

**Scalable National Transport Analysis Platform**

**Expression of Interest**

**CAPABILITY ASSESSMENT**

**Department/Organisation: DfT- Transport Appraisal and Strategic Modelling (TASM)**

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**Agreement ref:**

**Date issued: 21 March 2025**

**Response deadline: 01 April 2025 @ 16:00**

Summary

# Objectives

The DfT requires an analytical platform that is robust, scalable, distributed, combining methods across analytical disciplines to produce analysis for national transport policies. This requires an end-to-end solution from transport modelling through appraisal analysis to visualisation of results. The scale and expectations of the use of analysis in policy making has increased significantly and we are looking for a system to help us meet that analytical need. While remaining with the same staffing levels.

# Current situation

The national transport model has around 7,100 zones, 136,000 links, 46,000 nodes, 5 assigned user classes, 3 time periods, route choice for the assigned demand segments (apart from buses that are a pre-load). In the demand model there are 8 Journey Purposes, mode choice for 6 modes, and destination choice.

Typically to use the national transport model takes around 5 working days. 1 day to setup and quality assure the inputs and assumptions, half a day to setup and run the LGV model and the freight model, 11-12 hours to run a forecast year through both VDM and highway assignment, anything from half a day to 2 days to check the model results, and then a similar amount of time to generate presentation quality visualisations. All these stages have significant amounts of manual quality assurance, and manual data handling, with the exception of validating the approach and the setup data, all the internal manual handling and QA are in scope for being removed with as many modules running in parallel as possible.

Analytical Requirements:

* Fast analysis, initial results within 5 minutes and final results within 10 minutes.
* The platform to have a reproducible automated data pipeline from end to end across all models and modules.
* Scalable distributed architecture, the time to compute multiple years to be within +10% of the time to compute a single year. Intermediate results to be available for the user as soon as they are calculated.
* Large scale 4 stage transport model to enable assessment of national transport policies.
* Environmental modelling Emissions (CO2e, NOx, PM10), and noise.
* Integrated Delivery Model: it is essential that all the analytical modules integrate seamlessly, with results from the transport model feeding seamlessly into the noise and air quality models, that feed into appraisal modules.

# Digital Security Requirements

Digital security requirements must be embedded into data, applications, technology, and governance. Data will be maintained and managed with confidentiality, Integrity, and availability risks in mind. The platform must meet DfT and wider HMG security policies. We will check as part of the Invitation to Tender stage against relevant elements of:

* [Security policy framework - GOV.UK](https://www.gov.uk/government/publications/security-policy-framework/hmg-security-policy-framework)
* [Cybersecurity | NIST - National Institute of Standards and Technology](https://www.nist.gov/cybersecurity)
* [Government technology standards and guidance - GOV.UK](https://www.gov.uk/guidance/government-technology-standards-and-guidance)
* [Secure by Design Principles - UK Government Security - Beta](https://www.security.gov.uk/policy-and-guidance/secure-by-design/principles/)
* [The Technology Code of Practice - GOV.UK](https://www.gov.uk/guidance/the-technology-code-of-practice)
* [National Cyber Security standards](https://www.ncsc.gov.uk/collection/risk-management)
* [Web Content Accessibility Guidelines](https://www.gov.uk/service-manual/helping-people-to-use-your-service/understanding-wcag)
* [Cloud Security principles](https://www.ncsc.gov.uk/collection/cloud/the-cloud-security-principles)
* Adherence to DfTs Architectural principles copy to be provided at Invitation to Tender stage.

# Actions, next steps

* Capability assessment responses received and assessed
* Successful bidders invited to supplier day
* Supplier day [where suppliers will demonstrate their capability]
* Requirements refined by DfT
* Tender processchosen
1. **Indicative contract duration will be for an initial 6-month period with a possible extension of an additional 4 months**
2. **Indicative timescales for tender are included in Annexe 1**

# Call for competition process

**Stage 1** – Capability Assessment following the shortlisting of suppliers by TASM to identify suppliers that can meet their requirements. Suppliers must be able to answer yes to all the capability assessment questions to become shortlisted for stage 2. A collaborative approach should be demonstrated which allows for requirements to be altered based on needs and risks which we expect to evolve through the discovery, proof of concept and pilot stages. This allows for joint problem solving with prospective suppliers encouraging the latest industry best practices including use of technology.

**Stage 2** – Suppliers who meet all the criteria will be invited to a supplier day to present their capability.

**Stage 3** –If you meet the customer’s criteria for being invited, your presentation will be evaluated against the published capability assessment criteria and the successful bidder(s) will be notified. If the Department is satisfied your tool meets our requirements you will be invited to tender for the opportunity.

Capability questions

Please confirm you have the capability to provide the following services by responding Yes or No to the questions listed below. Only those bidders answering yes to these mandatory questions will progress to Stage 2.

