

## Automated Rail Modelling

AI AND LIDAR 3D FOR  
INFRASTRUCTURES

*Why choose The Cross Product ?*



### PRECISE TOOLS

High precision an advantage over manual solutions



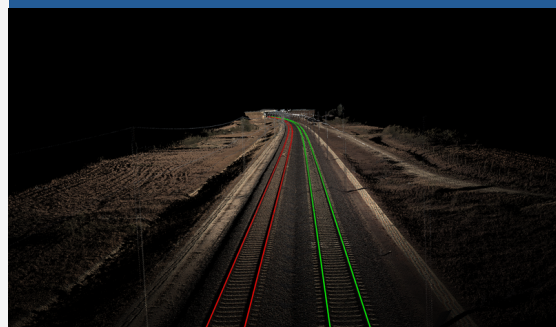
### SPEED OF EXECUTION

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

- Study what exists and provide an accurate and complete vectorization of rails in a 3D point cloud
- Analyze and compare the polylines to study the evolution of rails
- Perform automated calculations: slope, spacing, radius of curvature, track axis...

We propose an algorithm combining **artificial intelligence** and **professional knowledge** to accurately recognize rails and their positions in 3D space.

The vectorised rails are exported as **3D polylines placed on the top of the rail head** for use in a geographic information system (GIS) or to enrich a **BIM model** of the infrastructure.

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

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



### Input data

- 3D point cloud (LAS/LAZ/E57 format)
- Indication of the track to be vectorized

### Output data

- 3D Polyline of rails, top of the rails head (SHP/DXF)
- 3D polyline track axis
- Vectorization report (CSV)

### 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**

**Already available on**



**Contact us**

**contact@thecrossproduct.com**

### Products

#### Railway

#### Highway

#### Industrial site

Classification	Semantic & Panoptic	Semantic & Panoptic	Available soon
Vectorisation	Rails and track axis	Ground markings, safety barriers	Available soon
Professional application	Clash detection	Reverse engineering	Available soon

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# The Cross Product

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