Alchera Bus Service Description

January 2026

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COMPANY

Alchera Technologies: data-driven mobility experts.

Alchera is a specialist in enterprise-grade mobility and infrastructure systems, providing software tools and machine learning to power data-driven infrastructure.

Alchera specialises in helping operators of road networks to maximise operational and commercial value of fragmented mobility data.

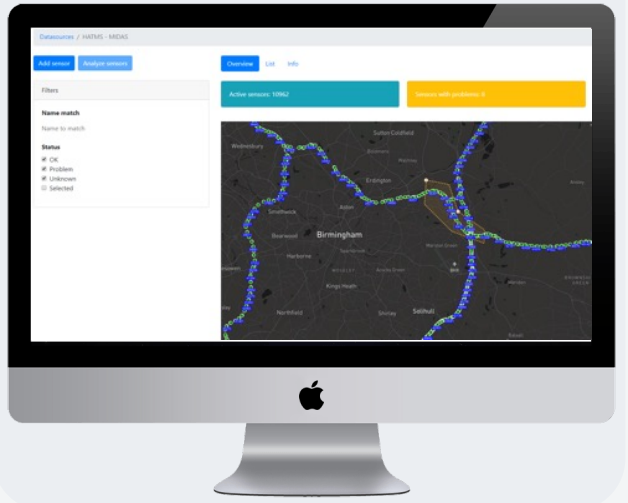
Our flagship platform, analyses & fuses data in real-time from existing sensors across the road network - including cameras, connected vehicles, GPS and IoT sensors - providing auditable access to relevant stakeholder groups both internally and externally where data can be shared for wider impact

250+
YEARS OF INDUSTRY EXPERIENCE

20+
PEER-REVIEWED PAPERS

TEAM EXPERTISE

University of Cambridge, Jaguar, Land Rover, Bank of America, TRL, UBS, Blackstone, Imperial College London, BMW, StarLeaf, Siemens, Barclays, UCL, NVIDIA, PA

