

# CYIENT



## IMAGE ASSISTED INSPECTION FOR ENHANCED EFFICIENCY

Optimize infrastructure and rolling stock inspection with our image-assisted inspection and analytics capabilities

Accurate and readily available inspection data is critical for effective asset management in rail. The need for safer and more efficient inspection of railway assets is steering companies to consider a range of emerging digital technologies.

## Integrated Solution for Image Capture and Processing

Cyient's Image Assisted Inspection (IAI) solution combines image processing and advanced analytics with geospatial information to optimize asset inspection time and cost. This solution enables clients to achieve their core operational objectives across all segments in the rail industry—rolling stock, signaling and infrastructure. It can be integrated with any pre-existing image-assisted inspection technique (irrespective of its data collection method) to enhance efficiency and generate dashboards and insights.



### The Cyient Edge

The triad of our strong capabilities—image data processing, data analytics and rail domain expertise make Cyient's IAI a unique and advanced solution.



**Data Processing Capabilities:** Cyient has extensive experience in processing of data gathered through multitude of techniques including aerial photography, thermal imaging, LiDAR, Hyperspectral Imaging, etc. This clubbed with Cyient's strong geospatial expertise enables it to cater to a diverse set of requirements and provide solutions that leverage best-in-class technology and industry standards.



**Data Analytics Experience:** Our in-house team of experienced data analysts leverage the power of machine learning to build analytics solutions that help you garner insights and make better business decisions. Our in-house platform can be leveraged for creating anomaly detection models based on captured and processed images, and providing intelligence on the faults.



**Rail Domain Expertise:** Our rich domain knowledge, owing to 16+ years and 20 Mn+ hours of experience across rolling stock and signaling assets enables us to understand key operational challenges involved in asset inspection and develop a solution customized to meet your requirement.

## Solution Use Cases Across Your Value Chain

Cyient's modular and customizable tools can be used, for example, to perform encroachment analysis and anomaly detection.

### Encroachment management

Cyient's encroachment management tool processes point cloud data of the track and its surroundings to enable asset identification, tagging, and encroachment detection. Through the tool, the inspection personnel can generate a work order for the field personally, providing the exact location of encroachment and, in turn, reducing effort and risk.

### Anomaly detection

Inspection through images may not completely substitute human inspection, but can provide a safer and efficient alternate for preliminary inspection. Cyient's anomaly detection tool processes RGB or thermal imagery data and uses advanced machine learning algorithms to identify anomalies. Post identification, the tool provides the exact location of the anomaly, aiding on-field action.

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