

Open Rail Data: Two Years On

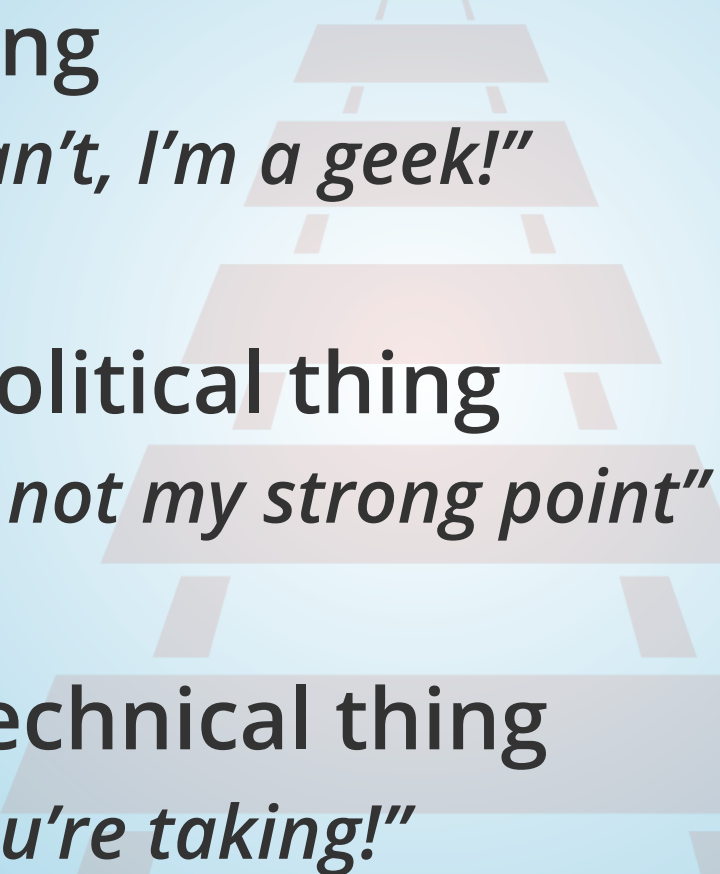
Peter Hicks / @poggs

OpenTech, London – May 2013

History

- TfL released public Tracknet API in December 2010
- No permissively licensed API for National Rail data existed
- I wanted the flexibility to innovate and experiment with National Rail data

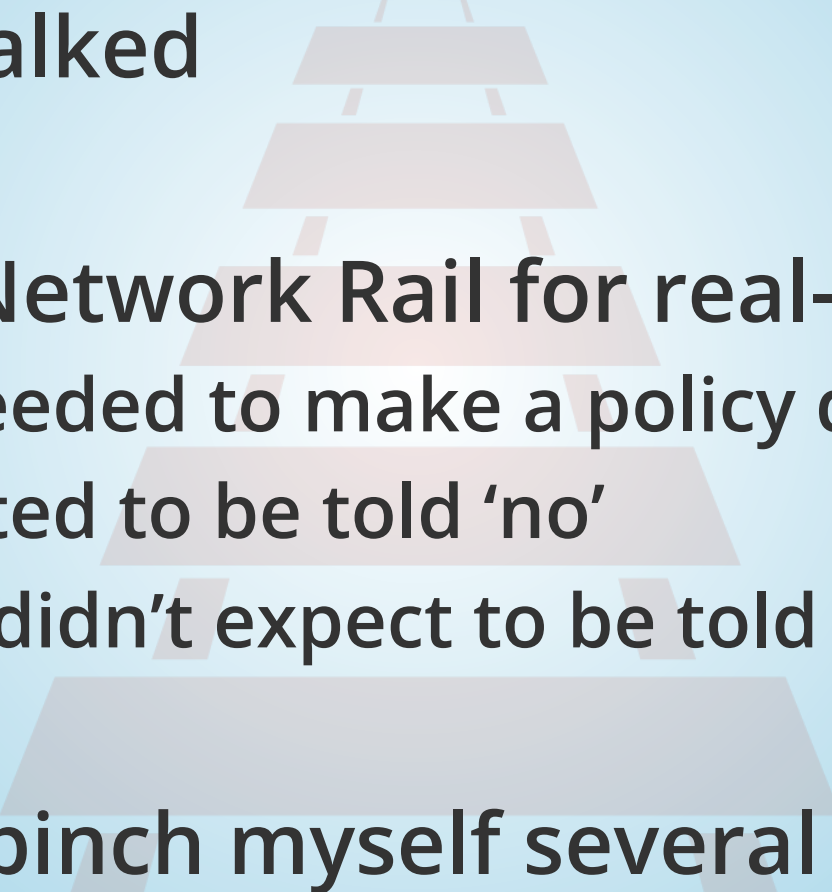
“What can I do?”