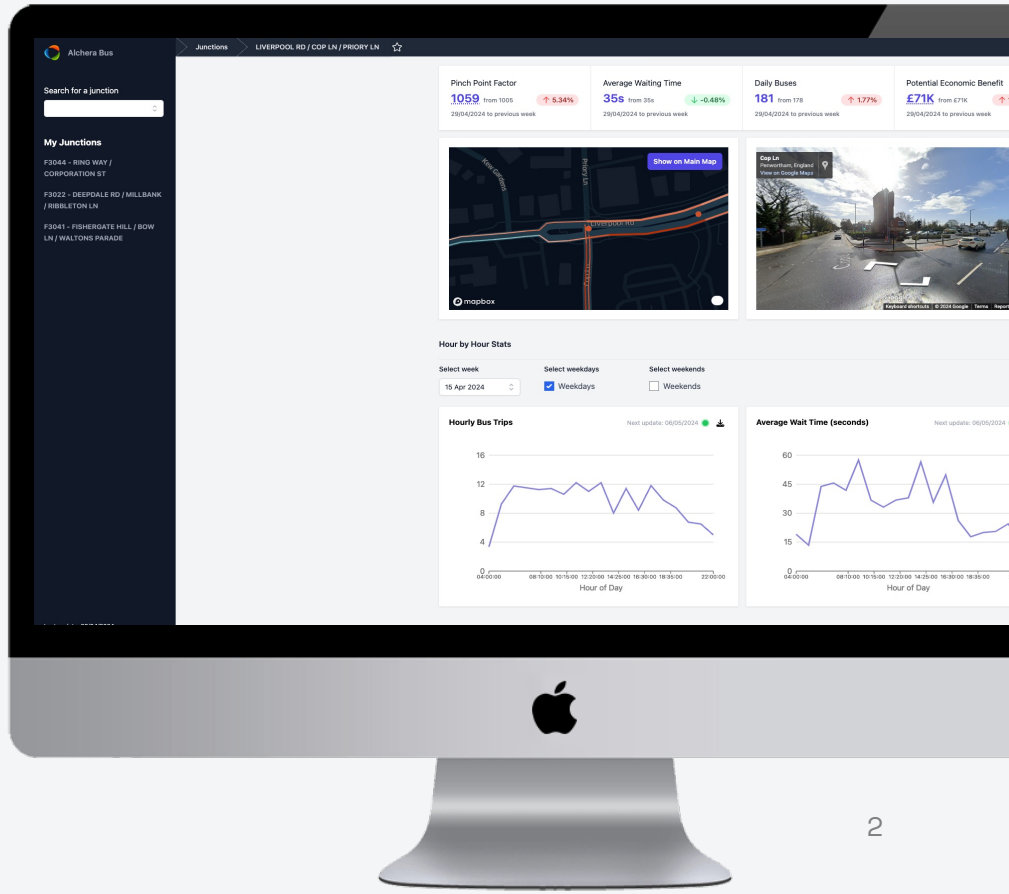


Motivation: evidence-based bus network performance analytics.

Alchera builds mobility software that aids Local Authorities in driving value from data, specific to mobility infrastructure. Alchera are experts in mobility, data and machine learning and help operators of road networks to drive better strategic, operational and policy decisions.

Alchera Bus has been developed to allow road operators to take a data-driven approach to monitoring and improving bus networks. It provides consistent, data-driven metrics across the region it is deployed, to support Local Authorities in monitoring and evaluating the bus network.

This solution has been commissioned to provide evidence-based recommendations and evaluation for multiple funding mechanisms, e.g. LUF and BSIP.



SOLUTION

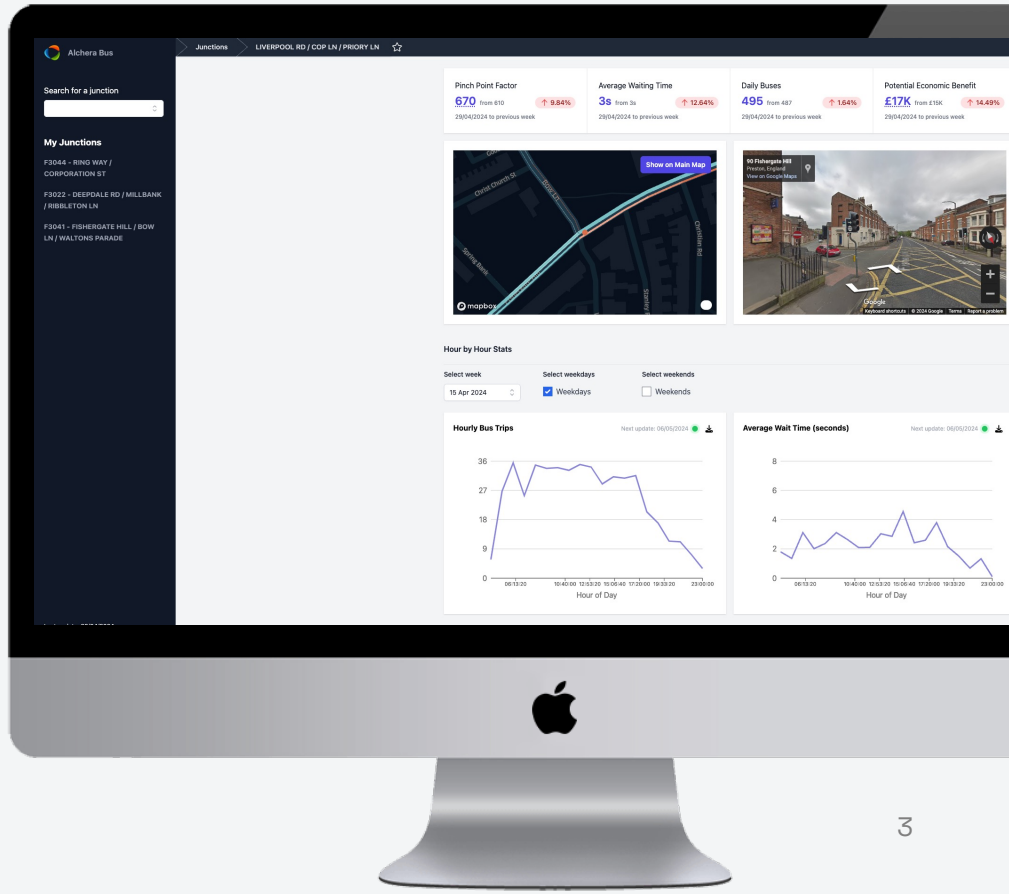
Alchera Bus: insight from infrastructure to get the most out of bus networks.

