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3 March 2016

Dear Stakeholder

ORR's approach to innovation

In July 2015, the government, as part of the Productivity Plan, asked departments to work with regulators to publish Innovation Plans by spring 2016,[1] setting out how legislation and enforcement frameworks could adapt to emerging technologies and disruptive business models. The purpose of this consultation is to seek stakeholders' views on ORR's approach to innovation.

Innovation is embedded in ORR's strategic objectives. Annex A sets out our approach and some examples of ORR's actions to support innovation in the rail and road sectors and in our approach to regulation. Other issues on innovation in rail and road will be addressed by Department for Transport (DfT) in its Innovation Plan.

We would welcome feedback from stakeholders on **whether there are any other actions or issues ORR could take to strengthen innovation in its approach to regulation**. Please send your consultation response by **31 March 2016** to

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Responses to the consultation will be published on our website unless marked confidential.

Yours sincerely

Daniel Brown
Director of Strategy and Policy

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[1] Link to the Productivity Plan (Fixing the foundations: Creating a more prosperous nation, July 2015)

Annex A: Office of Rail and Road's approach to innovation

Background

To meet the [Productivity Plan](#) requirements, the table below sets out what ORR has been doing to support the industry to undertake innovation in the rail and road sectors and in our approach to regulation. This includes a number of initiatives already underway or planned on technical and passenger focused innovation or with ORR's regulatory practice.

Innovation is led by the rail and road industry and where appropriate it is supported by ORR's overall regulatory framework. ORR has a duty to promote improvements in railway service performance and promote efficiency and economy on the part of persons providing railway and road services. We directly incentivise innovation by setting challenging efficiency targets where innovative approaches could be developed or applied to extend asset lives, improve productivity, improve network performance or reduce operating costs. At an organisational level, **innovation is embedded in ORR's strategic objectives:**

- **Drive for a safer railway:** enforce the law and ensure that the industry delivers continuous improvement in the health and safety of passengers, the workforce and public, by achieving excellence in health and safety culture, management and risk control;
- **Support a better service for customers:** Use our powers to hold the industry to account for performance and standards of service across the railway network, for passengers and freight. Promote ongoing improvement in the existence of passengers by encouraging the industry to work together, including to provide greater transparency of information;
- **Secure value for money from the railway, for users and funder:** Strengthen incentives for the whole industry to work together to drive greater efficiency from the use and maintenance of existing railway capacity, and more cost-effective investment in the network;
- **To promote an increasingly dynamic and commercially sustainable sector:** support sustainable economic growth by promoting innovation and efficient long-term investment across the rail industry through the appropriate development of effective markets and regulatory intervention;
- **Securing improved performance and value for money from the strategic road network:** secure improved performance, including efficiency, safety and sustainability, from the strategic road network, for the benefit of road users and the public, through proportionate, risk-based monitoring, increased transparency, enforcement and robust advice on future performance requirements**; and**

- **Be a high-performing regulator:** develop and apply proportionate and risk based regulation, taking a wholesector approach. Make more effective use of our resources across safety and economic functions, maximise the value of our regulation while minimising the costs of compliance for the industry.

ORR's sustainable development policy statement also notes that,

'We will work with the rail industry, and anyone with an interest, to identify research topics to improve how the industry can best contribute to sustainable development. We will encourage the rail industry to carry out this research.[2]'

ORR is actively involved with various industry groups to monitor and influence innovative change including the Rail Safety and Standards Board (RSSB). Other bodies in the sector undertake significant amount of work on innovation including RSSB. This is a link to RSSB research development and innovation.

