

## Automated Rail Modelling

AI AND LIDAR 3D FOR  
INFRASTRUCTURES

*Why choose The Cross Product ?*



### PRECISE TOOLS

High precision an advantage over manual solutions



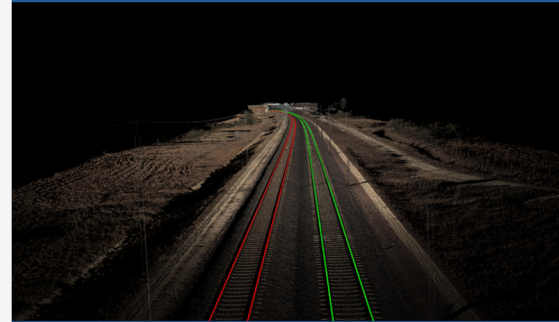
### SPEED OF EXECUTION

Automation representing costs reduction and time saving



### CLOUD PLATFORM

Integration into processing chains. Calculations performed on the cloud



PROPOSITION 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 |

The Cross Product France



35 rue Saint Honoré  
77300 Fontainebleau

Phone :  
+33 7 85 85 35 46

# The Cross Product

www.thecrossproduct.xyz