Alchera Bus is used by Local Authorities, transport bodies and their supply chain, to gain visibility of the local bus network.

The solutions supports investigation of historical & real-time bus activity to monitor, evaluate and improve bus networks, unlocking better decision making on timetables, signal interventions and prioritised investment.

- measuring & monitoring key KPIs, such as reliability, punctuality, average speed and patronage.
- systematically identifying “pinch points” – individual road segments and junctions within corridors where buses are being slowed down or have high variability in the time it takes buses to pass through.

These insights provide data-driven evidence to target junction/corridor level improvements to improve the free-flow of buses an networks for all.

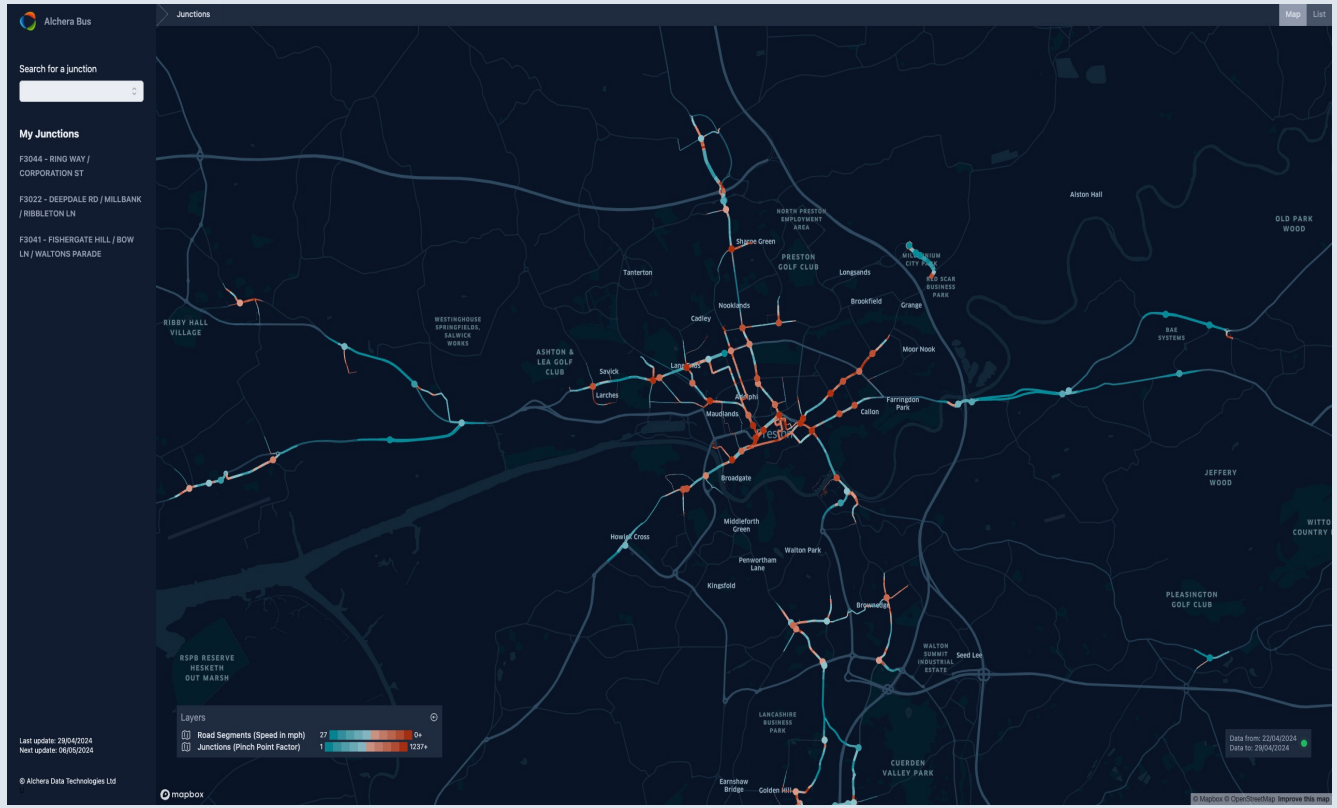


FEATURES

Alchera Bus: systematic, data-driven visibility of the network.

