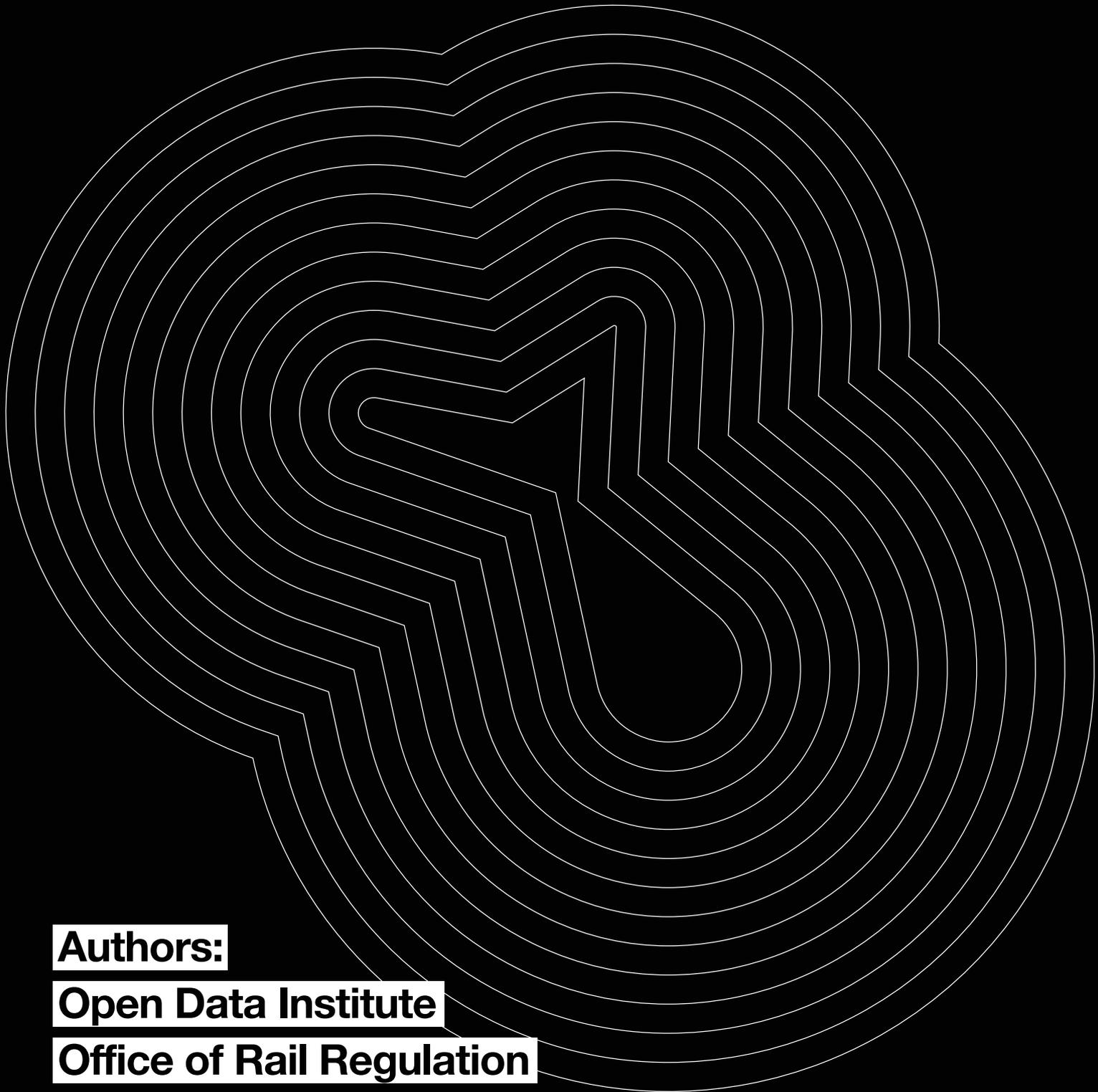


OFFICE OF RAIL REGULATION

A large, stylized graphic in the background consisting of multiple concentric, wavy lines that resemble a fingerprint or a complex maze, rendered in white on a black background.

