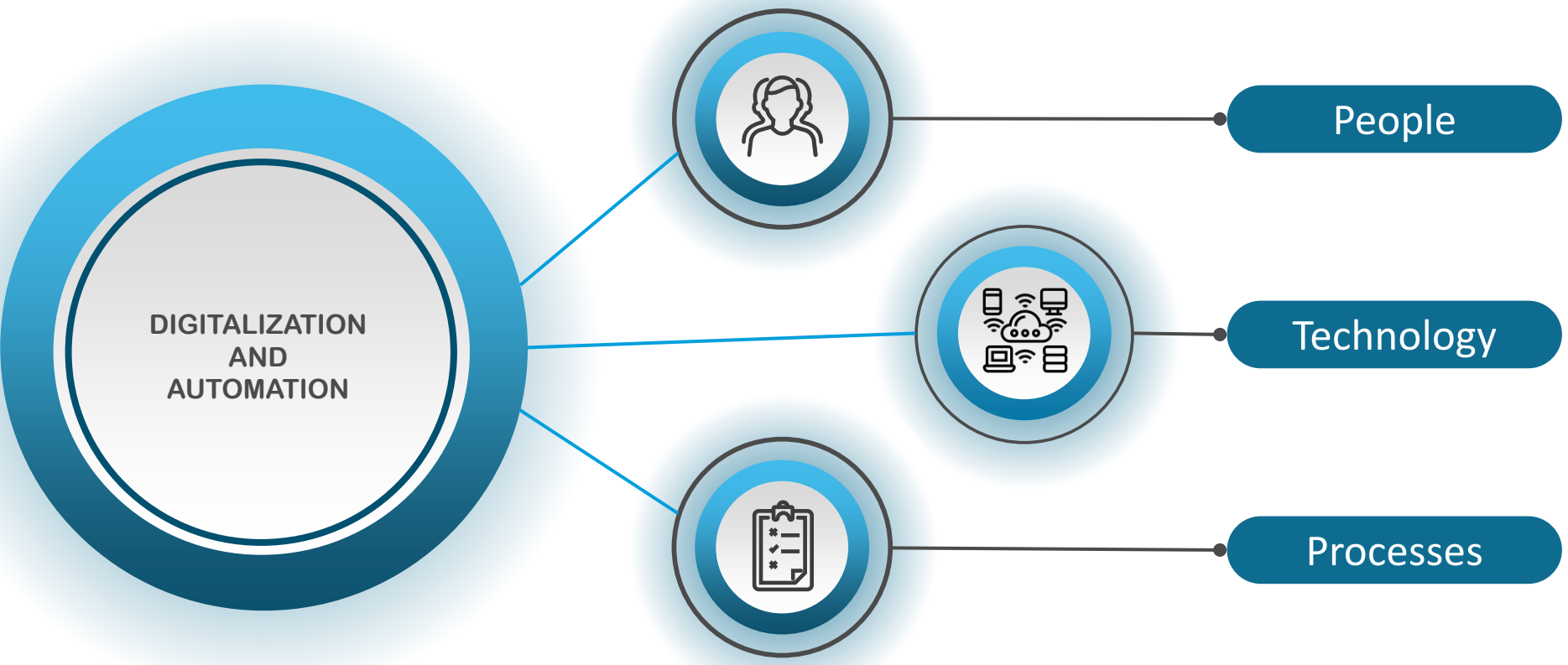
The railway industry calls for new information technologies (ITs) to meet its development.



IT world is developing at a very fast pace



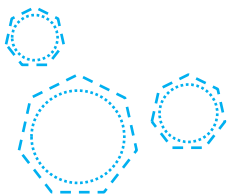
Digitization is a journey that involves different players



Business intelligence (BI)

