

AIVR[®] Machine Learning



With a high volume of rich, consistent, and accessible video data captured by the full scope of our AIVR systems, our integrated Machine Learning models **automatically detect assets and their condition.**

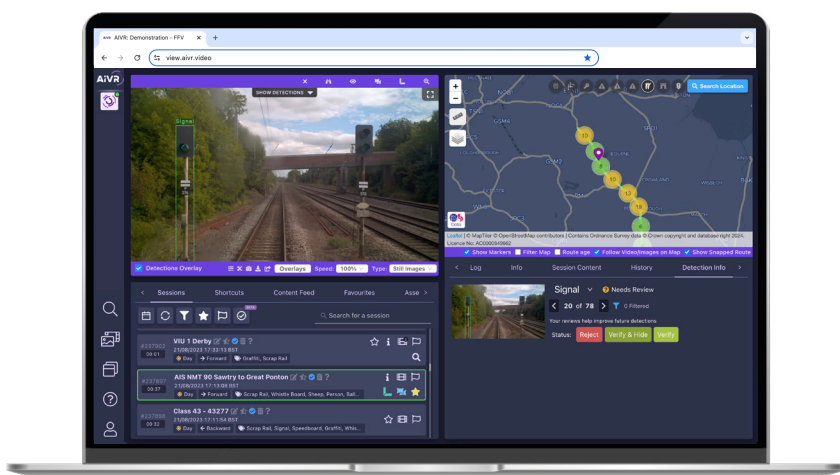
View automatically detected assets on the AIVR Platform

Accessing data in the AIVR Platform is enhanced through **automatic asset detection** features, developed by our in-house Machine Learning team.

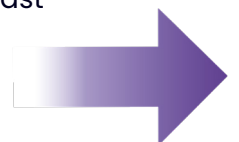
Users can easily navigate to detected assets or receive **alerts based on their condition** along with their associated locational positioning on the AIVR Platform.

We work closely with rail industry experts and technology partners to ensure our datasets provide **vital insights for predictive rail maintenance** and easier defect identification.

AIVR's Machine Learning models can be employed across the full breadth of data on the system to detect:



- Track Components
- Thermal Hotspots
- Trackside Tensioners
- Graffiti
- Lineside Assets e.g. Signals, Scrap Rail
- Troughing
- Wet Beds and Low Ballast
- Limited Clearances
- Corona Discharge

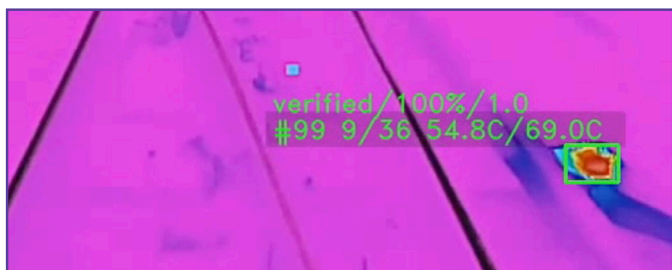


Interested in learning more?

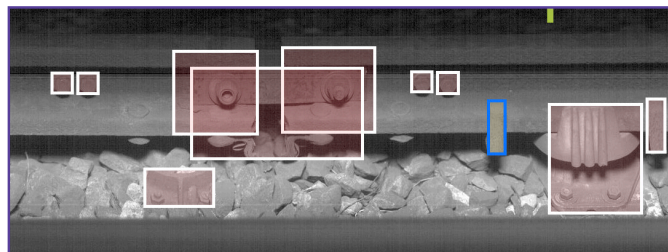
Get in touch to learn more about AIVR Machine Learning, email us on: enquiries@onebigcircle.co.uk



Thermal Hotspots - AIVR's Machine Learning models automatically detect electrical faults on the conductor rail, alongside it's categorised risk level.



Track Componentry - AIVR's Machine Learning models automatically detect key track components, alongside their condition, such as fishplates, joints, welds, electrical cables, and other points of interest.



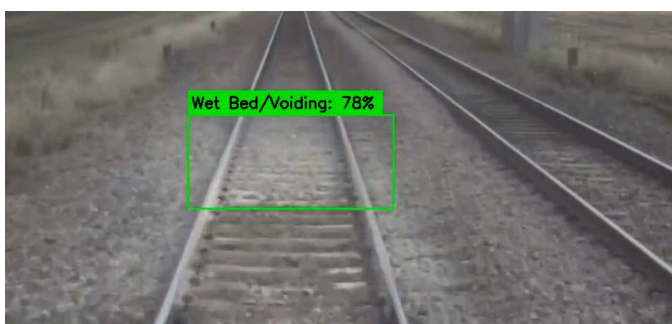
Scrap Rail - Scrap rail, as well as other lineside items such as ballast bags, are automatically detected, located and alerted to users to create a safer working environment.



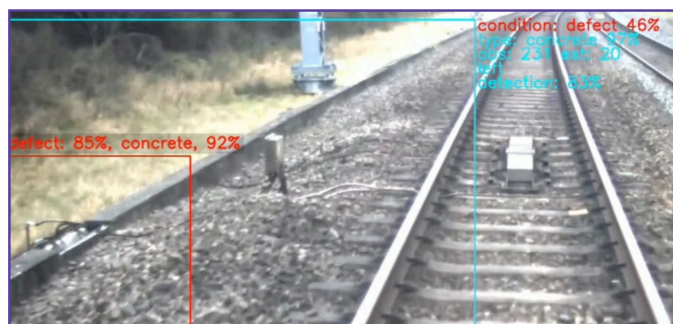
Signals - Signals and their ID plates are detected and mapped, supporting dynamic rail signal management and navigation.



Wet Beds and Low Ballast - AIVR's Machine Learning models automatically assess whether ballast levels are low, and also detect Wet Beds or Voiding on the track.



Troughing - AIVR's Machine Learning models automatically detect troughing, alongside it's condition and type of troughing for remote infrastructure monitoring.



Balance Weights - AIVR's Machine Learning models help tackle weather-induced railway failures by automatically identifying and measuring balance weights along the trackside.



Corona Discharge - Using a combination of UV camera instrumentation, locally measured temperature and humidity, statistical analysis and Machine Learning, levels of Corona discharge on assets are automatically measured and classified.

