



Joint Rail Data Action Plan

Addressing Barriers to Make Better use of Rail Data

Foreword



The national rail network is essential to many people's daily lives, and to the success of the UK economy. 1.7 billion passengers travelled by rail in this country last year, commuting to work and study, visiting friends and family, and accessing public services and leisure opportunities. The railway also carries essential products and commodities, supporting our manufacturing, construction and energy sectors, and ensuring that shop shelves remain stocked all year round.

Demand for rail has doubled since the mid-1990s and is projected to increase by another 15% by 2024. This presents both challenges and opportunities for the railway. Increasing passenger numbers mean we have some of the most intensively used lines in Europe, putting significant pressure on the infrastructure and leading to overcrowding on the busiest trains. But this growth also gives us the opportunity to modernise the railway fabric, invest in new trains and improve the operation of the network.

The Government's Strategic Vision for Rail, is to offer world-class services supported by outstanding customer care and value for money. To achieve this, we need to innovate. For example, by changing the way the railway is structured, getting track and train to work closely together, and realising the full potential of emerging technologies. By developing the supply chain, we can put the rail industry in a strong position to export its products and skills as Britain looks to a future outside the European Union¹.

Using data more intelligently, and increasing collaboration between the rail industry and other sectors, will be key to delivering these improvements. It will create opportunities to

¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/663124/rail-vision-web.pdf

exchange ideas, to devise new solutions to improve the running of the railways, to predict and fix problems before they arise, and to develop new tools and products for passengers such as better journey planning apps. It will also enable the rail industry to learn new skills and expertise.

The Joint Rail Data Action Plan outlines how Government and the rail industry, including the Rail Delivery Group (RDG), the Office of Rail and Road (ORR) and the Rail Safety and Standards Board (RSSB) will support this. It sets out how we will work together to improve the quality and openness of rail data and to increase collaboration between the rail and tech sectors, for the benefit of passengers, the railway, and the UK economy.

The rail industry has established a taskforce with members from across the industry and its supply chain to drive the Joint Rail Data Action Plan forward. It is chaired by tech expert and Transport Systems Catapult CEO Paul Campion. Key data sets will be released for third party use over the next two years, improvements will be made to how data is collected and classified, and new initiatives will bring the rail and tech sectors together. This will enable the development of new products and solutions to improve journeys and how the railway is run.

Our vision is for a railway which is constantly innovating to deliver better journeys and provide more accurate information for passengers, and in which the workforce is continuously developing the skills to support the changing needs of customers. This is our plan for using data to deliver these goals.

Jo Johnson MP
Minister of State for Transport

Paul Plummer
Chief Executive, Rail Delivery Group

1. Executive Summary

The Government has an aspiration to be more transparent than ever before and to deliver a world-leading digital economy that works for everyone. We want to promote a data-driven economy, i.e. a digitally connected economy that realises significant value from interlinked, large-scale data that can be rapidly analysed by technology to generate insight and deliver innovation. We believe that a data-enabled transport system will be more efficient, user-friendly and modern, benefitting every UK transport user.

Data has modernised the way people and things move around the world and there is evidence which suggests that new technologies have made collecting data easier and cheaper.² The collection and production of data is increasing across organisations globally and it is helping businesses and governments innovate, growing economies and creating new digital products and services that are enhancing citizens' lives.³

Recent findings from the National Infrastructure Commission (NIC) indicate that there are significant unrealised benefits from sharing data across sectors⁴, including transport. There is also growing evidence which suggests that openly sharing data is a key driver for innovation. This is why the Government is working with organisations across different transport modes to ensure that non-personal data can be shared between organisations wherever possible.

In May 2016, the Government published the UK Open Government National Action Plan which sets out our strategy to continue to be the most transparent Government in the world.⁵ We want to continue to use data to make decisions and to understand what products and services the public need. In 2017, we published our UK Digital Strategy⁶ which details how we will create a world-leading digital economy that works for everyone. We believe that data is at the forefront of this and we are committed to encouraging innovative uses of data by making it easier to access it across different sectors.