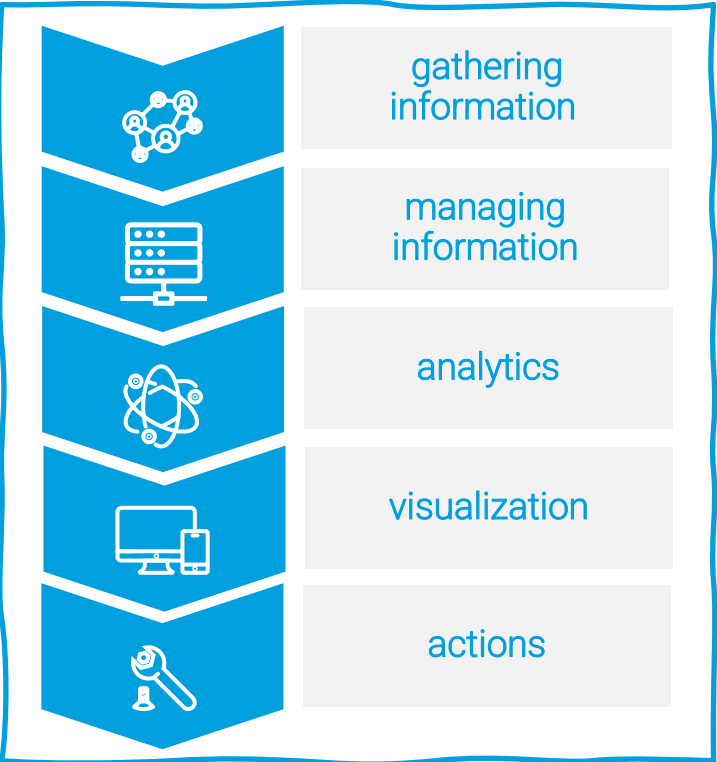
“**Business intelligence** comprises the strategies and technologies used by enterprises for the **data analysis** and management of **business information**.”

