

Transport and Uncertainty Modelling

Service Category: Cloud Migration Planning, Cloud Support Services

About Our Service

Frazer-Nash delivers bespoke transport modelling capabilities leveraging cloud technologies to inform and enable optimised decision-making for rail, road and aviation systems. We provide evidence-based business, technical & environmental analysis and assurance. Applying our expertise in possession management optimisation, we maximise asset intervention efficiency and minimise downtime to enhance cost-effectiveness.



Service Features

Dynamic transport modelling using live cloud-based data and GIS services

Complex cloud systems integration modelling projects with diverse stakeholder requirements

Possession optimisation and QSRA risk management toolset

Bespoke probabilistic model development, big data analysis, and uncertainty audits

Dynamic capacity modelling web application for depots and terminals

VAMPIRE and LS-Dyna vehicle-track interaction dynamic modelling

ETCS and ERTMS implementation, management, and consultation for cloud solutions

REPAIR train delay prediction model and network capacity modelling SaaS

Route availability assessment for new and modified rolling stock

Scenario modelling enabling multi-future planning and business case development

Service Benefits

Extensive in-depth
rail, road and
aviation domain
knowledge

Diligently risk
managed
innovation,
development, and
secure cloud-hosted
deployment

Application of best
cloud practices,
enabling conformity
and robust delivery

Extensive thought
leadership and
collaboration with
academia, industry
and government

Predictive SaaS
analysis to
communicate and
minimise risk in
possessions

Proven competence
of application and
delivery of MSP in
transportation

Deep understanding
of comprehensive
approvals processes
enabling decision-
ready products

Rigorous change
management
expertise, enabling
reliable, robust and
trustworthy
solutions

Independent and
solution agnostic,
intuitive concept
designs, distributed
computing

Optimise
possessions, asset
intervention, and
reduce delays and
costs

Detailed Service Definition

Frazer Nash offers a wide range of transport modelling, covering all modes of transport. Our modelling services include the development of bespoke software solutions to solve complex and difficult problems, encompassing the whole range of uncertainty, capacity, and integration problems. We have an industry-leading capability, based on our bespoke software toolset, in optimising the layouts and operation of complex rail depots and terminals. We also have unique models covering train delay predictions, possession optimisation, rolling stock carbon emissions, route delay risk and others.

Detailed Service Definition (continued)

We hold particular expertise in undertaking modelling and developing associated software solutions in cloud-hosted environments, and in leveraging the scalability and availability advantages offered by these platforms to deliver cost-effective solutions to problems that would be difficult with on-premises hardware. We employ industry best practices of Agile workflows, and continuous integration and continuous development (CI/CD) DevOps practices to deliver functional software solutions that are easily deployed into your organisation and can be rapidly and iteratively updated to meet your requirements. Our cloud expertise is platform agnostic, and we employ developers and solution architects with certified expertise in both the AWS and Azure platforms. We have supported numerous high-profile customers in this area, creating evidence to underpin several multi-million-pound investment decisions.

We offer a related modelling service that is independent analysis of capacity such as rail, roads or an integrated combination. We are industry experts in the development and understanding of probabilistic models, leveraging our expertise from different sectors. These models and approaches are vital when making decisions in an uncertain environment, i.e. early in a process, or with particularly novel or challenging problems.

Detailed Service Definition (continued)

Frazer-Nash has a large capability to develop bespoke risk management, maintenance, and operational optimisation software tools and services that can be used to solve a multitude of transport challenges. These tools can be deployed into cloud environments and can be provided on a Software as a Service (SaaS) basis.

We are adept at leveraging cloud services and features to develop scalable solutions to large and complex problems requiring significant compute resources, and / or the ingestion, manipulation, and storage of 'big data'. We are recognised innovators, most recently we won an award for innovation for the REPAIR system that predicts the knock-on impact of delays across the rail network, using machine learning techniques and live data feeds. We can also assist with various rail specific issues: we hold a license and expertise in the use of VAMPIRE Motion of rolling stock on rails; and we can advise on the system integration techniques for ETCS - European Train Control System / ERTMS - European Rail Traffic Management System.

Why Frazer-Nash Consultancy?

Frazer-Nash Consultancy is an independent engineering and technology consultancy with over 35 years' experience delivering high-quality digital and cloud-enabled solutions. We support organisations operating in complex and regulated environments through our collaborative approach and deep expertise in digital engineering, software development and systems integration.

