

## North and East Route Forward- Facing CCTV

**Customer:** Network Rail

### CLIENT BRIEF

Challenges with collection and distribution of Forward- Facing CCTV (FFC) data meant that Network Rail (NR), TransPennine Express (TPE) and British Transport Police (BTP) were only able to make limited use of that data in decision making.

The brief to Sarax was to produce a clear assessment of the status of FFC, identifying what worked well and what did not work. The assessment was to make clear what changes were needed to use FFC data effectively and efficiently.

### WHAT WE DID

Sarax worked with NR, First Group and TPE to assess the state of Forward- Facing CCTV data collection, distribution, and the decision making it informs, with a view to identifying related process, organisation, technical and data improvements.

We explored reliability, quality, and design of Class 185 FFC; the difficulties in both live streaming from a moving train and downloading from a stationary train in a depot; and how CCTV could be integrated with other existing systems. We also addressed wider context: other rolling stock classes, saloon images, standards, and use of CCTV within a wider intelligence- based system.

### HOW WE DID IT

The main element of the works involved stakeholder consultation and workshops to understand the current situation and how FFC could best serve stakeholders in the future.

We then applied practical experience and knowledge of how CCTV can be used when retrieved efficiently and built Use Cases which we workshoped with NR to assess validity, practicability, and value.

### THE WORKS

We identified 22 practical FFC use cases relating to the themes of:

- Trespass

- Fatalities
- Line State
- Signals Passed at Danger
- Contractor misuse
- Support to ad hoc investigations.

We found that the use cases for FFC could bring substantial benefits and consequent reductions in delay minutes but that significant improvements were required to the way onboard CCTV is handled before such benefits were realised. The majority of the building blocks required to achieve a functioning system existed, but a substantial amount of integration was required to make it functional, holistic and scalable.

We identified that the use of GPS metadata is a key element in maximising exploitation.

### TOP 5 BENEFITS

- 35 recommendations demonstrating a clear path to effective and efficient use of FFC
- Identifying and developing 22 Use Cases for exploitation in business cases and future designs
- Proposing a proof of concept
- Designing a data architecture for a practical FFC system delivering key information to decision makers
- Holistic design of a decision and data correlation system (virtual hub) incorporating FFC data. This would exploit AI to present the right data at the right time allowing the right operational decisions to be quickly made, improving, and exploiting real-time intelligence to facilitate timely and correct decisions.

### VALUE ADD

- We explored beyond the boundary of the brief to highlight the full landscape; such as Saloon CCTV and other data sources that would improve the overall intelligence picture
- We were able to explore the existing standard for FFC identifying shortfalls and how they impact the quality of the data received
- We were able to highlight issues with data sharing agreements.