Business Intelligence = *Data Analysis* + *Business information*

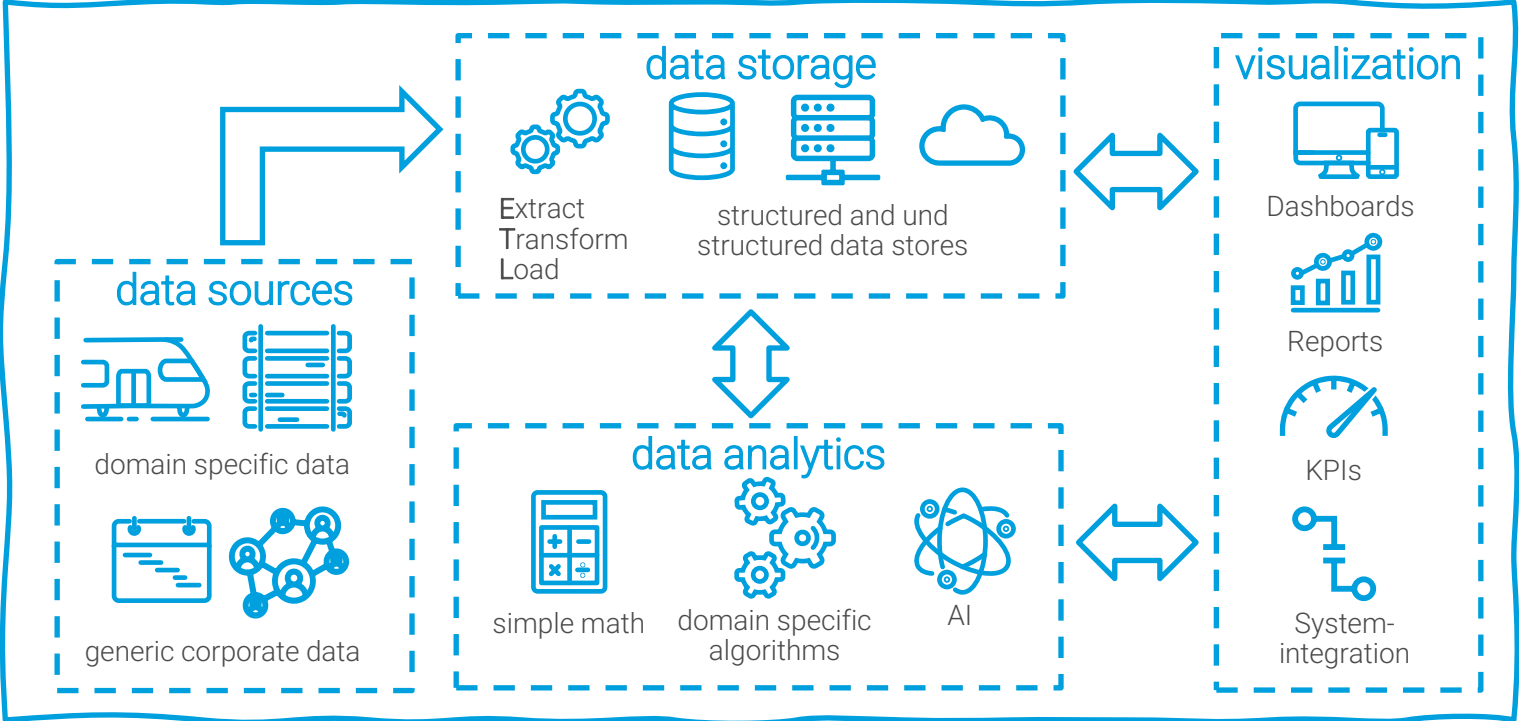


Optimization of asset management with Business Intelligence

The BI approach