“Dots on a map” show pinch points and links alongside bus routes in the region for more productive investigation.

- Quickly explore junctions and links across the whole network
- Visualise and communicate where problem links and junctions are
- Drill down into the data, with intuitive user interface, and CSV download.



Alchera Bus: powerful analytics quantifying and ranking pinch points.

Proprietary analytics build upon robust data pipelines, taking raw BODS data and other data sources, to calculate a validated “pinch point” metric and economic benefit calculation.

- Quickly identify the “worst” junctions on the network
- Quantify economic impact of junction improvements
- Validate & maintain forecast benefits of interventions

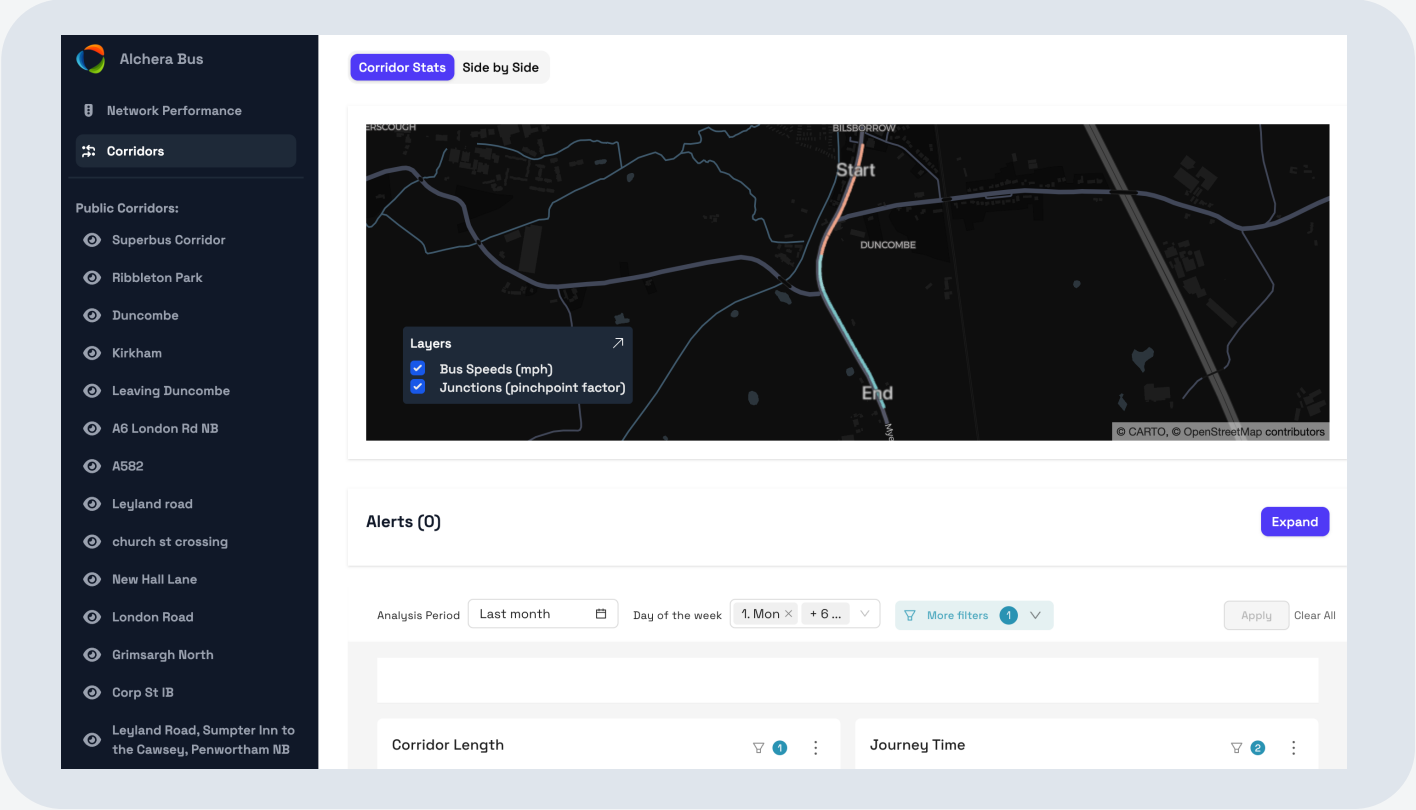


FEATURES

Alchera Bus: corridor investigation of junctions & surrounding road segments.

