Technology Strategy Board

Innovation Platforms
Time, Distance and Place (TDP) road pricing

The Innovation Challenge

Up to £7M of public funding is being made available by the DTI through the Technology Programme to UK businesses to stimulate or accelerate their plans for innovation in the development of telematic services and innovative services for road-users, in a manner consistent with the Department for Transport's exploration of road pricing as a means of tackling congestion.

Context

Congestion is a growing problem that affects the economy and is frustrating for road-users. In the last decade the number of vehicles in Britain has risen by 6 million to over 33 million[1]. Despite over £140 billion of planned central government transport investment over the 10 years up to 2015, the Eddington Transport Study published in December 2006 predicted that congestion could get 25% worse by 2015 if nothing more is done. This is why the Government is exploring road pricing, and the role it could play in helping to tackle congestion.

The competition will give UK business the opportunity to develop competitive technology to bid for possible future procurement opportunities in the road pricing and the broader telematics area with potential global market opportunities.

The ITSS Innovation Platform

The Technology Strategy Board developed Innovation Platforms as a new way of working for Government and business. They provide an opportunity to bring business and Government closer together to generate more innovative solutions to major policy and societal challenges.

The vision for this Platform is for Britain to become "a world-leader in innovation in intelligent transport systems and services". The first joint competition - "Future Intelligent Transport System" (FITS) - was launched last year. This second competition for "Time, Distance and Place road pricing" (TDP) is being launched in parallel with the DfT's Road Pricing Demonstrations Project.

[1] Department for Transport Road Traffic Statistics

DfT and DTI have complementary aims:

DfT want to investigate whether a viable competitive and commercially attractive market for TDP road-pricing services can be developed, whilst ensuring people's privacy is safeguarded, and that the systems and technology can operate reliably and accurately.

DTI want UK industry to play a leading wealth-creating role within that market, and the broader international market.

"At the beginning of 2006, there were 219m passenger cars in the EU23+2 area. The ultimate goal of the car telematics industry is to connect all of these cars to mobile networks. Even though there are numerous potential applications, only a few have proven to be commercially viable in the European market."
Source: Berg Insight "Car Telematics and Wireless M32M" January 2007

Telematics applications are many and varied and include navigation systems, stolen vehicle trackers, commercial fleet tracking solutions, telematics-based motor insurance and remote diagnostics. Road pricing is viewed as one application of a telematic system or service. The Technology Strategy Board believes that innovation is the key to stimulating this complex, but important global market-place.

DfT's Road Pricing Demonstrations (RPD) Project

The Road Pricing Feasibility Study published in 2004 explored the role that road pricing could play in helping to tackle congestion. The Study concluded that a national system of road pricing could have a beneficial effect on congestion.

Since then, the Government has started working with, and provided funding for, 10 interested local areas as they develop innovative packages of local measures, including road pricing, to tackle local congestion problems. The Government has also invited bids for packages of measures, including road pricing, to be funded through the Transport Innovation Fund, which will make up to £200 million per annum available from 2008. It is only on the evidence the Government gets from established schemes that any decision on national road pricing would be made.

Although systems and technology for event-based charging are well established both in the UK and abroad, the same is not true of systems and technology to support Time, Distance and Place (TDP) charging. In May 2007, the Department for Transport issued a notice in the OJEU of its intention to commission a Demonstrations Project to explore the systems and technology that could enable a TDP road pricing scheme to operate in practice. The Demonstrations Project is therefore intended to explore in a simulated environment how such schemes could be designed so that they safeguards people's privacy whilst operating reliably and accurately. Further details on DfT's procurement can be found at: **www.dft.gov.uk**

The Technology Strategy Board is aiming to anticipate possible future procurement or legislation requirements, in the UK or internationally, and prepare UK industry to compete in the possible emerging market-place. They will do this by encouraging earlier and more innovative development through Technology Programme support for Collaborative R&D projects such that the developed outputs could be shown to the demonstration service providers during the Demonstrations Project.

The DfT's Demonstrations Project provides:

- a stimulus and timetable for innovation
- early insight into the potential market-place for road user service providers
- the opportunity to demonstrate more innovative solutions and services developed with support from this DTI competition
- a reference case for demonstrating the benefit of these technologies in international markets

Collaborative R&D grants can support:

- Sub-system and technology suppliers to offer innovative solutions into the early-market place for road pricing and telematics applications more generally. A single stage 'fast track' competition approach will be used to match DfT time-lines. Businesses will then have the opportunity, alongside other potential service providers, to offer their innovative products and services to the service providers taking part in DfT's Demonstrations Project.
- End-to-end system service providers to offer highly innovative road-charging solutions. A two-stage competition approach will be used to give applicants the maximum time to develop their proposals whilst still remaining aligned to DfT time-lines.

