Dutch 3D Aerial Scanning Project to Reduce Rail Travel Delays

ProRail, the company in charge of managing and maintaining the Netherlands' railways, is using 3D aerial imagery to reduce travel disruption. The company has scanned more than 7,000km of railway tracks over recent months, and the imaging project is due to be completed this summer. The resulting Lidar images will be used to produce a detailed 3D map which will help to minimise delays by enabling ProRail employees to see areas of track that need replacing or where trees need to be cut down.

According to ProRail, tree branches falling on the overhead lines or leaves on the track already cause disruption to the rail service on a weekly basis, and even more frequently in the case of stormy weather. It can take up to six hours to clear a tree from the tracks, so the company is keen to take preventative action wherever possible.

Lidar technology is used to scan railway tracks.

Laser scanners

The 3D images are being captured from the air using a helicopter – fitted with three cameras and two laser scanners – that flies at an altitude of 190m above the tracks. The aerial images are so detailed that signs and the numbers on signal boxes and points are clearly legible. The resulting 3D map will enable maintenance workers to locate and assess issues such as points problems and to initiate a fast response. The map will also be used to boost ProRail's vegetation management and tree-felling programme. The company hopes that this project will reduce delays by 5 to 10% over the next three years.

Image courtesy: ProRail.

Point cloud of a 3D Lidar scan near Ede-Wageningen station.