Bus route, or user defined corridors to explore pinch points along key routes and adjacent segments allow a more holistic way to appraise the bus network efficiently.

- Measures bus speeds down to individual road segments, to include average speeds at signals, through signals, in addition to min/max/median measurements for comparison.
- Highlights turning movement at junctions to identify approaches and exits having the most impact on bus speeds.



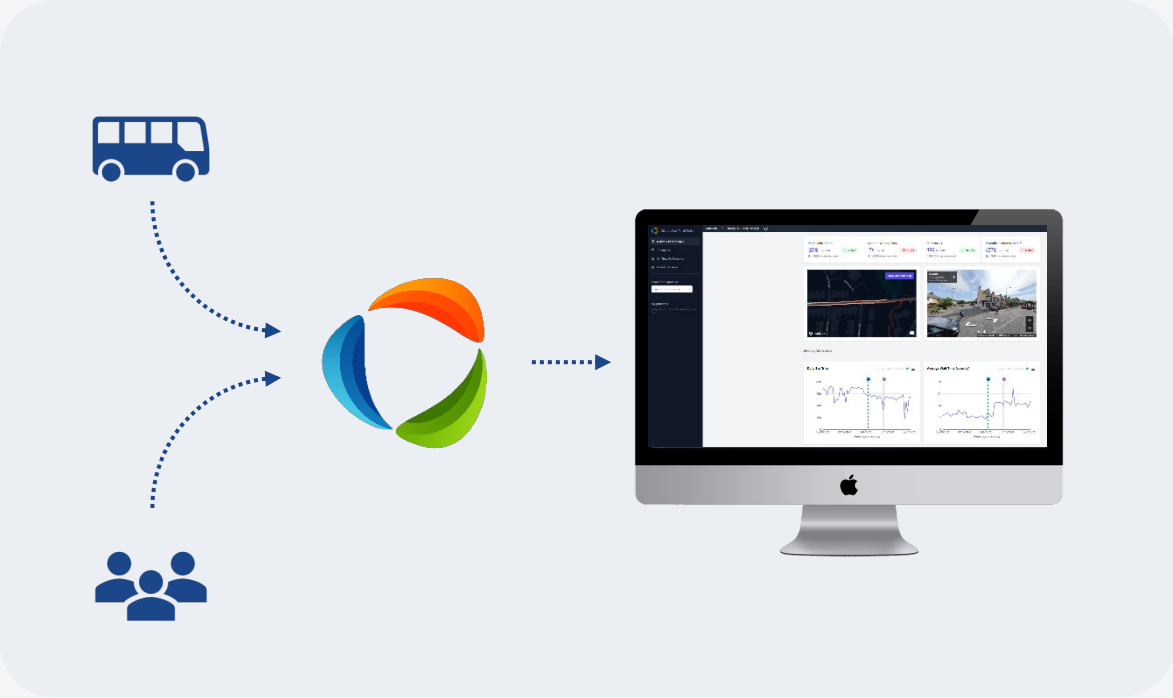
FEATURES

Alchera Bus: trustworthy data analytics and AI to provide robust evidence.

Alchera ingests data from BODS and other data sources in real-time, as it becomes available – this is cleaned, and map matched to improve and refine data quality. Data is stored indefinitely, meaning historical data is always accessible for trend analysis and other data comparison purposes.

Historical data can be backfilled from all sources, subject to availability. E.g. Alchera can run the same analysis for a previous point in time for comparative purposes.

Where bus operator data is available (location /patronage/ticketing), this is ingested in parallel and fused.