The DfT's Demonstrations Project is only one opportunity and applicants may wish to provide their own approach to exploitation of the innovations developed. Early demonstration of innovations developed will be key to success in this competition, but applicants may also wish to propose alternative arrangements for demonstration in road pricing programmes for other nations, or indeed more broadly in other telematics application areas. Funding of innovative prototype services, delivering new added value to road users, are particularly encouraged.

The DfT's Demonstrations Project will create a research environment in which a range of services (using different technical solutions) will be operated by a number of service providers to understand more fully the feasibility, operational performance and business issues for market delivered services. Evaluation of the project will inform the work being undertaken by local authorities, and the DfT's exploration of road pricing. In particular it should provide information on how to:

- Ensure people's privacy can be safeguarded
- Support the creation of an effective compliance regime
- Refine the design of scheme interoperability
- Enable the development of an effective certification regime for service.

Exploitation timescale

The Technology Strategy Board is looking to encourage the development of road user service providers.

DfT's "Demonstrations Project Context and High Level Requirements" document describes how the Demonstrations Project will be structured into four stages, such that there is a progressive build up and demonstration of performance. Innovations focused on road pricing developed under DTI grants in parallel to the first 2 stages will have the opportunity to offer their innovative products and services in the later stages of the programme. This later phase will be approximately in the first quarter of 2009 following the procurement activity. During Stage 3, the services offered should have an end-to-end operation (including working with the third-party Compliance Contractors) and should operate at the required performance levels for Stage 4, in order to certify their performance to the third-party Certification Contractor. Stage 4 may include demonstrations of road-pricing within the hypothetical context of the Demonstrations Project.

Routes into the competition

It is anticipated that this competition will comprise 2 types of projects:

Type 1: Sub-system and technology vendors to offer innovations into the early market-place of road user service providers and compliance contractors, created by DfT's Demonstrations Project. Alternative demonstration opportunities will also be considered. Businesses will have the opportunity, alongside other potential service providers, to provide services as part of DfT's Demonstrations Project. Proposals for highly innovative solutions and services developed for other telematic applications will also be considered. Type 1 projects will be run by a single-stage process. Registration of intention to submit an application must be received by midnight on 20 July. The closing date for all application forms is 27 July. Formal offer letters to successful applicants are planned for 3 September 2007.

Type 2: Road User Service Providers and/or Telematics Service providers, independent of whether they are bidding to DfT's Project or not. Type 2 projects will be run by a two-stage process. Companies will be invited to register their intent to submit an application by midnight on 20 July. The submission of the expression of interest must be received by midnight on 27 July. Successful first stage applicants will be informed by 3 September and invited to develop business cases for final assessment by 23 November. Formal offer letters are planned for 21 January 2008.

The timescales for the DfT Project and the DTI programme are consistent, but they will be run as separate and parallel competitions. The nature of the business case presented by Type 2 applicants will vary dependent on whether they intend to make use of the DfT's Demonstrations Project as part of their exploitation route.

There is no set budget between the different routes.

Road Pricing Innovation Challenges

Three research challenges have been identified. These three areas provide a focus for innovation in road pricing by industry. DTI wish to accelerate development through this competition such that these areas can be fully investigated in parallel with the later stages of DfT's Demonstrations Project. Each of these specific innovation challenges is discussed in more detail available from the ITSS innovation platform website www.dti.gov.uk/innovation/technologystrategy/innovation_platforms

1. **Providing sufficient assurance in the charges collected, while still protecting driver privacy** – protecting people's privacy needs to be a central consideration in any scheme design.
2. **Reducing the costs of collection of TDP charges by Road User Service Providers** – this is essential to efficient operation of any scheme.
3. **Delivering compliance** – ensuring that a scheme could function reliably and accurately, and fairly.

Eligibility of Applications

All applications must be for projects that address the specific requirements of the ITSS technology priority. All projects must be led by an industry based organisation and focus primarily on the needs of industry to develop and provide technological solutions reliably and at acceptable costs and timeframe.

The work must be undertaken in the UK and must involve at least two collaborators. Applications may describe a Business to Business project with at least two Industrial organisations that does not involve the science base as a collaborator or a Science to Business collaboration where the minimum is at least one Industrial organisation and at least one Science based organisation. Projects may involve a modest amount of subcontracting from either Industrial or the Science base.

Applications may seek support for Applied Research (attracting 50% public funding) through to nearer market Experimental Development projects (25% public funding). Consideration will be given to applications for projects that combine Applied & Experimental where a quantified breakdown can be substantiated.

Further details on eligibility for funding and how to apply are provided in the document "Guidance for Applicants: Competition for Funding for Intelligent Transport Systems and Services (ITSS) Projects, available on www.technologyprogramme.org.uk

Contact

For information about the application process please visit: http://www.technology programme.org.uk (This website contains the guidance for applicants, including deadlines and dates of applicant briefing sessions).

Alternatively call the helpline on 01355 272155 or email info@technologyprogramme.org.uk

The deadline for registrations of intent for both Types of projects is 20 July 2007. The closing date for Type 1 applications, and for Type 2 submissions of interest, is 27 July 2007.

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