A revolutionary new service from the surveying experts at Plowman Craven, Vogel R3D is a unique, UAV-based system that enables the comprehensive surveying of rail infrastructure to a sub-5mm accuracy in a fraction of the time of a traditional survey.

Able to cover even the busiest and most inaccessible areas of the rail network from a working height of 25m, Vogel R3D can capture data from a position of safety even during traffic hours, removing the need for possessions and line blocks, and drastically reducing the exposure of workers to risk. The result is a shortening of programme times and significant cost savings.

Developed from years of expertise in laser scanning and photogrammetry, and underpinned by robust survey principles, this ground-breaking system uses a state-of-the-art UAV platform and 100-megapixel camera to capture overlapping aerial images of an entire site. Bespoke workflows and software algorithms are then used to convert the imagery into 3D data – to an accuracy that is superior to any other method of data capture, including even static laser scanning and train or trolley-based kinematic scanning systems.

“The application of the Vogel R3D system is a real game-changer for Network Rail and helps us to satisfy many of our survey requirements in a safe manner without the cost implications or potential programme delays associated with multiple possessions.”

Chris Preston
Senior Engineer, Network Rail
DATA BACKED
Trials have been undertaken to prove the accuracy of Vogel R3D and compare the data to traditional survey techniques. Plowman Craven’s Vogel R3D meets Network Rail’s Band 1 accuracy requirements and is suitable for track alignment and topographic survey at all GRIP stages.

Comparison to Amberg GRP1000 Track Alignment Survey

<table>
<thead>
<tr>
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<th>Left Rail</th>
<th>Right Rail</th>
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<tr>
<td></td>
<td>Lift (Δ height)</td>
<td>Slue (Δ plan)</td>
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<tr>
<td>Standard Deviation</td>
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Comparison to Independent Check Points

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<th>Δ Y</th>
<th>Δ Z</th>
<th>Δ 3D</th>
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</table>

SAFETY, TRUST & EXPERIENCE
With enhanced flying permissions from the Civil Aviation Authority and five-star RISQS rating, Plowman Craven is already an industry-leader in the provision of Rail survey data. The Vogel R3D system has been trialled by Network Rail and survey accuracy results approved. Contact us today to find out how we can help on your next project.

ENHANCED DELIVERABLES
- Track alignments for P-way design
- Topographical surveys
- 3D Point Clouds
- Building Information Models
- Orthophotos
- High-res imagery for asset inspections
- Site visualisations & TruView

State-of-the-art UAV platform with a range of safety features

High-res imagery captured even during traffic hours

Topographical survey data overlaid on point cloud

Interactive TruView software

About Plowman Craven
Plowman Craven provides integrated measurement and consultancy services to the property and infrastructure markets, pioneering the use of technical innovation to deliver proven expertise and trusted results throughout the project lifecycle.

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