As outlined in 'Connecting People: a Strategic Vision for rail',⁷ 'the data and digital revolution can have huge benefit for passengers and people who want to travel'. Our ambition for the rail industry is to secure excellent services for passengers, increase opportunities for communities, help to grow the economy and deliver greater value for taxpayers. To deliver this ambition for the railway, we have set out our four priorities that will guide our actions and investment. Using data more intelligently will play an important role in delivering our priorities, in particular, our commitment to changing the way the rail sector works for the good of all rail users.

This Joint Rail Data Action Plan (Action Plan) sets out actions for the rail industry and Government to help optimise and open-up more data by addressing barriers that inhibit

² [http://www.ey.com/Publication/vwLUAssets/EY_-_Big_data:_changing_the_way_businesses_operate/\\$FILE/EY-Insights-on-GRC-Big-data.pdf](http://www.ey.com/Publication/vwLUAssets/EY_-_Big_data:_changing_the_way_businesses_operate/$FILE/EY-Insights-on-GRC-Big-data.pdf)

³ <https://www.gov.uk/government/publications/uk-digital-strategy/7-data-unlocking-the-power-of-data-in-the-uk-economy-and-improving-public-confidence-in-its-use>

⁴ <https://www.nic.org.uk/wp-content/uploads/Data-for-the-Public-Good-NIC-Report.pdf>

⁵ <https://www.gov.uk/government/publications/uk-open-government-national-action-plan-2016-18/uk-open-government-national-action-plan-2016-18>

⁶ <https://www.gov.uk/government/publications/uk-digital-strategy/uk-digital-strategy>

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/663124/rail-vision-web.pdf

it from being shared. The actions detailed in this Action Plan focus on **five themes**. They are;

1. **Data Transparency** – Clearly and openly categorising rail datasets and defining data sets that are commercially sensitive.
2. **Data Use and Access** – Building knowledge and understanding of the rail data landscape and providing more clarity on access, use and ownership to different datasets.
3. **Data Standards and Quality** – Where possible, improving the quality of published datasets and providing indicators of their accuracy, and standardising publishing formats.
4. **Data Value and Principles** – Understanding the value and potential of open data and championing the open data agenda and its benefits across all rail organisations.
5. **Rail Culture and Information/ Data Skills** – Encouraging more collaboration and partnering with outside businesses and innovators as well as promoting data and information sharing within the industry to improve business efficiencies, performance monitoring and customer experience. And, addressing the data and information skills gap through training and apprenticeships.

3. Introduction

The Department for Transport has the ambitions to **make the UK the best place to do transport digitally**, and to **cement Britain's place at the forefront of the transport technological revolution**. Unlocking the value of data is crucial to delivering these objectives. To support this we are actively working with different transport organisations and stakeholders to overcome barriers that inhibit more data from being made openly available.

As highlighted in the Industrial Strategy White Paper,⁸ we have smart consumers who reward entrepreneurs for developing new products and services. It has also become evident that the earliest adopters of new technologies are reaping significant rewards such as creating jobs and increasing their revenue. We want to make sure that we are able to readily embrace the technological advances that improve productivity and the quality of our daily lives.

Over the years, we have seen how advances in technology have influenced our culture, changed the way we do business, prescribe medication as well as detect and manage illnesses. Many of us now use applications on our smart devices to pay for groceries and travel, manage our finances, book holidays and navigate our way across towns and cities. The growing use of apps is partly due to their ease of use as well as their ability to gain quick access to information on various products and services, in a format that suits our lifestyles.

We know that there is an increasing demand for information by customers and we have embraced innovative applications such as Trainline and Citymapper that have changed

⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf

the way people get the information they need to plan and undertake journeys across cities and the country. Within rail, we have an opportunity to do so much more, and we want to do this by exploiting our data-rich resources and making improvements and changes where necessary. This will help us meet both service and information requirements for the modern day customer. This Action Plan details five key areas for improvement to help us get there.

The National Infrastructure Commission's report 'Data for the public good' points out that increasing population, economic growth and climate change have placed significant pressure on the UK's infrastructure. To address this, our existing infrastructure must become better and smarter to help reduce congestion and disruption⁹. This is particularly true for our railway and we know that there are better and smarter ways to operate, maintain and upgrade our railway infrastructure and assets more efficiently. Using both data and technology more intelligently can help us achieve this, which can also lead to reduced levels of disruption across the rail network and the negative impact that this has on customers.

