Thames Laboratories AI scheduling of field engineers

IMPLEMENTED 2022–2025 · CONSTRUCTION AND PROPERTY · UK · BAND C · CLAIMED ONLY
VERSION 1.0 · PUBLISHED 20 NOVEMBER 2026 · UPDATED 20 NOVEMBER 2026 · FACTS CHECKED 20 NOVEMBER 2026

Thames Laboratories, a UK asbestos surveying consultancy, worked with Aston University to replace manual job scheduling for its mobile engineers with an AI scheduler. In benchmark tests the developers report engineers' daily travel more than halved and operating costs down 37% on two of three datasets.

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NOTICE WORDING LAST UPDATED 16 NOVEMBER 2026

AT A GLANCE

AI and automation used: Bespoke evolutionary optimisation algorithm with job clustering, built with Aston University to allocate jobs to engineers.

Implemented: 2022–2025. Grade: band C, Process change, Claimed only.

Headline result, as reported: In benchmark tests, AI schedules more than halved engineers' daily travel and cut operating costs by 37% on two of three datasets, by the developers' account, December 2025

1 · The case

The facts, as reported by the 5 sources listed at the end. Where a source is silent, the field says "Not reported".

Organisation

Thames Laboratories. UK asbestos surveying consultancy, founded in 1991 and based in Fenstanton near Cambridge, sending mobile engineers to sites across the UK; over 25,000 jobs a year for more than 150 clients, by Aston University's account. Canvas block: 4. Operations and process. Also 6. Data and technology, 5. People and skills.

Business challenge

The challenge. Job scheduling was mostly manual, which the partners say led to poor customer service, uneven and inefficient use of engineers, slow reaction to changes and a high environmental cost. Schedulers had to fit urgent work around planned jobs. Aston says Thames Labs could not find a commercial scheduling product that responded dynamically, and was told by existing companies that what it needed could not be done.

How it was addressed. Through a Knowledge Transfer Partnership, Aston University's School of Computer Science built a scheduling system with Thames Labs. The published chapter describes a tailored evolutionary algorithm, a clustering step that groups jobs by proximity to engineers, cached distance and duration calculations, and stored solutions for proposing alternative timeslots in real time. techUK says the tool learns from historical allocation records and adjusts to real-time changes such as late job changes and engineers stuck in traffic. It assigns jobs to suitably skilled engineers, keeps each day's route short and spreads workload evenly across the week. A second 30-month partnership, announced in March 2023, set out to extend the in-house system to client and contractor systems for social housing maintenance, using machine learning to prioritise and allocate jobs. [1] [2] [3] [4] [5]

Who implemented it

Aston University (University or research lab): Its School of Computer Science designed and built the scheduling algorithm through Knowledge Transfer Partnerships..
In-house (In-house): Provided data and staff, including a development manager who co-authored the published results, and adopted the system..
Number of staff at Thames Laboratories is not given in the sources opened, so size is left blank.

Technology (SEAM pillar E)

SEAM types: T5 Custom / fine-tuned models. Deployment: Not reported. Vendors and products: Bespoke evolutionary scheduling algorithm (Aston University and Thames Laboratories).

Where it was built in: Allocates incoming jobs to engineers by skills, location and workload, re-plans on real-time changes, and was calibrated to the way job information is shown to staff in the company's interface.

What changed

Before: mostly manual job scheduling. After: an AI scheduler allocates jobs to engineers, and techUK says it replaced the legacy logistics and the staff were kept. [1] [2] [3] [4] [5]

What it cost

Not reported

What it saved

Benchmark results, by the developers' account: on two of three test datasets, engineers' daily tours less than half as long, daily CO2 emissions down by almost 40%, fuel use down by more than 35% and operating costs down by 37%. Savings in live operation: Not reported. [1] [2] [3] [4] [5]

Governance and control

Academic supervision came from Aston University, and the system was benchmarked against manual schedules before the results were published. Explainability was a design aim, but techUK reports that non-technical staff found the reasons for allocations hard to grasp. Human review of allocations, testing in live use and monitoring: Not reported.

S2 · Accountable owner · Claimed
Thames Labs' managing director, John Richards, backed both partnerships; Dr Alina Patelli and Professor Aniko Ekart led for Aston University. [1] [2]

A1 · Safe use · Not reported
Not reported.

A2 · Human in the loop · Not reported
Whether schedulers review or override AI allocations is not reported.

A3 · Monitoring and assurance · Claimed
The AI was benchmarked against the manual schedule in three test scenarios, by the developers' account; monitoring in live use is not reported. [3] [4]

A4 · Vendor AI · Not reported
Built with Aston University; no third-party AI vendor reported. [1]

A5 · Agent controls · Not reported
No agents described.