Enabling innovation through UKRN – in January 2015, ORR together with other UK Regulators' Network (UKRN) members published a report on enabling innovation which focused on current practices across the sectors and highlighted the ways the current regulatory regime supports or promotes innovation including opportunities for cross-sector innovations.[3]

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[2] See paragraph 11 in ORR's sustainable development policy statement

[3] See UKRN's website for further details on the "Innovation in regulated infrastructure sectors" report, 12 January 2015 – http://www.ukrn.org.uk/?p=443

Table 1: Illustrative examples of measures to support innovation

1. Innovation in rail and road

Supporting innovation in rail

Price Control – Network Rail

The rail industry has two funds for research and development (R&D) and innovation that were provided as part of the current control periodic review (PR13). These are both funded from Network Rail's (regulated) capital asset base.

- **The Innovation Fund** – DfT ring-fenced £140m over this control period to fund innovation and the development of potential enhancement schemes in the next control period. It has been assumed that £52m of this £140m fund will be used to fund innovation expenditure. Administration of this fund is delegated to the RSSB as DfT put in place to encourage innovation across the industry.

- **The Strategic R&D Fund** – this fund was put in place by ORR and allows up to £50m to be added to the asset base, provided Network Rail can match this with equivalent cost-efficiently savings or third party contributions (for example, government grants or commercial partners).

The Final Determination of Network Rail's outputs and funding 2014-19 also approved an allowance of £10m for the trialling of the proposed system for providing improved protection and warning to track workers and £10m for development of a new Road Rail Vehicle.

Following the DfT's Hendy review both of these Funds have been reduced but the core programmes are continuing.[4]

For further details on innovation funding see Final Determination of Network Rail's outputs and funding 2014-19

ORR has governance arrangements in place to monitor these two innovation funds to ensure delivery of projects which benefit from these funds and to inform future policy decisions particularly with respect to innovation funding. ORR engages with Network Rail on a quarterly basis to monitor progress on innovation projects.

(A) Technical innovation:

Through the RSSB enabling innovation programme, ORR is working closely with rail organisations to remove barriers to innovation and increase incentives to keep the rail industry moving forward.

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[4] Our comments in this section are consistent with our PR13 Determination but DfT/Network Rail are reviewing the capital expenditure plans so there may be some changes to these numbers.

The programme covers innovation beyond technology and R&D, to include people, culture and processes involved. It aims to aid and challenge businesses as they take action to improve business capabilities and innovation. The programme is influencing strategic procurement, policy, strategy and planning to ensure organisations and individuals involved in the UK railway have the means to positively impact its future and help those changes to last.

► The **Future Railway Programme** is collaboration between Network Rail and RSSB working with industry and the supply chain to deliver the Rail Technical Strategy (RTS). The RTS sets out a vision for addressing ways to improve the railway's performance in four primary areas that are customer satisfaction, capacity increase, cost reduction and carbon reduction (the four Cs). It has cross industry support through the Technical Strategy Leadership Group (TSLG) which is effectively a steering group for RTS where ORR is an active member and currently has over 100 active projects. This group oversees the sub-groups (where ORR is also involved) which address specific issues at asset level that are known as the system interface committees (SICs). For further details see RSSB's website on Future Railway Programme and Rail Technical Strategy

Two examples of projects that support the RTS and are funded through the Innovation Funds:

(i) An example of the work that the innovation programmes have delivered to date includes **Independently Powered Electric Multiple Unit** (IPEMU) which is the first battery-powered train to run on Britain's rail network in more than half a century marks an important milestone to demonstrate the viability of an eco-friendly battery-powered train for the twenty-first century. The new train contributes to the RTS goal to reduce environmental impact, improve sustainability and reduce the cost of running the railway by 20 per cent over the next five years.

It could ultimately lead to a fleet of battery-powered trains running on Britain's rail network which are quieter and more efficient than diesel-

(ii) **Aeroliner 3000** – the UK rail network has historically had a limited gauging, which does not easily allow for high capacity double decker or long vehicles. AeroLiner 3000 is developing a high speed double decker train capable of running on HS2 and also serving other existing routes. It offers the potential to gain significant capacity improvements without neglecting comfort.

powered trains, making them better for passengers and the environment.