Exploiting and opening-up more data can also lead to more opportunities to collaborate with innovators, which could lead to the development of personalised travel applications and ground-breaking solutions to the industry's problems. This will ultimately lead to better outcomes for customers and industry, improve productivity and help to grow the economy.

4. Background

Rail demand has continued to rise over the last decade. Britain now has some of the most intensively used railway lines in Europe, with overcrowding on the busiest services and at stations an increasing issue. This has significantly affected service reliability and confidence in our rail network.

To help manage this, the Government is investing record sums to increase capacity, boost reliability and improve journey times through the modernisation of the existing railway fabric, including the introduction of new trains and upgrading stations across the country. The Government is providing up to £34.7bn directly to deliver a more reliable railway and to meet the demand for more capacity on the network, through adding new links and restoring lost capacity and connections, whilst supporting the Government's Industrial and Housing Strategies. Despite this investment, there is much more that can be done.

There is strong evidence which suggests that making practical use of the digital and data revolution could be a powerful tool to help address many of the challenges faced by the rail network. Gaining greater access to data and using this resource in clever ways is a real catalyst for driving change. We recognise that there is a need for a coordinated effort between Government, the rail industry and innovators to get us there. While a lot of progress has been made, the complex nature of our railway means that this industry is often slow to deliver innovation, which can be evidenced by a noticeable gap between rail and other sectors.

The complex challenges we face stem from:

⁹ <https://www.nic.org.uk/wp-content/uploads/Data-for-the-Public-Good-NIC-Report.pdf>

- a) **The separation of responsibilities in track and train operations.** We have one organisation operating the track and several private companies running the franchises and rolling stock, which is leased from other companies. Each organisation can have different priorities and ways of working.
- b) **We have an ageing infrastructure** with many legacy systems and yet is supporting state of the art new trains on large parts of the network.

These factors mean that implementing fast-changing technology and meeting modern data requirements and expectations present significant challenges. However, we know that making efforts to overcome these can lead to long-term solutions and substantial efficiencies.

5. Joint Rail Data Action Plan

The rail sector has continued to make significant strides forward with regards to data sharing. For example, as part of the wider transparency commitment, in 2012 Network Rail released Open Data which they have continued to grow, and now includes access to a number of operational data feeds, including train positioning and train scheduling data across the network. In addition to this, RDG launched its self-sign-on Open Data portal in 2015 which has led to the release of greater than ever levels of information, and has supported vast improvements in the consistency of information between channels, through the development and maintenance of a National Rail Information database (Darwin).

The establishment and use of Darwin by industry and third parties has led to a variety of customer information products and services. This has resulted in improved customer satisfaction. Despite this, we believe that there is more that can be done, which is why we have worked together with a number of rail agencies, RDG, ORR, RSSB, Transport Systems Catapult, Transport for London and Transport Focus (TF) to develop this Action Plan. Our focus is on improving the quality and openness of rail datasets and, where possible, opening-up a greater range of datasets.

We also want to become a world leader in rail innovation and transparency, and since data is a key enabler of this, we want to work harder and more collaboratively to address the barriers that can stop or make it difficult for data to be opened-up or shared across different rail organisations.

The actions detailed below will lead to long-term positive outcomes for customers, for example, by helping to address their priority areas for improvement – by building the capability to collect and open-up more granular, real-time information on disruption and providing better information on things like seat availability and engineering works¹⁰. They could also help drive innovation within the industry itself and make it easier to provide better information to customers during disruption, as well as finding innovative ways to quickly identify and fix problems on the rail network. This could lead to a better customer experience and greater efficiency and reliability across the network.

The introduction of digital infrastructure has meant that there is a greater need to have the capability for asset monitoring to manage the life-span and failures of the infrastructure to improve efficiency, reliability and ultimately reduce delays for passengers. To drive this, we need to create a healthy data sharing ecosystem which is

¹⁰ <https://www.transportfocus.org.uk/research-publications/publications/rail-passengers-priorities-for-improvement/>

underpinned by both Government and industry commitment. We want to demonstrate this commitment by becoming more transparent and innovative to address the barriers that hamper progress in many areas.

Rail data is used by members of the public, including businesses such as Google, Trainline and CityMapper, railway staff as well as some Government organisations. The Department for Transport also collects rail data from the industry for reporting and analysis, to support and inform Government decisions and to measure performance against targets across the railway.