Please answer the following questions with Yes (**Y**) or No (**N**)

1. Do you have an interactive, fast and scalable, connected analysis platform? **(Y/N)**
* GUI for use in real time to implement analysis
* Fast run times to enable interactive use within meetings [5 minutes initial results and 10 minutes final results]
* Connected data platform with automatic transition between domains/modules
* Automatically display model outputs in a simple interactive way
* Scalable with little additional overhead. The time to compute 10 forecast years to be within +10% of the time to compute 1 forecast year
1. Do you have a platform that is multi-domain **(Y/N)**

• Automatic transition between analytical domains, transport modelling, environmental modelling, appraisal and dashboards. Once the transport model is complete the other domains should work in parallel without user input. The user interface should still work enabling concurrent interrogation of the transport model outputs while later modules are running in parallel.

• Transport modelling

• Environmental modelling

• Appraisal

• Data visualisation and dashboards

1. Does your platform run a large scale transport model? **(Y/N)**

• Thousands of zones (3k-8k)

• Mode choice: walk/cycle, car, bus, rail

• 5 assignment classes: Car commute, car business, car other, LGV, HGV

• Large scale highway network (60k-150k links)

• Public transport network, taking account of services

1. Does your platform have environmental modelling modules? **(Y/N)**

• Transport emissions estimates of: Carbon [CO2e], PM10, NOx,

• Transport noise estimates

1. Does your platform have appraisal module? **(Y/N)**

**•** Journey time benefits, Commute, Employers Business, Other

• Emissions, CO2e, NOx, PM10

• Noise

1. Is your platform flexible in deployment and development? **(Y/N)**

**•** Flexibility for DfT to add new modules

• Parallel, Scalable and distributed by default

• multiple forecast years run in parallel

• Post transport model analysis runs in parallel (Environmental, appraisal and visualisation)

• Realistic hardware requirements (less than £80,000)

1. Can you provide, deploy, install, implement and support the platform for the DfT? **(Y/N)**
2. Do you provide planning, solution design/architecture, and project management as needed? **(Y/N)**
3. Can you assess and identify any potential risks and provide recommendations to the DfT for mitigating the risks associated with delivery of the new platform? **(Y/N)**

Logistical questions

1. Can you deliver an England platform within the timescales given in Annex 1 – Discovery, Proof of concept, Pilot. **(Y/N)**
2. Can you provide project management including effective working with Digital, Information and Security (DIS), within the timescales given in Annex 1 – Discovery, Proof of concept, Pilot. **(Y/N)**
3. Can you attend project meetings at DfT’s London offices on the dates given in Annex 1 – Discovery, Proof of concept, Pilot. **(Y/N)**

**Y/N Count**

|  |  |
| --- | --- |
| **YES** | **NO** |
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Please note that any Nil Responses to this invitation will be treated as confirmation of your intention NOT to participate in this competition and you will not be invited to participate in Stage 2.

All responses to Stage 1 should be submitted no later than 16:00 on the 1st April 2025. All responses shall be sent directly via email to jason.thrupp@dft.gov.uk

Should you have any queries regarding the Capability Assessment please send directly via email to jason.thrupp@dft.gov.uk aligning to the procurement timetable below.

Annex 1

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| Scalable national transport analysis platformProcurement TimetableThe timetable below is indicative and may change if necessary. Suppliers will be informed of any changes promptly. |
|  |  |
| Publish Capability Assessment (CA) | 21 March 2025 |
| CA Clarification period open | 21 March 2025 |
| CA Clarification period closes | 28 March 2025 @ 13:00 |
| CA Clarification response published | 31 March 2025 @ 17:00 |
| CA Submission deadline | 1 April 2025 @ 16:00 |
| Review CA’s | 4 April – 10 April 2025 |
| Supplier Event preparation | 11 April – 17 April 2025 |
| Supplier Day (to include demos) | 21 – 22 April 2025 |
| ITT Preparation | 23 April – 29 April 2025 |
| ITT Publication | 1 May 2025 |
| ITT Clarification period opens | 1 May 2025 |
| ITT Clarification period closes  | 14 May 2025 |
| ITT Clarification responses published | 19 May 2025 |
| ITT Submission deadline | 28 May 2025 |
| Evaluation / Moderation | 2 - 6 June 2025  |
| Intention to Award | 9 June 2025 |
| Alcatel period  | 10 June – 20 June 2025 |
| Contract Award | 23 June 2025 |
| Draft Contract documentation | 25 June 2025 |
| Indicative Contract Phases |
| Start of Contract | 2 July 2025 |
| Inception meeting – London | 2 July 2025 |
| Discovery phase ends | 18 July 2015 |
| Proof of concept phase ends | 10 October 2025 |
| Pilot stage ends | 16 January 2026 |