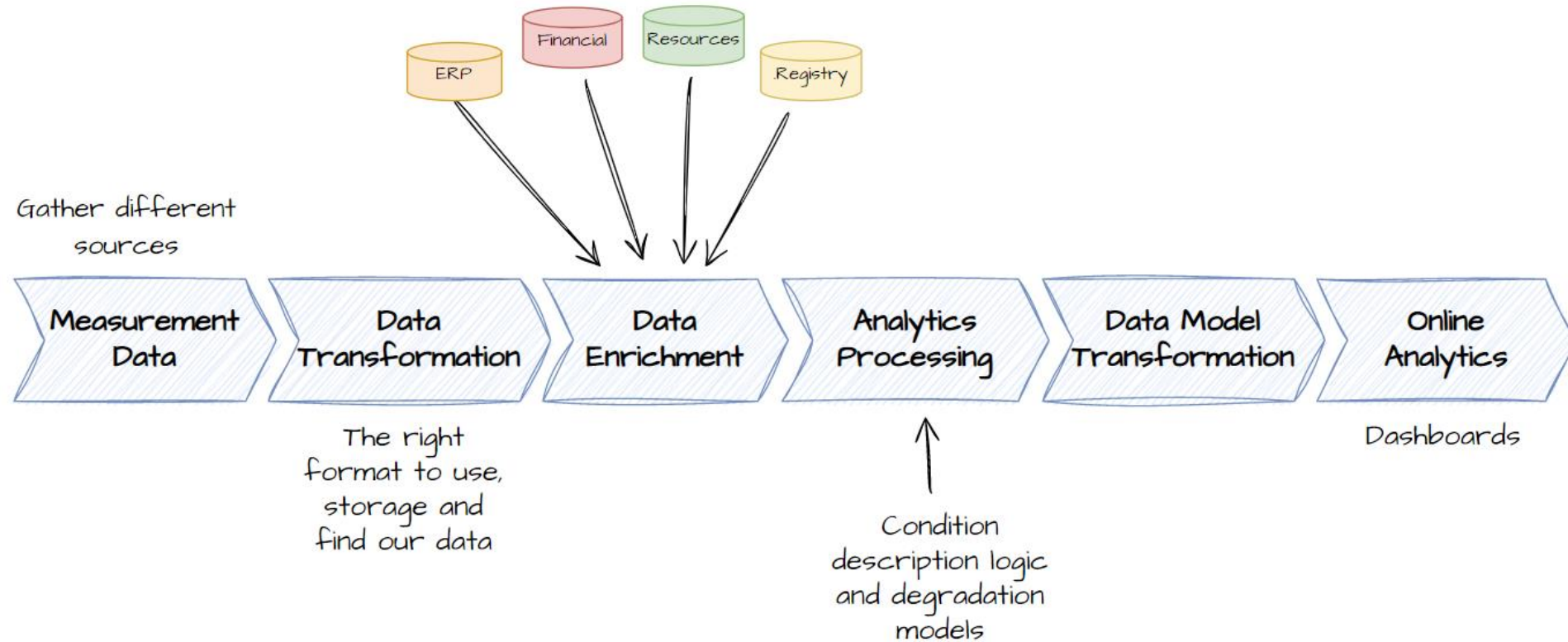


A cross-domain data processing environment for BI



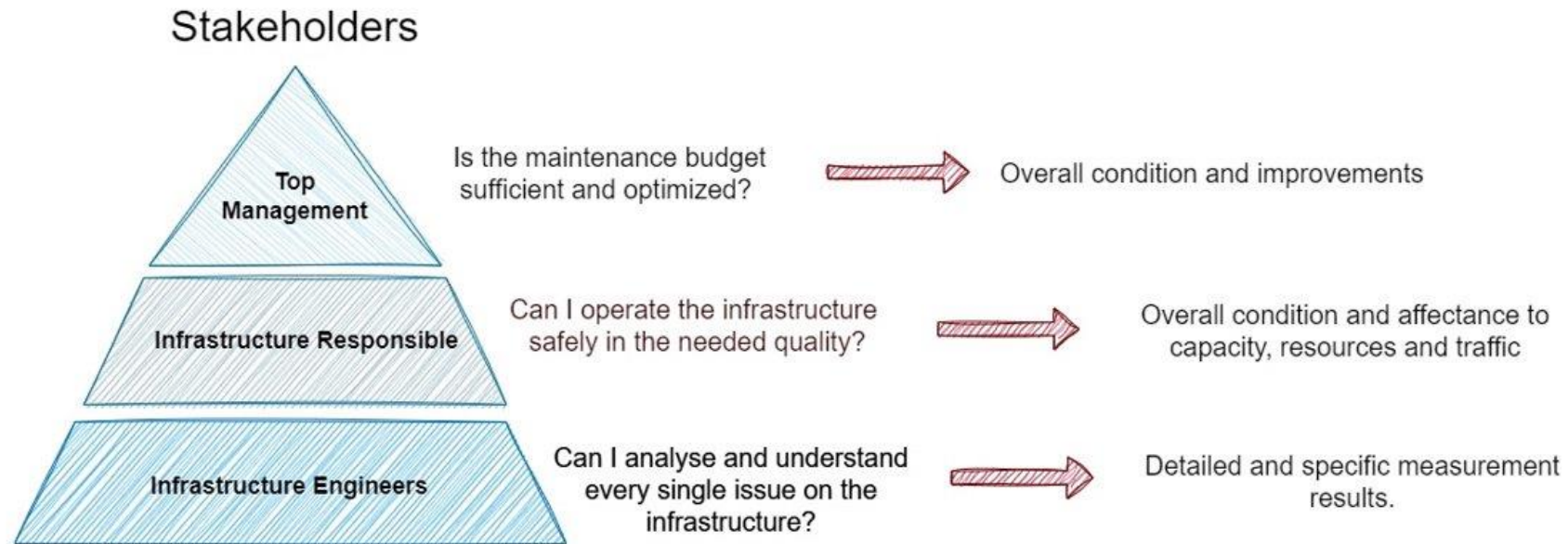
USE CASE: Track geometry and three aggregation levels