Since 2012, the rail industry has opened up large amounts of its core datasets, such as train movement data through the use of Darwin Push Portal, Web Service and Network Rail Open Data feeds. These channels have been used to develop numerous applications that provide richer levels of information to customers on delays, cancellations, alterations, train running, fares, and timetables, leading to more informed and savvy passengers. But, as demand from customers for more informed end to end journey experiences continues to grow, so does the demand for even greater levels of intelligent information sharing.

To demonstrate the industry's commitment to opening-up more data, within the next 12 months, RDG will make available:

1. GPS train data which will provide accurate information on the location of train services, enabling passengers to track train movement;
2. Real-time train centric data, which will provide information on train compositions, seat availability and the status of on-board services and facilities;
3. Granular disruption data, which will provide better information on delays, cancellations and services alterations and;
4. Better information on station facilities.

The opening-up of these datasets could enable the industry and innovators to create more personalised and tailored services for customers, such as intuitive information apps and chatbots that give passengers the information that they need in real-time. It could also lead to the creation of innovative customer information systems on trains and at stations, and open-up the market to those who want to collaborate with the industry to develop products for train maintenance and service operations, potentially leading to cost savings. Further detail on these datasets is set out below.

Through the 'Action Plan for Information on Rail Fares and Ticketing', RDG have already delivered significant benefits to customers by providing better fares and ticketing information. This means that passengers now have better quality information to make more informed purchasing decisions¹¹.

RDG and Network Rail have continued to make more rail data available to third parties for free through their self-sign-up portals. This means that there are now more opportunities for third parties, like start-ups and entrepreneurs, to enter the market and develop new fares, ticketing services and products for passengers.

¹¹ <https://www.raildeliverygroup.com/about-us/publications.html?task=file.download&id=469773782>

In addition to this, RDG has also made a commitment to engage with third parties through Developer Days, events and competitions to ensure that they are aware of the existence of these data sets and to help the industry better understand its data. As indicated in Network Rail's 'Strategic Business Plan', its four main responsibilities are to run a safe, reliable, efficient and growing railway, by attracting, developing and giving opportunities to great people, working together in great teams and they intend to use data more intelligently to achieve this.

Over the years, a lot of rail data has been opened-up and used and we have seen new products and services powered by rail data in the market which have benefitted the travelling public and have helped reduce industry costs.

However there is a demand for more intelligent products which is why it is now essential to focus on the quality of datasets and to encourage the release of new datasets as a means to drive innovation. The Open Data agenda and this Action Plan is the Government's and rail industry's public commitment to improve data access and quality and support economic growth.

The objectives of this Joint Rail Data Action Plan are to improve the **Quality** and **Openness** of rail data, and in doing so it will;

- a. Create an environment that encourages industry to work together to develop innovative solutions which challenge and tackle long-standing issues e.g. Stock and Crew co-ordination, customer information during disruption, efficiently managing maintenance and upgrades on the railway and reducing costs.
- b. Give passengers access to more consistent, coordinated and useful information about their journey, enabling them to make informed choices about their journeys.
- c. Give tech start-ups, Small and Medium Enterprises (SMEs) and developers a platform to collaborate and partner with the industry in order to develop innovative and game-changing web and mobile travel applications for passengers.
- d. Improve data matching and aggregation, enabling end-users such as government, data scientists and the Open-Data community to produce better reports and carry out analysis more accurately and efficiently.
- e. Create an environment which can be used to actively and efficiently manage rail assets reducing failures and minimising delay impact on the passenger.
- f. Put the railway at the forefront of enabling and facilitating Mobility as a Service and Intelligent Mobility.

We will meet these objectives by addressing the barriers that are summarised through **five overarching themes**:

1. Data Transparency,
2. Data Use and Access,
3. Data Quality and Standards,
4. Data Value and Principles,
5. Rail Culture and Information / Data Skills.

These themes were developed through a combination of stakeholder engagement and research undertaken by an external consultancy, CACI.

Theme 1: Data Transparency

We recognise that there is a need to protect data that is commercially sensitive. This has led to general caution from Train Operating Companies (TOC's) on the scale of data being offered to the open data community, despite the potential that it could have to customers and the industry. This has led to TOC's being reluctant to release some rail datasets on the basis that they are deemed commercially sensitive.