Network Rail and its industry partners – including [Bombardier](), [Abellio Greater Anglia](), and DfT (which is co-funding the project through the Future Railway Programme) – recognise the potential for battery-powered trains to bridge gaps between electrified parts of the network and to run on branch lines where it would be too expensive to install overhead electrification.

► **Digital railway and how it will affect different aspects of the industry**

'Digitalising' the railways[5] in Great Britain means using digital technology to change customer experience, improve communications and connectivity for passengers with the potential to create extra capacity, performance, cost benefits and bring major safety premium.

In 2014, Network Rail set up a Digital Railway Group on behalf the industry, led by Network Rail Group Asset Management Director, to evaluate the potential for and benefits of a programme called 'the digital railway'. Much of the content of this is based on the Rail Technical Strategy. Core part of this, is the accelerated roll-out of **European Rail Traffic Management System** (ERTMS) in conjunction with traffic management programme which are already under way aiming to significantly improve capacity on the network. The use of digital technology for customer-facing applications and for the management of Network Rail's assets is also included in this programme. ORR is actively engaged in progressing digital railway issues with the digital railway project team. These include influencing technical requirement at European and national levels, authorisation of vehicles and infrastructure, engagement on engineering and operational issues and holding Network Rail to account as the primary deliverer of the ERTMS roll-out project. ORR is also engaged with industry parties to ensure that the deployment offers value for money while generating improvements to the rail network such as capacity and reliability and ensure that the maximum benefits can be obtained including safety enhancements for track workers and level crossing users.

Plans are being developed for a trial deployment of a Digital Railway on the Norwich to Yarmouth and Lowestoft lines. This is intended to demonstrate the capabilities of the systems and learn from the experience of implementing the trial. This trail will provide vital evidence to support the business case for a national deployment of digital railway.

Supporting innovation in roads

What Highways England (HE) is required to do – the regulatory regime provides Highways England with flexibility in identifying and using innovative approaches to improve, enhance and develop the Strategic Road Network. The Road Investment Strategy (RIS) provides £150m of designated funding

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[5] For further information see [Digital Railway]()

through the Innovation Fund to allow Highways England to place a greater emphasis on the future technologies that will positively impact users and the network.

Highways England will deliver an Innovation, Technology and Research Strategy by March 2016, setting out its longer term plans for driving forward innovation and technology to deliver a smarter network.

ORR encouraging innovation – our role in monitoring Highways England is different to our role in relation to the railway. We do not, for example, set funding for innovation, but we do monitor the outcomes Highways England is delivering. Our approach to monitoring, as set out in our Monitoring Framework, allows Highways England to be innovative in the way in which it delivers its requirements and therefore delivers efficiencies – we will not hold Highways England restrictively to the delivery of detailed plans which may become obsolete during the road period.

In other areas, we continue to work towards achieving a greater understanding of the improvements in efficiency and performance that Highways England could achieve through our work on benchmarking and the second Road Investment Strategy (RIS2). Through ORR's benchmarking programme we will be working with Highways England to understand how it performs relative to other comparators across a number of activities, and providing it with information to improve, including through adopting innovative approaches. On 11 February 2016 we published a scoping study on benchmarking, which will be followed up in March 2016 by our plan of benchmarking activities.

Through our work engaging with DfT, Highways England and others on RIS2, we will consider the opportunities for innovative approaches to improve Highways England's performance and efficiency as part of our advice to the Secretary of State.

(B) Passenger focused innovation:

Customer requirements – with the advent of smartphones we have already seen the various applications to look up timetables, book journeys, provide barcode ticketing, contactless payment systems etc. Stations are gradually transforming from simply a modal interchange to offering a greater range of services including shopping and leisure activities. We encourage the industry to release data on an increasingly open data basis and this has led to innovation in Apps etc. in the market and growth in third parties entering into this sphere (generative, providing economic opportunity).