Automated processing pipeline for measurement data



Different approaches for different needs

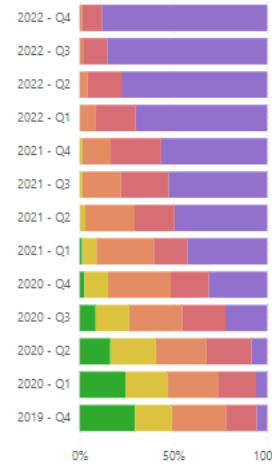
DIFFERENT DASHBOARDS FULFILL THE NEEDS OF DIFFERENT STAKEHOLDERS



Top management level dashboard

TQC - SD Alignment D1

Name ● TQC A ● TQC B ● TQC C



Alignment D1 Limits

Name ● AL ● IL ● IAL



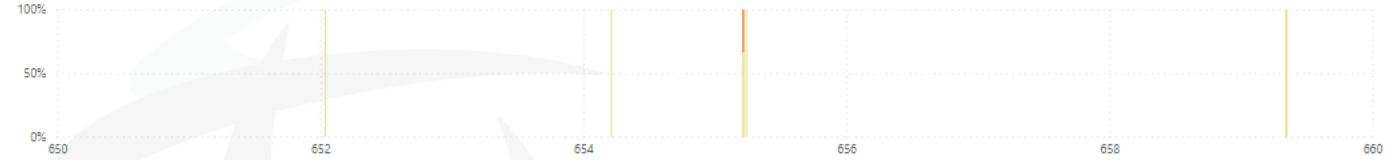
Total Track km

10.00

12/24/2019 12/10/2022

Alignment D1 Limits over time

Name ● AL ● IL ● IAL



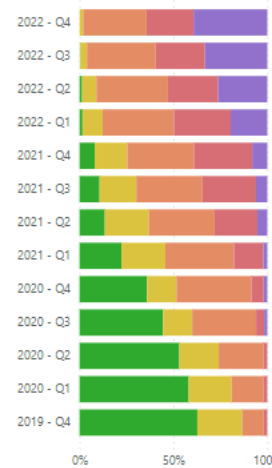
Longitudinal Level D1 Limits over time

Name ● AL ● IL ● IAL



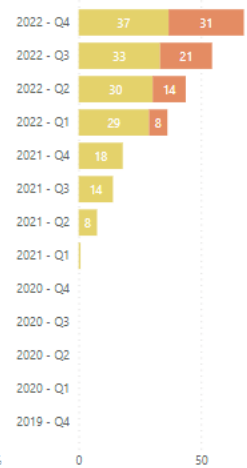
TQC - SD Longitudinal Level D1

Name ● TQC A ● TQC B ● TQC C



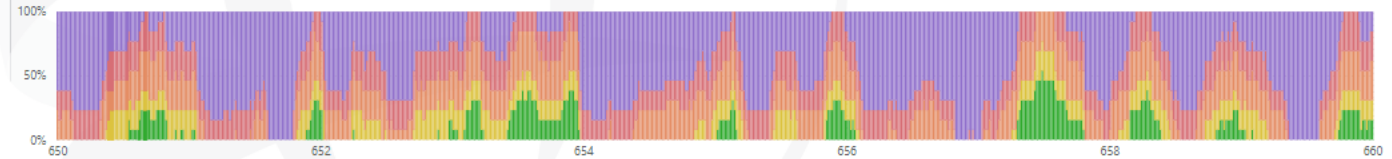
Longitudinal Level D1 Limits

Name ● AL ● IL ● IAL



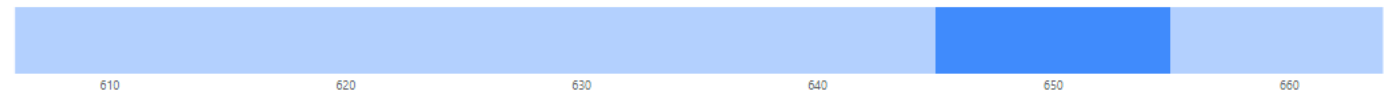
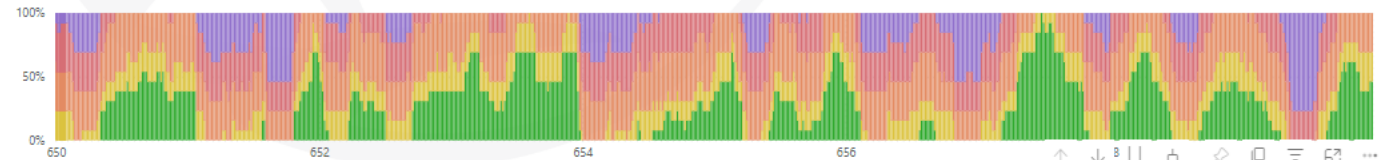
TQC - SD Alignment D1 over time

Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



TQC - SD Longitudinal Level D1 over time

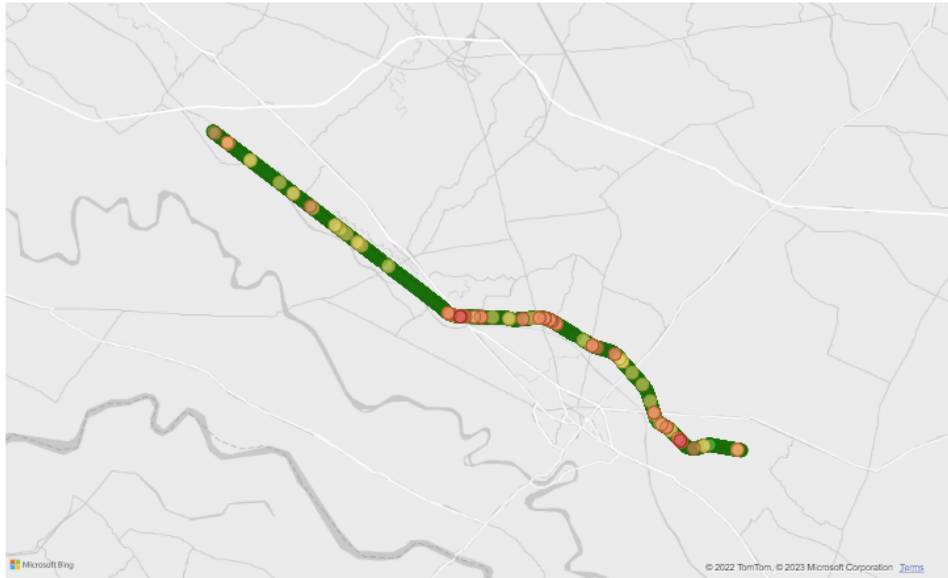
Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



Infrastructure Responsible level dashboard

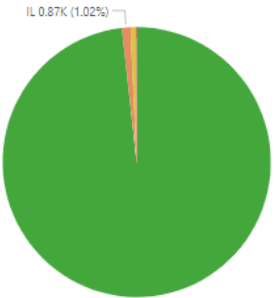
EN13848 Limits

Name ● Good ● AL ● IL ● IAL



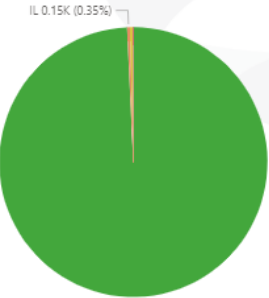
Alignment D1 Limits

Name ● Good ● IL ● AL ● IAL



Alignment D2 Limits

Name ● Good ● IL ● AL ● IAL



PrkM_km

618.00 663.01

Section View

Total Track km

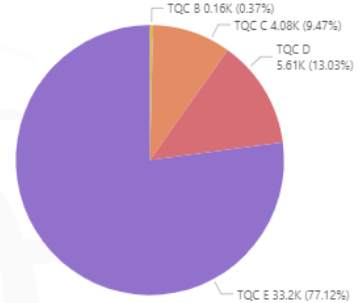
45.01

Quarter

2022 - Q4

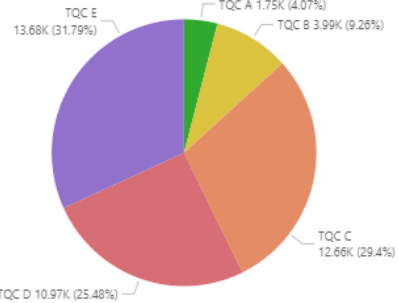
TQC - SD Alignment D1

Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



TQC -SD Longitudinal Level D1

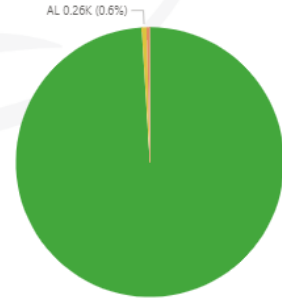
Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