Being more transparent in the way we categorise rail data is essential if we are to promote a more collective view on which data can be released. This in turn should encourage further openness.

The lack of clear guidelines, which could help operators distinguish perceived from actual commercially sensitive data, has resulted in significant amounts of datasets being wrongly classified and therefore not made openly available or shared across the industry.

This has resulted in missed opportunities to use data to benefit customers and to improve efficiencies across the railway. The subjectivity of which data is sensitive and which is not can lead to small pockets of innovation rather than innovation taking place across the railway network.

To address this:

- *Rail Delivery Group, Network Rail and Rail Supply Group will work together to consider how best to introduce a clear industry-wide Rail Information Governance Framework that will take commercial concerns into consideration. This will be achieved by June 2019.*

This framework will make the classification of datasets a more transparent process and provide a consistent understanding across the industry on commercially sensitive datasets.

To support this:

- *The Taskforce will be tasked with developing an industry agreed definition of commercially sensitive data by October 2018. The Taskforce will also ensure that the established Rail Information Governance Framework and definition is reflected in the Cyber Security Strategy by October 2018.*

These actions will encourage openness for the greater good of the customer and the industry, by removing subjectivity and creating a shared understanding of commercially sensitive datasets.

Theme 2: Data Use and Access

There is growing evidence suggesting that data can provide significant economic and societal benefits. However, knowledge of the rail data landscape is currently not comprehensive, which means that there is not a full picture of existing datasets. This makes it hard for innovators to access both new and current datasets, limiting their capability to exploit data in an easy way.

There is also limited clarity on the ownership of different rail datasets. An example of this is where some rail organisations do not always have access to their own data due to the age of the systems and applications used by the industry or the commercial contracts that exist with the suppliers of those systems. Consequently, quite often, suppliers charge for modification of their systems in order for rail organisations to access and share the data with third parties. This clearly inhibits innovation. Further, there is an incomplete knowledge of existing rail datasets which is a problem that is exacerbated by the fact that there are so many industry data gatekeepers which can also prevent opportunities for innovation.

In addition to this, we want to have a more coordinated and open approach towards greater data and information sharing within the industry. This will reduce the need for third party contracts to access data that could already be available. It will also enable the industry to better monitor and understand current performance and work towards a joined up railway offering value for money to the customer.

To address this:

- *The Office of Rail and Road will lead a data cataloguing exercise to list rail datasets, information assets and systems, including their owners and licenses pertaining to specific datasets. This will be achieved by November 2018. This action will then sit within the remit of the Industry Taskforce and relevant Rail Delivery Group and Network Rail Boards from December 2018 who will be responsible for ensuring that the catalogue is maintained and kept up-to-date through appropriate delegation.*
- *Each rail entity will take the responsibility to review and negotiate commercial contracts with suppliers who manage and maintain their data or build their internal and external data systems. The Department for Transport will also explore the role that Franchise Agreements have to enable this. This will be achieved by April 2019.*
- *Through the Rail Technical Strategy: Capability Delivery Plan (RTS:CDP)¹² key capability 4; 'more value from data' will explore the feasibility of the use of Application Programming Interfaces (APIs) for sharing data that is time-sensitive*

¹² <https://www.rssb.co.uk/rail-technical-strategy/explore-the-capability-delivery-plan>

amongst other initiatives to allow easier access to industry data during Control Period 6 (2019-2024). This work will begin in April 2019.

To support this:

- *Network Rail and Rail Delivery Group will work with the Rail Safety and Standards Board to simplify the rail industry's Open Data offering by creating a single point of entry for Rail Delivery Group's and Network Rail's Open Data Portals. This portal will be introduced in September 2019.*

These actions will help provide better knowledge and understanding of the data landscape; which will be useful for industry and new entrants to use and access data more efficiently. It will ensure that the appropriate licensing conditions are being signed off, enabling rail entities to share their data without additional costs or approval from suppliers.

In addition to these actions, the Department for Transport is also exploring the benefit of setting out a policy to share data across the industry. We assume that this could remove barriers around ownership and sensitivities resulting in greater data release by removing the current 'gate-keepers'.