Ticketing innovation

Through its Retail Market Review, ORR has worked closely with industry to consider how the rules that retailers are subject to when selling tickets could better facilitate innovation and competition. For example, reflecting the fact that some third party retailers have played an important role in developing the ways in which passengers access information about their journey and buy tickets (for example, through new Apps), we want to make sure that third parties can sell tickets without onerous requirements.

ORR proposed some recommendations for changes to the industry rules (for example, in relation to the governance regime for third party retailers) in June 2015 (for further details see Retail Market Review - emerging findings). We continue to work with stakeholders to develop these options, and expect

to publish updated recommendations relating to third party retailer arrangements in Spring 2016.

2. Innovation of ORR's regulatory practice

Examples of what ORR has done to encourage innovation to deliver its own work more effectively and to reduce burden on business:

Data portal

"Better Statistics, Better Decisions."[6]

ORR publishes a series of National Statistics accredited statistical releases on rail, covering performance, safety, passenger usage, freight usage, complaints and finance.

ORR's National Rail Trends (NRT) Data Portal is the home of rail industry statistics for Great Britain. It has over 5,000 registered users and the portal is accessible globally. The portal is frequently updated by ORR so users have access to the latest rail statistics from a variety of sources.

On future development plans, ORR is keeping its data portal under review to make it more user friendly and increase its functionality but there are no set timelines on this.

Infrographics – ORR is also innovating in

On-line train driver licensing

ORR is developing and testing SharePoint application that will simplify the process for making an application for a train driver licence. It will provide a secure on-line facility for employers of train drivers to directly input new applications and update existing information on previous applications. This will streamline and speed up the existing process which is largely e-mail based and requires significant manual input of information by ORR administrators. ORR has issued 5,000 train driver licences and will need to issue around 10,000 more to existing drivers by the end of 2018 to meet the regulatory requirements of the Train Driving Licences and Certificates Regulations 2010. In addition ORR issues new licences where a driver's details have changed or where they are lost or stolen so

The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS)

ORR is proposing to develop a ROGs toolkit. This will be an online tool which will help duty holders to pin-point what part of the Regulations applies to them depending on where they operate and the type of operation they have.

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[6] This is a quote from the Government Statistical Service's (GSS) document 'Better Statistics, Better Decisions' published in October 2014 that brings together the three strategies previously published by the UK Statistics Authority, ONS and the GSS into a single strategy designed to make it clearer how everyone can make their own special contribution to better UK statistics and better decision-making over the next five years. See the GSS' website for further information – https://gss.civilservice.gov.uk/about/gss-strategy-better-statistics-better-decisions/

developing and using infographics. Social media has also given us the platform to engage with user groups and stakeholders and along with our infographics we have hosted a number of live Twitter Q&A sessions to coincide with the release of our station usage statistics.

this will be a regular on-going process that is needed for the foreseeable future.

Continued involvement in UKRN projects

ORR will continue to participant in URKN projects to share cross-sector learning and best practice on innovation.

European innovation initiatives in rail and road

In rail, ORR has a programme for the efficient authorisation of train cabs fitted with ERTMS based on our lessons learned from GSMR. We are sharing our best practices with other European safety authorities through the National Safety Authorities (NSA) network. We are also looking at regulations and getting the industry to follow that process/programme.

One Stop Shop project – this is European Railway Agency (ERA) led project with ORR and other National Safety Authorities (NSA) input. The project is being developed to establish an information and communication system that will allow

- **applicants to submit** their application files for vehicle type authorisations, single safety certificates (SSC) and ERTMS trackside solution approvals;
- the different stakeholders (ERA, NSAs, Board of Appeal (BoA), Applicants) to exchange information about applications
- ERA and interested NSAs to support their internal workflows for application assessment
- Stakeholders to be notified about similar applications for SSC and VA (early warning).

ORR wants to ensure that this is simple and user friendly platform that is self-explanatory and does not duplicate any functions/work we undertake already. We also want to ensure that the system can be integrated with national systems seamlessly.