Good AL IL IAL

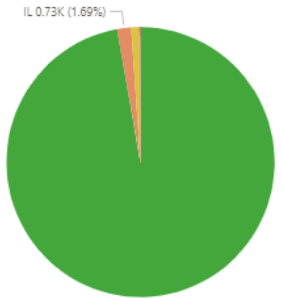
Longitudinal Level D1 Limits

Name ● Good ● AL ● IL ● IAL



Longitudinal Level D2 Limits

Name ● Good ● IL ● AL ● IA



Infrastructure Responsible level dashboard

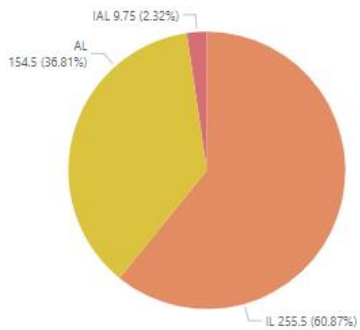
EN13848 Limits

Name ● AL ● IL ● IAL



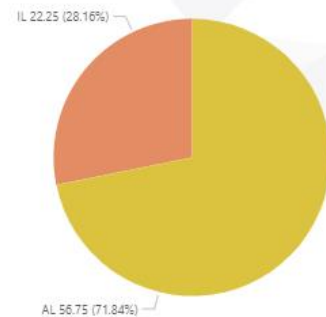
Alignment D1 Limits

Name ● IL ● AL ● IAL



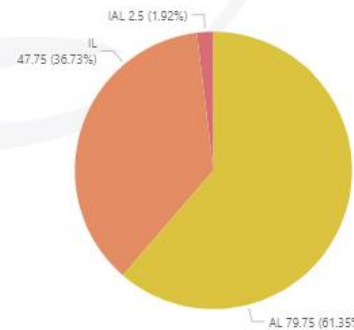
Alignment D2 Limits

Name ● AL ● IL ● IAL



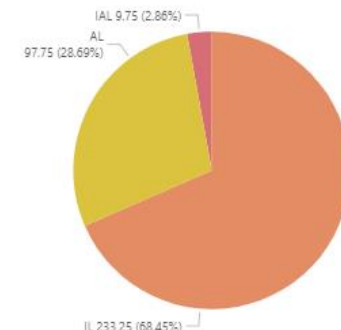
Longitudinal Level D1 Limits

Name ● AL ● IL ● IAL



Longitudinal Level D2 Limits