Theme 3: Data Quality and Standards

The majority of rail datasets are published without formal standards or Service Level Agreements, which means that the timeliness and quality of data can vary greatly. Consequently, variances in the way that datasets are referenced is quite often a barrier to SMEs who may wish to innovate and operate within the rail landscape. For example, coding for railway stations can vary, depending on the system that is being used and as a result, stations can be referenced by several unique identifiers. This is clearly very confusing to new entrants to the industry and limits the opportunity for scaling-up their business.

The use of some data formats e.g. PDF, also present issues with use and accessibility. Additionally, the industry is unclear on which rail data publishing standards should be adopted, particularly in relation to standards that support multi-modal journey planning. The industry is littered with legacy rail systems which are locked down, due to the age, functionality or costs associated with suppliers updating systems to export data files. The lack of meta-data use also means that the condition of the data is unknown to end-users and reliability cannot be guaranteed.

To address this:

- *The Taskforce and Data and Information Systems Interface Committee will work together to create a method of defining metadata alongside all open datasets to help data end-users assess the condition of the data before use. This will be completed by October 2019. In addition to this each rail organisation that publishes data will create feedback mechanisms to help ensure that data is continuously improving by September 2018.*
- *The Taskforce and Data and Information Systems Interface Committee will work together to develop a common data model and architecture for the UK railway, this will be achieved by April 2020. As detailed above, creating a single point of*

entry to access Network Rail's and RDG's open data feeds will also help to ensure that rail datasets have one version and are not duplicated which will increase their quality.

To support this:

- *The Government will consider how to implement rail data standards, which will be aligned with the wider transport Open Data agenda. Data standards should be helpful when developing applications and services for multi-modal transportation and intelligent mobility, as it will allow data to be easily manipulated and aggregated. It will also remove barriers to entry and will help drive compliance and best practice. This will be achieved by June 2019.*

Theme 4: Data Value and Principles

Recent analysis indicates that big data is key to supporting economic growth and could benefit our economy by up to £241 billion between 2015 and 2020.¹³ Transport for London (TfL) has estimated the value of its Open Data to be up to £130m in annual economic benefits and savings for travellers in London and for TfL itself.¹⁴

A more liberal approach to opening up rail data will drive significant opportunities to deliver efficiencies within the rail network. However, there is little research to quantify the benefits that data being made openly available brings. Associated costs of providing data often overlook its value, which has led to a resistance to looking into future funding to release more data. Consequently, the industry continues to remain closed and uncoordinated with missed opportunities to improve efficiency and reduce cost.

To address this:

- *Government will work with rail stakeholders to develop an Open Data Business Case to provide an understanding of the benefits of rail data, to be used as supporting evidence to release more data. In addition to this, we will work with industry to develop a financial vehicle to incentivise TOCs to release data. This will be achieved by July 2019.*
- *Each rail organisation will appoint an open data champion, who will be responsible for ensuring that IT and business change projects have fully explored open data outputs. The open data champion will also be responsible for increasing awareness and the benefits of Open Data across their organisation. This will be in place by November 2018.*

¹³ https://www.sas.com/content/dam/SAS/en_gb/doc/analystreport/cebr-value-of-big-data.pdf

¹⁴ <http://content.tfl.gov.uk/deloitte-report-tfl-open-data.pdf>

Theme 5: Rail Culture and Information/Data Skills

The perceived closed nature of the railway industry has limited the amount of collaboration with external parties and innovators. As a consequence potential external partners have tended to lean towards other sectors where there is more of an appetite for openness. There is also a need to tackle data and information exploitation skills gap in the rail industry, such as data architects, scientists and analysts, to help ensure that there are adequate skills across the industry to help deliver more Open Data.

We want to encourage greater collaboration with innovators and open the market to new entrants, in a way that allows them to start, and scale up, businesses and create new products and services. This is important for driving competition, which will help to grow the economy.

To address this:

- *Government is identifying the skills shortage on a yearly basis through the skills intelligence model. In addition to this, the Government will work with the Institute for Apprenticeships, Tech Partnership and the National Skills Academy for Rail (NSAR) and industry stakeholders in order to develop options to address the skill shortage.*
- *The industry will also continue to work with academia to explore and leverage early talent and skills. They will also review their skills/ development offering to current employees, particularly for those working with data and technology.*

Attracting the right skills and talent will result in further data release and increased productivity.