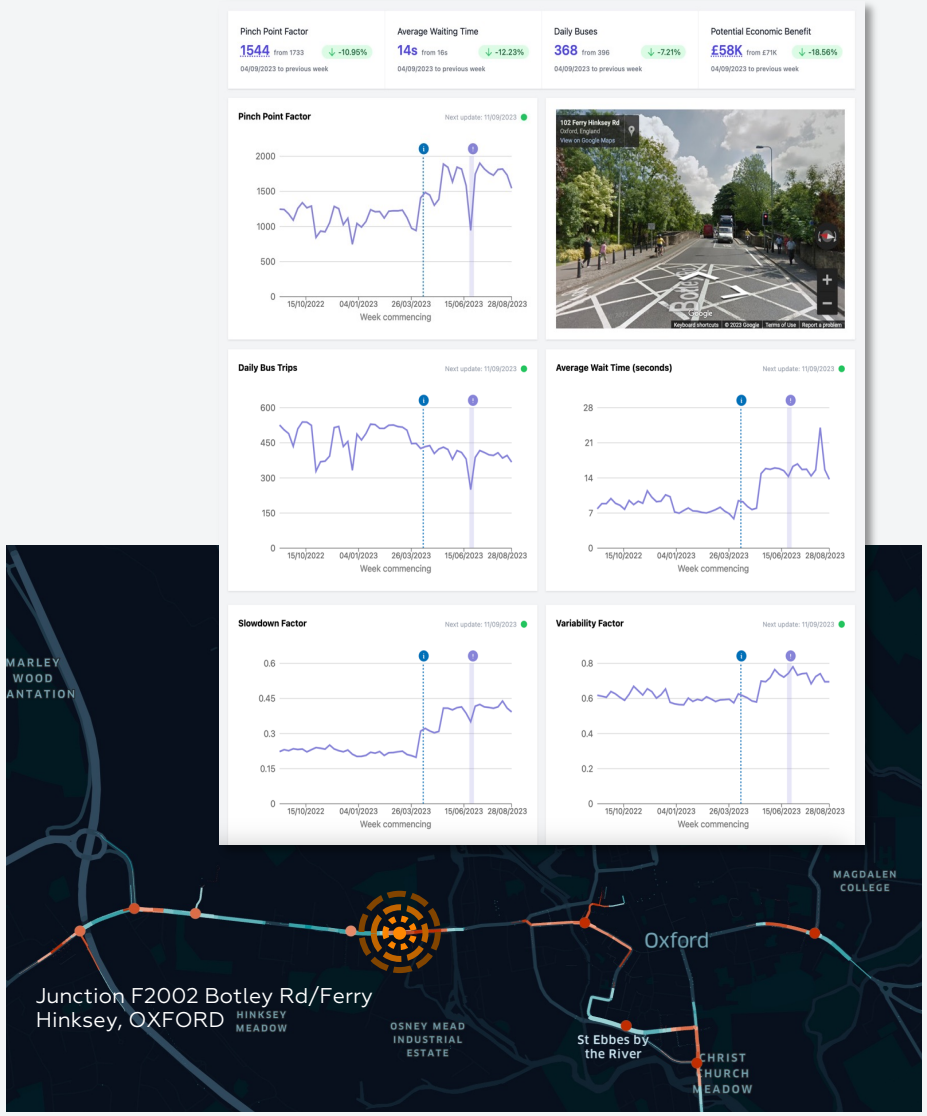


FEATURES

Alchera Bus: monitor interventions and validate.

Alchera Bus can be deployed “always on” or as a single analysis, either way allowing for a repeatable approach to methodology.

This allows users to investigate previous decisions and validate that areas flagged for improvement, are supported by data and provide the greatest economic gains for the region, accounting for improvements already implemented in the network, in addition to any other external factors.



Outcomes: driving evidence-based decision making.

Using BODS as the primary data source, Alchera Bus uses consistent data methodology to provide:

Validated metrics: Key KPIs to ground decisions.

Granular, quantifiable and comparable metrics across all junctions and corridors, regardless of bus operator. To include journey times, reliability, trip counts and wait times

Tools for investigation: Interfaces to explore insights.

Easy to explore user interface to validate that previously planned, recommended, or implemented schemes are still optimal, and ‘pinch points’ mooted for interventions are supported by data.

Repeatable capability: Opportunity to easily re-run analytics.

A solution allowing for future monitoring and evaluation requirements, completed using identical criteria, providing a ready-made report for internal and external stakeholders, e.g. The DfT.