Name ● IL ● AL ● IAL



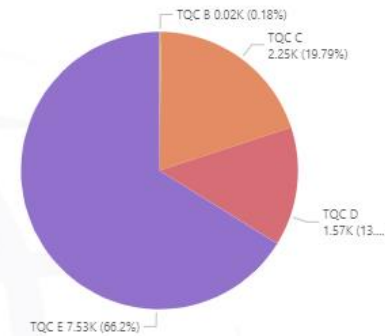
PnKm km

618.00 629.65



TQC - SD Alignment D1

Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



Section View

Total Track km

11.65

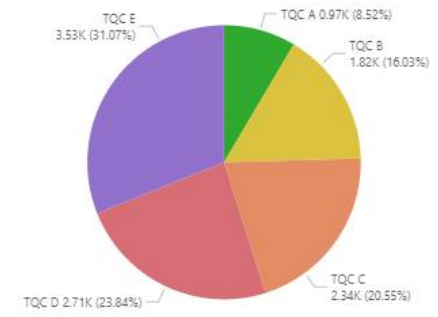
Quarter

2022 - Q4

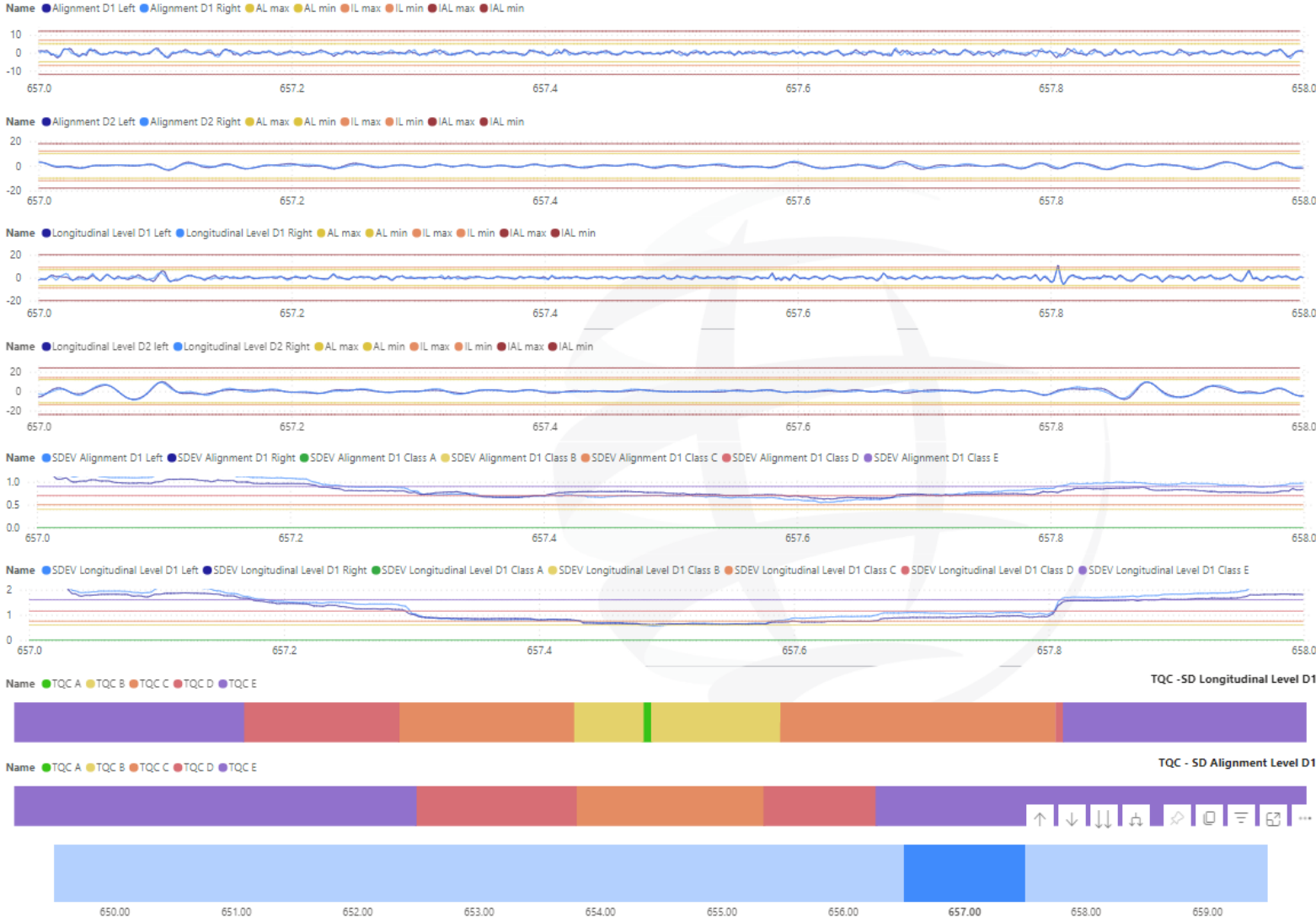


TQC -SD Longitudinal Level D1

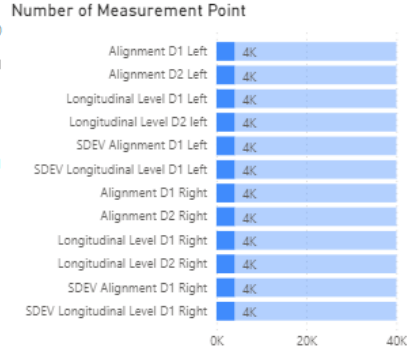
Name ● TQC A ● TQC B ● TQC C ● TQC D ● TQC E



Infrastructure Engineer level dashboard



Shown Track km: 1.00
 Quarter: 2022 - Q4





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