# Improving access to rail information for disabled passengers



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## Introduction

On 8 October 2014, a cross-sector workshop was held at the Open Data Institute. Its aim was to explore with key stakeholders the opportunities that open data provides, to inform the development and provision of better disabled access to the UK rail network.

The workshop aimed to:

- Identify the challenges faced by disabled people when travelling by rail
- Identify which datasets would need to be open to improve disabled access, and understand what is required for them to be published
- Examine the delivery of information provided by Network Rail and train operators and how it can be improved, particularly in times of disruption
- Examine how datasets can be better integrated for maximum (re)use, such as Passenger Assist and Darwin

The following report is based on the outcomes of the workshop. Held under Chatham House Rule, attendees are not mentioned by name against specific ideas or statements.

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## In attendance

Alison Smith, Pesky People

Andrew Piper, Transport for London Independent Disability Advisory Group

Anna Walker, The Office of Rail Regulation (ORR)

Annette Egginton, ORR

David Tarrant, ODI

Jonathan Raper, Transport API

Kathryn Corrick, ODI

Kirsty Ivanoski-Nichol, Network Rail, Transparency, Ethics & Data Protection

Lauren Smiddy, Department for Transport, Access for All Programme

Lindsay Bleakley, National Rail Enquiries

Maria Mlynarska, The Association of Train Operating Companies

Michael Gray, Abellio

Olav Ernstzen, Transport for London Independent Disability Advisory Group

Richard Emmott, ORR

Richard Evans, Go-Ahead

Richard Poxton, Foundation for People with Learning Disabilities

Richard West, Foundation for People with Learning Disabilities

Tom Cairns, RailMiles

## About the Office of Rail Regulation and the Open Data Institute

The Office of Rail Regulation (ORR) is the independent safety and economic regulator for Britain's railways, and is responsible for making sure that train and station operators have policies and practices in place that protect the interests of older and disabled passengers.

The Open Data Institute (ODI) is catalysing the evolution of open data culture to create economic, environmental and social value. It helps foster supply, generates demand, creates and disseminates knowledge to address local and global issues.

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## Summary

There are about 11 million people living in the UK with a limiting long-term illness, impairment or disability.<sup>1</sup> Between them, they have a collective spending power of an estimated £80bn per year.<sup>2</sup> Given that 1 in 5 people now use data-driven services and applications in the UK, there is great potential to increase revenue and passenger satisfaction through providing access to rail data openly, so that useful applications can be built around them.

Around a fifth of disabled people report having difficulties related to their impairment or disability in accessing transport.<sup>3</sup> Having open access to key datasets would help increase the usability of train services, not only for those with disabilities but for all passengers.

During the course of the workshop, attendees voted for three key situations they would like to see data-driven solutions for: **communicating information in the right way at the right time, real-time change notification** and **getting from A-B in the most accessible way**.

Once disabled passengers have embarked on their journey, there is a real need for a consistent experience across the whole transport network in terms of how they can access information. Unlocking facilities data as well as real-time data will enable developers to build key applications that can solve this problem and be customised to each user's needs.<sup>4</sup>

Clear evidence of the potential for these types of service has already been strongly demonstrated with the award-winning Station Master application,<sup>5</sup> which features comprehensive 3D maps that show steps, lift access and ticket points of London Underground stations. Another potential solution suggested in the workshop would be to integrate Passenger Assistance<sup>6</sup> into ticketing and other systems, so that customers could maintain an online profile, saving the difficult and time-consuming need to re-enter data, or make a separate telephone call.

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1 Family Resources Survey 2011/12: [www.gov.uk/government/statistics/family-resources-survey-201112](http://www.gov.uk/government/statistics/family-resources-survey-201112)

2 Business Disability Forum: [www.businessdisabilityforum.org.uk/customer-experience/the-evidence](http://www.businessdisabilityforum.org.uk/customer-experience/the-evidence)

3 ONS Opinions Survey 2011: [www.gov.uk/government/publications/disability-facts-and-figures/disability-facts-and-figures](http://www.gov.uk/government/publications/disability-facts-and-figures/disability-facts-and-figures)

4 Making data 'open' is even better than making it available to data suppliers, because if data is open, consumers can access it without conducting separate license negotiations with different data suppliers.