In addition to this:

- *The Department for Transport is harnessing the wider innovation and technical capability of start-ups, SMEs and developers from leading sectors such as automotive and aerospace. By bringing together a coordinated network of Rail Innovation Accelerators and Tech Hubs from across the country we will break down the barriers to the acceleration of rail innovation, attract new private sector investment and strengthen the innovation capability of the rail supply chain. This initiative will be launched in August 2018.*

6. Next Steps and Ongoing Engagement:

The Government and the rail industry have made a commitment to the transparency agenda and publishing this Joint Rail Data Action Plan is just the beginning.

We have established an Industry Taskforce to monitor and drive progress and, going forward, the Government will work with rail stakeholders, including this new Industry Taskforce, to ensure that actions are completed against the timescales outlined below. As the rail market changes and develops, where necessary, we will refine existing actions. In 2019, the Rail Delivery Group will publish a report detailing the actions achieved and next steps. The Department for Transport will also continue to develop plans to improve Open Data across the transport sector and will report on these in due course.

As part of this Joint Rail Data Action Plan, the Department for Transport is working with the Rail Delivery Group, Network Rail and Rail Safety and Standards Board to host an innovation event called the Rail Data Challenge.

The Rail Data Challenge is an open invitation for innovators, developers and tech experts to develop new technologies to address three current rail challenges using new and existing datasets.

Challenge winners will get the opportunity to pitch for funding from industry and private investors to demonstrate their solution into rail. This competition will take place from 16 August and will conclude with a Demo Day on 15 October.

If you are interested in participating, please contact Acceleratornetwork@dft.gov.uk for more information.

This event will:

1. Demonstrate the rail industry's commitment to work with those who have the necessary skills to innovate and come up with ground breaking solutions to long-standing industry problems.
2. Introduce innovation into rail at an accelerated pace.
3. Help to identify data gaps which will be included as future data releases.

7. Rail Industry Commitment on Future Data Releases

'The Rail Delivery Group, and its members are committing to the delivery of a better experience for all customers, and to have a railway which has the customer at the heart of every interaction. Their responsibility to deliver the actions detailed in this plan demonstrates this and have made further commitments to continue to make progress towards building the tools and frameworks needed to provide consistent and relevant travelling experiences making it great for Britain, the Industry and customers'.

'Successful delivery will require a strong combination of data utilisation, innovation, barrier-eradication and leadership. Importantly, this comprehensive approach cannot be achieved by the Industry alone; success will require the sector to come together with new and non-traditional SMEs to deliver change at pace. This is not a standing start for the RDG, we have already taken some significant steps in this direction.

- Jaqueline Starr, Director, Rail Delivery Group

ANNEX A: List of RDG's Future Data Releases

Date of Release	Name of Dataset	Description
Autumn 2018	Darwin4Trains service	A new feed that provides developers with a train centric version of the Darwin feed. It is designed for providing information to customers on board a train.
2018/19	TLMS (train movement service)- Customer Information GPS data	GPS information linked to a train given pin point accurate location data and arrival time prediction.
2018/19	CTI Connecting Train Identifier	Publishing data about the physical carriages making up a train, allowing specific information about facilities to be related to a service. Future versions will describe how many carriages a particular train has, to help passengers know where to stand on the platform and how busy it is likely be, as well as precise information on any delays being experienced. Data will also be made available to follow each train's movements on a map, as well as information on which train service is being run by which particular train.
April 2019	Route service indicator	A data feed that will provide an indicator of the service and scale of any disruption between any two points on the Network.

ANNEX B

Joint Rail Data Action Plan – Action Plan Summary

Theme 1	Data Transparency		
Action no.	Action	Action Lead and Actors	Timescale
1.	Set-up the Industry Taskforce.	RDG	July 2018
2.	Delegate the responsibility to an existing group to consider how to develop and introduce a clear industry-wide Rail Information Governance Framework to enable the objective categorising of rail datasets.	RDG, Network Rail and the Information Commissioners Office.	October 2018
3.	Develop and introduce a clear industry-wide Rail Information Governance Framework to enable the objective categorising of rail datasets.	RDG, Network Rail and the Information Commissioners Office	June 2019
4.	Task relevant committee to develop an industry agreed definition of commercially sensitive data.	Taskforce	October 2018
5.	Require the taskforce to ensure that the transparency framework i.e. the Rail Information Governance Framework is part of the industries Cyber Security Strategy.	RDG and Network Rail	October 2018
6.	Develop a framework for an Open Data public scorecard to measure how the industry is delivering against its commitment to transparency and Open Data. This will be updated and maintained by the industry.	DfT	March 2019