A6 · Standards and regulation · Not reported
Not reported.

What worked, what did not, what is unproven

WORKED

– Shorter daily travel, lower emissions and lower operating cost than manual schedules on two of three benchmark datasets, by the developers' account.

– More even workloads across engineers and across the week, by techUK's account.

– An admin team leader says the system made staff more aware of how they book appointments, allocate them and set their length.

DID NOT

– On one of the three benchmark datasets the AI only matched the manual schedule.

– Staff trialling the algorithm gave conflicting, ambiguous feedback, by techUK's account.

– Legacy job and engineer records, such as location, priority and status, were often incomplete or misaligned.

– Non-technical staff found the reasons behind AI allocations hard to grasp, which increased resistance to using the system.

UNPROVEN

– Results in live operation: the published figures are from benchmark scenarios.

– Independence of the review: the chapter's authors include the book's two editors and a Thames Labs manager.

– Outcomes of the second partnership on social housing maintenance, and of the planned software service: Not reported.

Timeline

2022 First Knowledge Transfer Partnership with Aston University on engineer scheduling due to

Mar 2023 Aston and Thames Labs announce a second 30-month partnership to extend the in-house scheduling system to client and contractor systems [2]

Nov 2025 Peer-reviewed chapter on the scheduling algorithm published by Springer [5]

Dec 2025 techUK publishes a case study reporting adoption and benchmark results [4]

2 · Grade and SEAM assessment

MarLuc's opinion, made on the evidence above. How cases are graded: marluc.co.uk/case-studies/how-we-rate

Level of change and impact

Claimed: Not applicable. Grade: C, Process change. Proof: Claimed only. Level of change: Process change.

Process change (Level 2, band C). The partners say the AI scheduler replaced manual job allocation. Results come from benchmark scenarios; live operating figures and changes to jobs or teams are not reported.

Job allocation, a core process, was moved from manual scheduling to an AI scheduler that the partners say replaced the legacy system. The measured gains come from benchmark scenarios, so the band rests on the partners' account of adoption.

The SEAM view and lessons learnt

The gains in the benchmarks came from re-planning which engineer goes to which job, which cut travel, fuel and cost; the sources give no figures from live operation. Poor data and hard-to-explain allocations were the main barriers, and staff resistance grew where they could not see why a job went to an engineer. Before copying, a leadership team should ask whether its job, location and skills data are clean enough to schedule from, and how schedulers will see and challenge the reasons for each allocation.

1. Clean job, location and skills data before automating allocation.
2. Show schedulers why each job went to each engineer.
3. Measure travel, cost and service in live operation, not only in test runs.

Evidence

Score 2 of 4. Self-reported: benchmark results published by the developers in a peer-reviewed chapter of a book two of them edited; adoption is the partners' own account; no independent check.

Evaluation method. Benchmark comparison: AI schedules compared with the legacy manual schedule in three test scenarios; results published by the developers; no live before and after figures.

Sources disagree. techUK says Thames Labs has successfully adopted the system to replace its legacy logistics; the chapter abstract says the team is successfully automating the company's

3 · Original sources

Read these in full. To challenge a fact or a grade, use the contact form at marluc.co.uk or the link on https://marluc.co.uk/case-studies/thames-laboratories-ai-engineer-scheduling

[1] Aston University: Thames Laboratories (Knowledge Transfer Partnership)
https://www.aston.ac.uk/business/collaborate-with-us/knowledge-transfer-partnership/at-work/thames-laboratories

[2] Aston University: Aston University and asbestos consultancy to use AI to improve social housing maintenance
https://www.aston.ac.uk/latest-news/aston-university-and-asbestos-consultancy-use-ai-improve-social-housing-maintenance

[3] Springer: Intelligent Job Scheduling: Better Service for Less Carbon (Women in AI and Sustainability)
https://link.springer.com/chapter/10.1007/978-3-031-95890-8_7

[4] techUK: AI adoption case study: Transforming job allocation and logistics at Thames Laboratories
https://www.techuk.org/resource/ai-adoption-case-study-transforming-job-allocation-and-logistics-at-thames-laboratories.html

[5] Aston Research Explorer: Intelligent Job Scheduling: Better Service for Less Carbon
https://research.aston.ac.uk/en/publications/intelligent-job-scheduling-better-service-for-less-carbon/

Thames Laboratories website: https://www.thameslabs.co.uk

Version 1.0 · Published 20 November 2026 · Updated 20 November 2026 · Facts checked against sources 20 November 2026 · Downloaded 26 November 2026. This PDF may be out of date: the latest version, and a way to report an error or a better source, is at https://marluc.co.uk/case-studies/thames-laboratories-ai-engineer-scheduling

VERSION HISTORY

v1.0 20 November 2026 First published