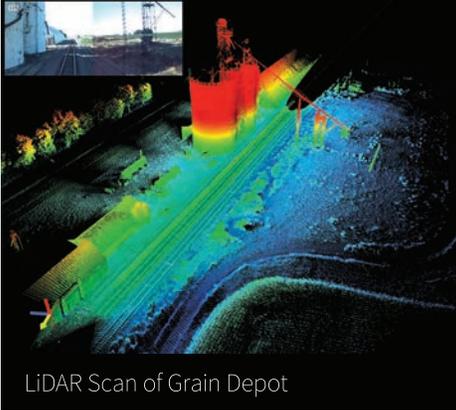


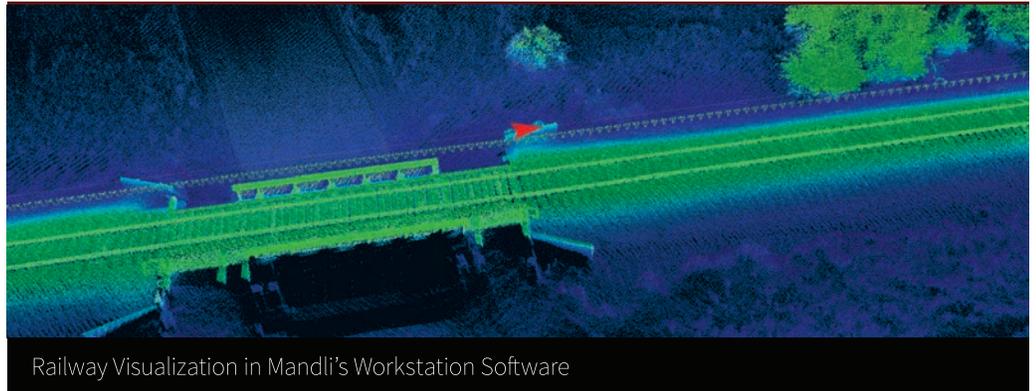
› Hi-Rail LiDAR Data Collection

Mandli Communications, a leading integrator in the transportation industry, recently worked with DBi Services on a LiDAR and hi-rail vehicle pilot project. DBi is an international service company in the field of transportation infrastructure maintenance, operations, and management. DBi's sustainable and diverse service solutions include transportation asset management, vegetation management, roadway or pavement management, cleaning management, stormwater maintenance, bridge repair, bridge cleaning, GIS/GPS mapping, and participation in public private partnerships. DBi provides these services to government agencies, railroads, utilities, and industries worldwide.

PROJECT INFO



LiDAR Scan of Grain Depot



Railway Visualization in Mandli's Workstation Software

LOCATION

› Minnesota, USA

END USER/CUSTOMER

› DBi International

AMOUNT OF DATA

› 20 miles

APPLICATION

› Vegetation and asset management

PRODUCTS

› LiDAR, GNSS, Photolog, Workstation Software

To build on their robust list of services, DBi wanted to determine whether mobile LiDAR could be implemented and deployed on one of their existing hi-rail fleet vehicles to collect valuable data for rail partners during routine maintenance. Railways have a large set of assets that need to be tracked and accounted for, including ballast management, right-of-way encroachment, vegetation-free zone maintenance, and trackside feature inventory such as signage. Due to the fact that scheduling rail time for collection is both difficult for the vendor and costly for the customer, DBi wanted to investigate adding value to their projects by collecting more revenue-generating datasets with a multi-functional vehicle. Since Mandli is one of the leading mobile data collection companies in the country, it was a natural decision for DBi to seek out Mandli for their first LiDAR project, integrating cutting-edge technology with hi-rail.

Mandli was ready to collect on Wednesday after meeting with DBi on the preceding Friday. Within the four day turnaround time, Mandli's team installed, calibrated, and tested on the vehicle in-field, all without disrupting the standard DBi workflow. The new equipment included two HDL-32E LiDAR sensors, which are each capable of collecting over 700,000 points of data per second. The setup also utilized an Applanix POS LV 220 for the collection of positional data, as well as two high-resolution cameras to capture the right-of-way view on the rail. At the conclusion of the project, Mandli Communications processed the data within days, and provided DBi with video using the LiDAR point clouds. DBi was impressed with both the results of the collection, as well as the fast deployment and installation times demonstrated by Mandli.

After viewing the finished product, DBi was able to identify a myriad of uses for LiDAR data beyond the scope of the pilot project. Possible vegetation applications included quantifying the amount in a given area, validating the spray fields from vegetation control vehicles, and helping in litigation issues regarding spray drift. The LiDAR data can be used for ballast management by quantifying the exact amount of material required to meet the profile established by the railroad, and mapping the specific areas where ballast needs to be placed for spreading. In addition, the dataset can be used for PTC mapping and advanced trackside inventory, collecting data for assets such as rails, ties, bridges, walls, fences, signals, signs, drainage, and any objects encroaching on the right-of-way. Other applications include three-dimensional railway modeling, rail corridor design and monitoring, and monitoring hazard analysis such as potential rockfall areas and trackside fuel load identification.

By offering the ability to perform maintenance and collect valuable data simultaneously, DBi is providing their rail customers with a valuable solution to maximizing rail time. Mandli Communications provides a tremendous opportunity for DBi to fulfill this need, and both organizations are looking forward to highlighting this new technology and the added value it will bring to the field.



Hi-Rail Vehicle Outfitted with LiDAR