5 Station Master App website: [www.stationmasterapp.com](http://www.stationmasterapp.com)

6 Passenger Assistance website: [www.disability-onboard.co.uk/passenger-assistance](http://www.disability-onboard.co.uk/passenger-assistance)

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The key recommendations for rail companies and application developers are:

**Recognise the potential value in disabled customers**, and improve engagement with disabled people, who make up a substantial market.

**Make rail services and information accessible for all groups**, not just disabled people.

**Open more data, and offer incentives to developers** who can help fill gaps in services with applications.

**Ask people with disabilities what they need**, so services and applications are fit for purpose.

**Collaborate on ventures**, so that the rail industry and developers can compliment each other and work towards a common goal.

There is a growing need to cater for a large demand from diverse communities, from disabled people to tourists. The UK has an opportunity to provide valuable new services to passengers that make travel by train a much easier, more pleasurable experience for everyone.

*Office of Rail Regulation & Open Data Institute*

## What is open data, and how can it improve transport services?

Open data is non-personal data that is made available by organisations, businesses and individuals for anyone to access, use and share. Open data has to have a licence that says it is open data. Without a licence, the data can't be reused.<sup>7</sup>

When transport data is made available, it can be used to make applications that help people plan their journeys and get from A to B in the most efficient way possible. For example, data made available by Transport for London, Google, Apple, Foursquare, OpenStreetMaps, Cyclestreets and Forecast.io is used by the travel app CityMapper to help people plan their journeys better. This rich choice enables consumers to pick solutions that suit their lifestyles or more specific needs.<sup>8</sup>

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7 Find out more about open data at [theodi.org/what-is-open-data](http://theodi.org/what-is-open-data)

8 Making data 'open' is even better than making it available to data suppliers as these groups have, because if data

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## Disabled people in the UK

There are broadly three types of disabilities: sensory impairment, physical impairment and cognitive impairment. The data that exists on disability in the UK gives us an indication of its scale but it is important to note that this data largely does not account for dual disabilities, or those who are not registered as disabled but who do have impairments that reasonably require assistance.

There are approximately 9.4 million disabled people in England, accounting for 18% of the population.<sup>9</sup> Mobility impairments are significant but less than 8% of disabled people use wheelchairs.<sup>10</sup>

The majority of impairments are not visible. About 3.5 million people of working age (16–65 years) are deaf or hard of hearing, and 160,000 of these are severely or profoundly deaf.<sup>11</sup> There are about 1.86 million people in the UK with sight loss and this number is predicted to rise to over 2 million by 2020 and 4 million by 2050.<sup>12</sup> About 1 million people in England have a learning disability.<sup>13</sup>

## Transport challenges for people with disabilities

The many logistical challenges that come with rail travel can be particularly profound for people with physical or cognitive impairments. Platforms can be difficult to negotiate and announcements can be hard to see or hear.

The information that is made available is often inaccessible for those with disabilities or learning difficulties. Printed materials are poorly distributed, audio announcements may be inconsistent and poorly articulated and digital information can be difficult to read. The technical terminology

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is open, consumers can access it without conducting separate license negotiations with different data suppliers.

9 Census for England and Wales, 2011

10 Papworth Trust disability facts and figures, 2010

11 Action On Hearing Loss: RNID

12 RNIB Sight Loss UK 2012 report

13 Public Health England: People with Learning Disabilities in England 2012

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often used in signs or announcements like “alight” or “de-train” can be hard to understand for those with learning difficulties.

When disruptions happen to train journeys, it can be all the more difficult for those with disabilities to become aware of the nature of the disruption and alter their journeys accordingly.

In emergency situations, it is disproportionately stressful for those with disabilities, who can find it difficult to make themselves known to rail staff or emergency services, hear or see announcements and physically move themselves away from harm.

Those with impairments generally want to be able to use rail services like any other passengers, and take the route that suits them best. This means having access to information about arrival, departure times and disruptions at all stages of their journeys and being able to inform rail staff of their needs, when required, so they can be met.

## **The state of current UK rail services for disabled people**

All rail operators have a Disabled People’s Protection Policy, under which they must produce a booklet called “Making rail accessible: Helping older and disabled people”. These are available from stations and the websites of individual operators and explain what assistance disabled people can expect to help them when travelling by train.

