TheCrossProduct

Automated Reverse Engineering

Why choose The Cross Product?

AI AND 3D LIDAR FOR INFRASTRUCTURES

PRECISE TOOLS

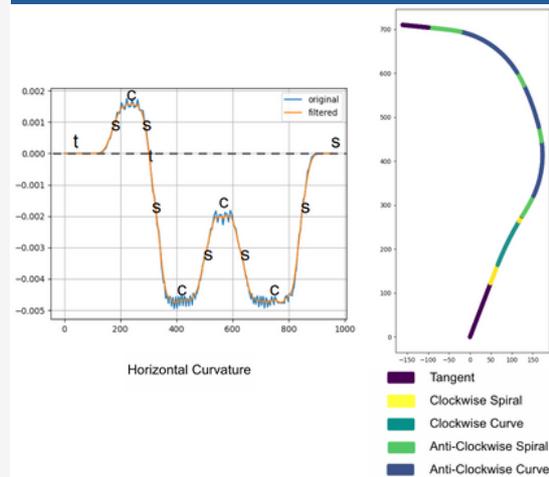High precision, an advantage over manual solutions

SPEED OF EXECUTION

Automation representing costs reduction and time saving

CLOUD PLATFORM

Integration into processing chains. Calculations performed on the cloud

PORPOSITION PREPARED BY

THE CROSS PRODUCT

A SOLUTION ADAPTED TO YOUR BUSINESS

Responding to your needs

- Identify risks and check the conformity of a railway track thanks to a precise analysis of its geometry: horizontal and vertical curvature definitions.

- Precisely analyze the condition of the railway infrastructure thanks to automated calculations of slope, curvature, mid-chord offset and superelevation.

We propose an algorithm combining **artificial intelligence** and **business knowledge** to precisely determine the geometry of a railway axis.

Our software performs automated calculations to retrieve the horizontal and vertical curvature definitions : track geometry in both the **horizontal plane** and the **longitudinal vertical plane**. The geometric elements, namely **tangents, curves and spirals**, as well as superelevation information are exported in LandXML format.

Our solution is **100% automated**, **reliable** and **fast** to meet the needs of predictive and corrective maintenance.

An algorithm adapted to the **railway linear networks**, capable of processing multiple sections in parallel and concatenating the results to obtain a **global view**.

Generating a report makes it easy to view the automatically calculated measurements.

Input Data

- 3D polyline of the track axis (SHP/DXF)
- 3D polyline of each rail (SHP/DXF)

Output Data

- On the longitudinal vertical plane: vertical tangents and vertical curves (LandXML)
- On the horizontal plane: tangents, curves and spirals (LandXML)
- Reverse engineering report (PDF)
- Measurement: slope, curvature, mid-chord offset, superelevation (XLSX)

Compatibility

- Platforms (API)
- Any device with a web browser and an internet connection

Can be integrated into point cloud processing platforms

Large-scale use throughout railway network

Pricing by kilometer or by subscription

Accessible on:

Scaleway   aws   Azure

e-cassini   Alteia   setec

Contact us

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Products	Railway	Highway	Industrial Site
Classification	Semantic & Panoptic	Semantic & Panoptic	Semantic & Panoptic
Vectorization	Rails and Track Axis	Ground markings, safety barriers	Overhead wires and equipment
Professional Application	Clash Detection / Reverse Engineering	Clash Detection Reverse Engineering Compliance	Safety distance verification

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