We are **solution and technology-agnostic**. We assess our clients' requirements and provide impartial advice and design solutions based solely on their needs. This independence enables us to select the most appropriate cloud technologies and architectures to deliver secure, resilient and value-for-money outcomes.

Our cloud solutions are informed by experience gained across multiple platforms, sectors and use cases. We combine proven engineering discipline with a strong understanding of integration and whole-system design to support and enable cloud adoption while managing risk and ensuring long-term sustainability.

Our Commitment to Quality

Frazer-Nash is committed to delivering consistently high-quality services and outputs that **often exceed customer expectations**. Quality is embedded throughout our ways of working, from engagement and communication through to delivery and assurance.

We actively monitor progress using our robust, proportionate controls, ensuring key decisions are subject to appropriate challenge. Each project is allocated a dedicated Project Manager, a Project Supervisor who independently reviews and approves monthly reports, and a Project Auditor for ongoing quality assurance.

We ensure accuracy and suitability for purpose of all deliverables, with independent verification by two reviewers. Our Quality Management System is certified to **ISO 9001 and TickITplus** (for software development), providing customers with confidence that our quality standards are externally assured and continuously maintained.

Our Security

Frazer-Nash operates robust security processes and controls suitable for handling sensitive and classified information **above OFFICIAL** up to and including **Top Secret**. Security is embedded across our people, processes and systems, ensuring information is protected throughout delivery.

We support sensitive and critical programmes across government and national infrastructure by applying strict information-segregation controls, including team separation to address security, or conflict-of-interest considerations

All 1500 staff hold **BPSS clearance as a minimum**, with the majority cleared to **SC** and over 225 consultants holding **DV clearance**.

Our IT systems are certified to **ISO 27001** and **Cyber Essentials Plus**, providing assurance that information security risks are proactively managed in line with recognised industry standards.

Our Approach to Subcontracting

Frazer-Nash primarily delivers services through our large base of permanent staff, supplementing this capability where required with trusted partner organisations to provide additional flexibility, specialist expertise and scale while retaining full delivery control.

We are experienced in engaging and managing subcontractors across the full project lifecycle, ranging from sole traders to large multinational organisations. Our structured approach ensures the right supplier is selected for each requirement and integrated effectively into the delivery team.

Our subcontracting processes focus on robust supplier identification and assessment, clear definition of scope, appropriate flow-down of contractual terms and conditions, and proactive risk management. All subcontractors are subject to proportionate commercial and technical due diligence to ensure they meet our standards for security, quality and delivery, enabling us to deliver outcomes on time, within budget and to the required quality.



Resourcing

Frazer-Nash employs over **1,500 technical specialists** across all grades, from **Follow to Set Strategy**, providing depth, continuity and scalability across a wide range of disciplines, backgrounds and experience levels.

To support agile and flexible delivery, our people are organised into defined **technical delivery areas** (including Information Systems, Cyber, Modelling and Software), which are deployed across multiple sectors such as central and local government, policing, health and energy. This structure, combined with strong portfolio, programme and project management (P3M), enables us to actively monitor demand and adapt resourcing throughout the project lifecycle.

We deliver complex requirements efficiently, consistently and at pace by forming tailored, multi-disciplinary teams led by a single accountable Project Manager.

Our consultants regularly work across different sectors, enabling us to cross-pollinate ideas, tools and best practice between domains. Drawing on in-house expertise, such as information security and human factors, we ensure effective and responsive delivery for every client.



Our Commercial Approach

Frazer-Nash adopts a flexible and transparent commercial approach to ensure best value and a model that aligns to each client's specific requirements. We collaborate with customers to clearly define the scope of services and agree a commercial structure that is predictable, proportionate and aligned to your required outcomes and effective delivery.

Depending on the requirement, this may include a **fixed-price model for clearly defined scopes**, or **time and materials using agreed day rates** where flexibility is required to accommodate evolving needs.

For longer-term or ongoing service requirements, and where we have control over resource flexibility, we can also offer a **single blended day rate** covering a range of grades. This provides simplicity, transparency and ease of management while maintaining access to the appropriate skills at the right time.

Next Steps

To discuss your requirements in more detail or request an order for services, please contact ccs@fnc.co.uk