The main service provided by train companies for disabled people is called Passenger Assist, which customers can book ahead of travelling for help with their journey.

Passenger Assist can help with planning, access and, where possible, seat reservation. Each rail company operates its own Passenger Assist system and their quality is variable. Evidence suggests that the system works best for simple journeys that only involve one train company.

The system works less well when complicated interchanges are needed or when services are disrupted. A survey conducted by the ORR suggests that user satisfaction with Passenger Assist is reasonably strong but awareness of it is low. There is little data on take-up rates but it is likely that Passenger Assist is only used, or needed, by a small minority of disabled people.

Passenger Assist does not provide accessible, real-time information about disruptions to rail journeys, nor does it give access to information on the accessibility of individual stations or trains. It also, by its very nature, does not deal with ad hoc requests for assistance.

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Official rail information is generally shared with rail customers either via spoken announcements over a tannoy or visibly on display boards. This is not accessible to people with visual or hearing impairments, and a lack of consistency across stations means that disabled customers may have to acclimatise to a new system at each stop.

As one workshop attendee said, *“As a traveller I want information to be interoperable, and not get to a destination and reach a border post because I have to learn a new language. If different operators have different ways of displaying things, I have to learn how to understand each of them as I go. Information is dead until I have access to it, if barriers are put up to access then investment is wasted.”*

## How can data help improve services for disabled people?

Developers can create applications that turn data about train times, accessibility and facilities at stations into information that is easy to access and understand for disabled people. But solutions like this depend on data that exists being up-to-date and open for others to reuse.

There are many existing applications that are useful for people with disabilities to help plan their journeys.

**Twitter** can be useful source of real-time data, providing rail operators have an official account which they update regularly.

**Station Master**, which won the Transport for London 2013 accessibility app contest, features comprehensive 3D maps that show steps, lift access and ticket points of London Underground stations.<sup>14</sup>

**RailPoint** provides passengers with live travel updates, planned improvement works, timetables and other key travel information with hardware, like screens in stations, and software, like remote content management.<sup>15</sup>

**Realtime Trains**, run by swlines Ltd, takes data from a variety of sources to help users track their trains and find their platforms in advance for train journeys across the UK.<sup>16</sup>

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14 Station Master App website: [www.stationmasterapp.com](http://www.stationmasterapp.com)

15 Railpoint website: [www.railpoint.co.uk](http://www.railpoint.co.uk)

16 Realtime Trains website: [www.realtimetrains.co.uk](http://www.realtimetrains.co.uk)

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## What holds data-driven solutions to rail accessibility back?

There are many challenges that face developers who work on rail transport applications.

They rely on data that can be inaccurate. Train running data is mainly processed automatically from trains as they move around the national network. However, some areas do not report automatically, and so rely on control rooms or signallers to enter data manually.

There is currently no truly open, unrestricted source of real-time train data, and some of the workshop participants shared concerns that the data feeds that do exist are expensive and have restrictive licensing conditions. Darwin is the platform that feeds all of the National Rail Enquiries real-time services, and one participant suggested that it had restrictive conditions on access and reuse of its data.<sup>17</sup>

While being accessible from the National Rail Enquiries website, data about rail stations, their facilities and accessible infrastructure – used for the ‘Stations Made Easy’ application<sup>18</sup> – is not open or dynamic, and there is no process for keeping it up-to-date.

Applications also take time and cost money to develop, which can be difficult for developers to find. And, cost and access issues aside, using new data sources can be political, with some rail industry bodies at odds with each other.

Another important factor that limits how effective digital solutions are is that disabled people tend to be economically disadvantaged, so many won’t have access to the applications designed for them, either because the applications themselves cost money or because the devices that run the applications are outside their spending power.

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17 In response to a 2012 ORR consultation on the cost and restrictions of Darwin data feeds from National Rail Enquiries (NREs), NREs introduced a new process for data users in April, 2014, which it sees as being based on an adapted Open Government Licence. This removes charges for public sector users and retains them only for high volume suppliers. ORR remains concerned that the NREs licence prohibits the production of alternative prediction services to Darwin and notes that the TfL licence process does not include this. ORR is in discussions with NREs and the Rail Delivery Group to see if the condition might be amended.

