

CASE STUDY: TRANSPORT

TURKISH RAILWAY AUTHORITY, TURKEY



Running between the provinces of Karabuk and Zonguldak, this busy railway line passes through hillsides prone to rock falls, as well as populated areas where trespassing and the sabotage of infrastructure is a common occurrence. Turkey's state owned railway operator TCDD was looking for a real-time monitoring solution to rapidly detect events and intervene on this 80km stretch of track before accidents and damage can occur.

Background

The customer required an intrusion detection solution to provide timely alerts relating to rock falls and human activity in and around railway infrastructure, as well as the sabotage or theft of state owned property and equipment.

Requirements

- ✓ Detect, classify and locate third party interference or trespassing on railway line
- ✓ Real-time alarm/event notification
- ✓ Accuracy of location events to less than 4m
- ✓ Software development capabilities to adapt PIDS system to railway monitoring
- ✓ Low environmental nuisance alarms
- ✓ Intrinsically safe - no power in the field
- ✓ Utilise existing fibre optic cable infrastructure buried beside the track

Our Solution

To meet the project requirements, an FFT Aura Ai-2 controller was positioned in the geographical centre of the 80km stretch of rail line, with each channel able monitoring 40km in each direction. Based on data collected on site, FFT's Research & Development Team developed classification algorithms and features to transform its proprietary intrusion detection software into a transport monitoring solution capable of tracking moving trains, as well as threats that may cause a derailment.



Customer Response

After customising software to meet the specific needs of the application, FFT Aura Ai-2 has successfully detected a number of rock falls and provided the early warning required to prevent damage or derailment. The customer is considering extending the perimeter intrusion detection solution to other parts of the rail network.



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