Theme 2		Data Use and Access	
Action no.	Action	Action Lead and Actors	Timescale
7.	Lead on the development of a data catalogue, containing information on rail datasets, information assets and systems including data owners and licences pertaining to specific datasets.	ORR	November 2018
8.	Publish, maintain and update Open Data Catalogue.	ORR, RDG, Network Rail and RSSB	December 2019
9.	<p>Ensure data ownership is clearly determined when contracts are being arranged to stop data being locked into third party applications.</p> <p>Each rail entity will take the responsibility to review and negotiate commercial contracts with suppliers that manage and maintain their datasets or build their internal and external data systems to agree who the data owners are. This should be reflected in supplier contracts</p> <p>DfT will also explore the feasibility of reflecting this in Franchise Agreements.</p>	All, DfT	April 2019
10.	Ensure research and innovation projects feed data back into the rail ecosystem.	All	September 2018
11.	Explore the feasibility of using Application Programming Interfaces for sharing time-sensitive data.	Rail Technical Strategy	April 2019
12.	Run feasibility study of using Application Programming Interfaces for sharing time-sensitive data.	Rail Technical Strategy , RDG and Network Rail	September 2019
13.	Simplify the rail industry's Open Data by creating a single point of entry to access Rail Delivery Group's and	RDG, Network Rail and RSSB	September 2019

	Network Rail's Open Data feeds.		
Theme 3	Data Quality and Standards		
Action no.	Action	Action Lead and Actors	Timescale
14.	Develop a common data model and architecture for the UK railway, and consolidate NR and RDG Open Data platforms.	Taskforce and Data and Information Systems Interface Committee	April 2020
15.	Develop a method of defining meta-data and create and publish meta-data alongside all datasets to help data end-users assess the condition of the data prior to use.	Taskforce and Data and Information Systems and Interface Committee	October 2019
16.	Feedback mechanisms will be put in place to ensure data is continuously improving.	RDG, Network Rail, ORR	September 2018
17.	The development of a handbook of references to different things e.g. stations and services on the railway.	RDG	December 2018
18.	Explore the feasibility of implementing rail data publishing standards to support multi-modal journey planning.	DfT, RSSB	June 2019
Theme 4	Data Value and Principles		
Action no.	Action	Action Lead and Actors	Timescale
19.	Develop a Rail Open Data Business Case to aid data release, and develop a financial vehicle to incentivise TOCs to release data.	DfT	July 2019
20.	Explore the feasibility, costs, benefits and consequences of including Open Data policy requirements and principles within Franchise Agreements and ORR licencing conditions.	DfT, ORR	March 2019

21.	Identify relevant data board/committee for the rail industry to discuss open data.	RDG	September 2018
22.	Each organisation will appoint an Open Data Champion to help ensure that Open Data Principles are considered for all new IT and research projects.	All	November 2018
Theme 5	Rail Culture and Information Skills		
Action no.	Action	Action Lead and Actors	Timescale
23.	Explore the shortage of information and data exploitation skills in rail.	DfT, Taskforce and the Rail HR Directors Group.	March 2019
24.	Work with skills supply chain to amend the current data analyst apprenticeship standard to include the required skills needed to work with data and technology in rail.	DfT, RDG and Network Rail	March 2019
25.	Explore the need to create a new apprenticeship that will include open data, information governance, Cyber Security and technology skills.	DfT, RDG and Network Rail	December 2018
26.	The industry to create an awareness of the opportunities and benefits that can be exploited by the evolving data management and data science advance.	All	January 2019
27.	Explore and implement plans to deliver the required training needed to upskill current employees who work with data/information.	All	December 2019
28.	Introduce project to break down the barriers to the acceleration of rail innovation, to attract new private sector investment and to strengthen the innovation capability of the rail supply chain.	DfT	August 2018
29.	Launch project to break down the barriers to the	DfT	April 2019

	acceleration of rail innovation, to attract new private sector investment and to strengthen the innovation capability of the rail supply chain.		
30.	Review current procurement frameworks to make it easier to work with start-ups and developers.	All	December 2018