18 See [www.disabledpersons-railcard.co.uk/stations-made-easy](http://www.disabledpersons-railcard.co.uk/stations-made-easy)

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## Where do solutions need to be found?

With these challenges in mind, attendees at the workshop voted on three key situations they would like to see data-driven solutions for.

### **1. Communicating information in the right way at the right time: Passenger Assist data integration**

In order to get the most up-to-date information, disabled passengers should be able to book Passenger Assist at the same time as the tickets for their train journeys, ideally through a centrally-administered scheme for the whole industry. If an application existed to do this, or if the service was integrated into existing ticketing systems, passengers could personalise it so they could receive push notifications about alerts or updates according to their needs. This could also be used by rail staff to track passengers, their routes and requirements, and remember them next time they bought a ticket. This would require major changes to working practices across the rail industry and the system would need to be integrated into all rail information and management systems.

### **2. Real-time change notification**

People with disabilities need to know when and how their journeys will change due to delayed or cancelled trains. In order to decide on a back-up plan, train change notifications need to be easy to access and read or hear in a short time. This information is not valuable unless it is integrated, because disruption occurs across different lines and systems. Systems would need to open up their data and ensure it was up-to-date and standardised for developers to use in applications. Alternatively, they could produce the information themselves on online platforms like Twitter, and offline platforms like visual or audio announcements or specialist support staff at stations.

### **3. Getting from A to B in the most accessible way for me**

Workshop attendees planned a hypothetical trip, from Bedford to Canterbury, to expose the different ways in which their journeys need to be planned and supported. The train journey has one change and two possible routes, so a disabled passenger would need to know where the changes were, the distances they needed to walk and how long it would take. They would also need to know what condition the stations were in, what facilities they had and again whether and how there were disruptions to their journeys. Data on these areas exists, but it needs to be made open and collated into an accessible service that fits as many needs as possible.

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## Recommendations for rail companies and application developers

### 1. Recognise the potential value in disabled customers

Improving services for customers with disabilities has benefits that extend far beyond rail company reputations. People with disabilities make up a substantial market, which, if engaged properly, could offer rail companies a significant potential revenue stream. Rail companies must improve their engagement with and services for the marketplaces they do not reach, in this case disabled people who are not predisposed to using trains. If they offer a better service, they will attract more growth.

### 2. Make rail services and information accessible for all groups, not just disabled people

It should be a priority of all rail companies and stations to guide people through busy routes as quickly as possible, so updates and information should be easy to see or hear for everyone.

### 3. Open more data, and offer incentives to developers who can help fill gaps in services with applications

Opening more data is a positive step towards finding solutions to grant better access to the railways for disabled customers. Once data is open, startups and developers hold huge potential to use it for building applications that improve understanding of and access to services.

There is a large, untapped community of coders and programmers who are also train enthusiasts and care about the British rail network. Applications like Station Master and Realtime Trains have been developed in people's spare time, driven by a passion to solve a real-world problem for little return. Having this type of community available is rare and it would be beneficial for the rail industry to engage and work more closely with it.

Competitions and financial prizes work well, especially as product development is expensive, but the market reach and press coverage that come with being recognised by an official platform also attracts developers and helps to grow the community further.

### 4. Ask people with disabilities what they need

It is crucial to scope the usefulness of services and information applications with their intended users at early stages of development. This ensures they are fit for purpose and prevents time and resources from being wasted on an application that is not useful or sustainable.

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## 5. Collaborate on ventures

