



PLOWMAN CRAVEN LAUNCHES VOGEL R3D RAIL SURVEY SYSTEM

Safer, faster & more accurate way to capture rail data

[Harpenden, Herts – 24th July 2017] – Plowman Craven, one of the UK’s leading survey and measurement companies, has launched the revolutionary Vogel R3D system that deploys unmanned aerial vehicles (drones) to enable the comprehensive surveying of rail infrastructure to an incredible sub-5mm accuracy.

Able to cover even the busiest and most inaccessible areas of the rail network from a working height of 25m, Vogel R3D can capture track condition and measurement 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.

Chris Preston, Senior Engineer, Network Rail commented: “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.”

Malcolm Donald, Director, Plowman Craven said: “The Vogel R3D system really does represent a step change in the surveying of the rail environment. Not only does it massively reduce risk, cost and timeframes compared to traditional surveying methods, but the data accuracy is also superior to traditional laser-scanning systems, making Vogel R3D a very attractive proposition with a wide range of applications. It can also be deployed on any infrastructure project that requires remotely-captured, engineering-grade data such as bridges or oil rigs.”

TANGIBLE BENEFITS

- Less Risk - removes the need to physically access the track
- Less Cost – reduces the expense of possessions and line blocks
- Less Time – shortens programmes as data capture is significantly faster
- More Speed – rapid mobilisation means no waiting for next available possession
- More Value – high definition photography supplements current survey deliverables
- More Accuracy – proven to deliver sub-5mm accuracy

ENHANCED DELIVERABLES

- Track alignments for P-way design
- Topographical surveys
- 3D point clouds
- Building Information Models
- Orthophotos
- High-resolution imagery for asset inspection
- Site visualisations & TruView

Developed from Plowman Craven’s years of expertise in laser scanning and photogrammetry, and underpinned by our 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 point cloud data that can be used to create a range of client deliverables ranging from track alignment to interactive site visualisations.

Boasting 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 Vogel R3D has been successfully trialled by Network Rail, with the survey accuracy results approved.

Extensive testing has confirmed that Vogel R3D meets Network Rail's Band 1 survey accuracy requirements of +/-5mm and is suitable for track alignment and topographical survey at all GRIP stages.

Comparison to Amberg GRP1000 Track Alignment Survey				
	Left Rail		Right Rail	
	Lift (Δ height)	Slue (Δ plan)	Lift (Δ height)	Slue (Δ plan)
Mean	0.001	-0.002	-0.0001	-0.0013
Standard Deviation	0.0028	0.0013	0.0022	0.0021
RMSE	0.0029	0.0024	0.0021	0.0025

Comparison to Independent Check Points				
	Difference			
	Δ X	Δ Y	Δ Z	Δ 3D
Mean	0.0007	-0.0001	0.0002	0.003
Standard Deviation	0.0014	0.0014	0.003	0.0022
RMSE	0.0016	0.0014	0.003	0.0037

With enhanced flying permissions from the Civil Aviation Authority and a five-star RISQS rating, Plowman Craven is already an industry-leader in the provision of Rail survey data. For more information on the Vogel R3D please visit our website www.plowmancraven.co.uk

To see the Vogel R3D in action [click here to watch the video...](#)

ENDS

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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.

We specialise in providing 3D laser scanning, modelling and measurement data services to both public and private sectors and, as the largest geomatics company in the UK, our access to skilled and specialist resource allows us to respond effectively, no matter the size of the project or how challenging.

Through our specialist divisions PC Monitoring and PC Enviro, we also provide a fully-integrated range of structural, geotechnical and environmental monitoring and consultancy services to the construction industry.