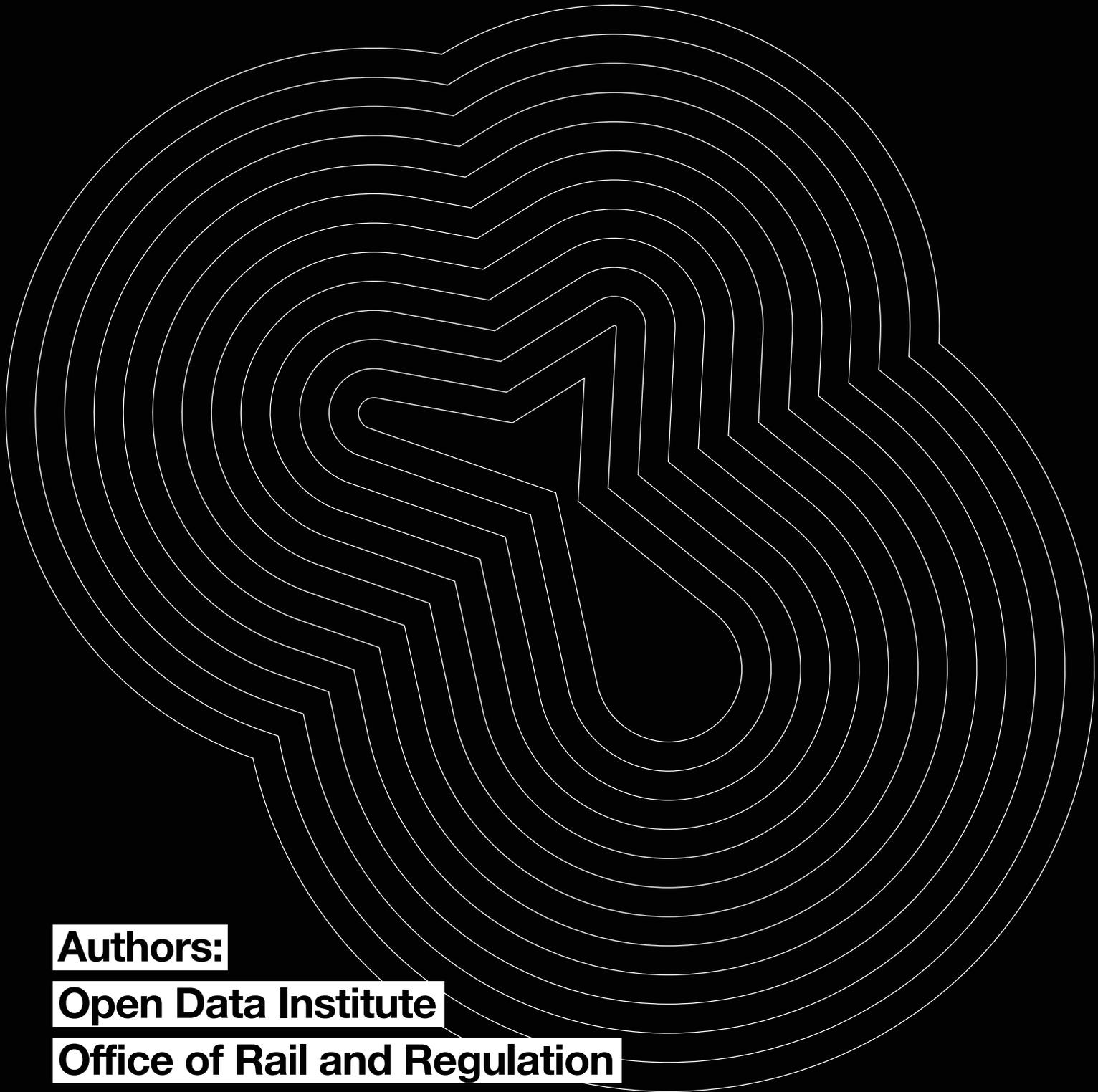
A joint venture between independent developers and the rail industry would help both move towards a common objective. This would facilitate a joint understanding of what is required of each group, what data is needed and how to keep it of a high quality in a sustainable way.

### Next steps

The ORR-ODI workshop identified a significant market and demand for better access to the railways for disabled passengers. The workshop highlighted a wealth of information, ideas and willing organisations that could help to use data to improve travel by rail. It also showed that much of this thinking is currently fragmented and disparate – but demonstrated the great potential of collaboration when passengers, developers and industry leads are brought together to jointly consider solutions with a common aim.

Now these ideas need to be turned into action. Products need to be developed that have a positive impact for disabled passengers. Next year, ORR will propose a ‘hackathon’ event. The aim of the event would be to harness passenger insights, technological expertise and industry knowledge to develop real solutions, with the best results promoted across the rail industry.

ORR would value the feedback of developers and disabled groups before it starts planning the event. Any comments, suggestions or expressions of interest are welcome and can be sent to [andrew.winstone@orr.gsi.gov.uk](mailto:andrew.winstone@orr.gsi.gov.uk).



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