- Do nothing
 - *“but I can’t, I’m a geek!”*
 - Do the political thing
 - *“but it’s not my strong point”*
 - Do the technical thing
 - *“now you’re taking!”*
- 

What did I do?

- Read “10 Rules for Radicals”
- Researched the problem thoroughly
- Talked to other people
- Started working on a solution
- Presented it at OpenTech 2011

What happened afterwards?

- People talked
 - I asked Network Rail for real-time data
 - They needed to make a policy decision
 - I expected to be told 'no'
 - I really didn't expect to be told 'yes'
 - I had to pinch myself several times
- 

What happened afterwards?

- I acquired a lot of technical knowledge
- Data was discussed at the DfT Transport Sector Transparency Board
 - Network Rail were asked to open up their data to everyone from 2012
- Discovery: Grins are measured in metres



THE DATA FEEDS PLATFORM

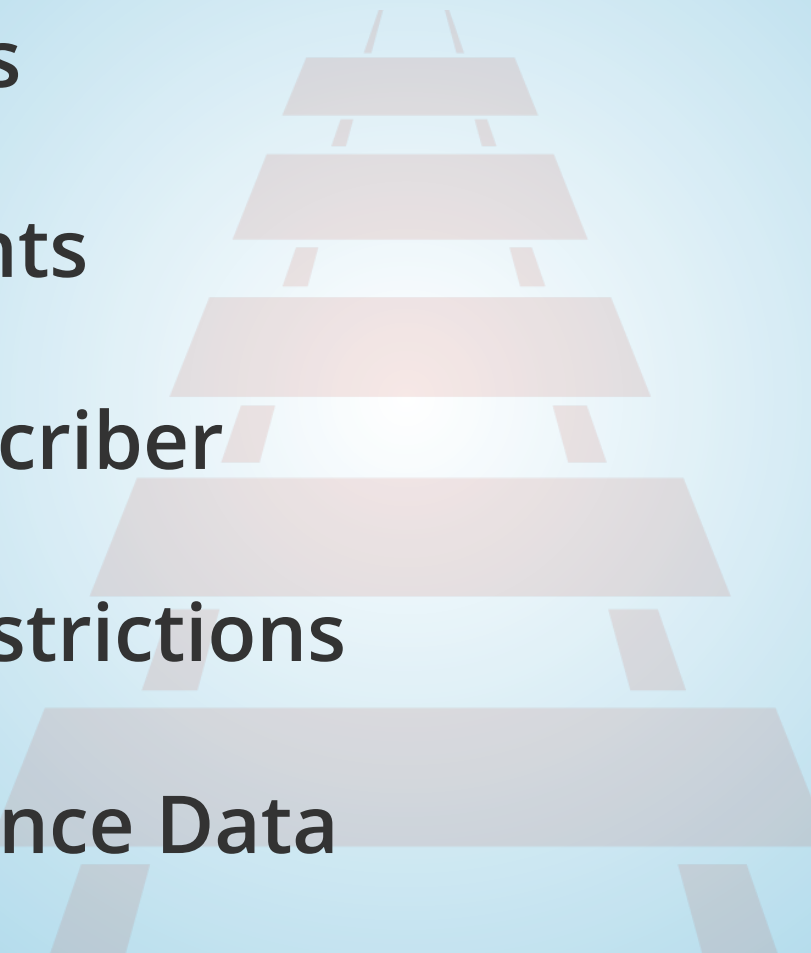
The Data Feeds Platform


- Built by Rockshore in a few weeks
- Released in July 2012
- Several hundred active users
- Several million messages per day

The Data Feeds Platform

- <https://datafeeds.networkrail.co.uk>
 - Liberal licence
 - Self-service interface
- <http://nrodwiki.rockshore.net/>
 - Community-written documentation
- openraildata-talk@googlegroups.com
 - Community support

The Data Feeds Platform

- Schedules
 - Movements
 - Train Describer
 - Speed Restrictions
 - Performance Data
- 



**WHAT CAN YOU DO WITH ALL
THIS DATA?**



1U33 2035 Gatwick Airport to London Victoria Operated by Gatwick Express

Functions ▾

1 1st and Standard Class seats

At-seat trolley service available

• WTT schedule from ITPS

• Timings based on an EMU at 100 mph

Location	WTT		GBTT		Path	Pfm	Line	Allowances
	Arr	Dep	Arr	Dep				
Gatwick Airport		20:35		20:35		2	SL	
Earlswood (Surrey)	PASS	20:40½					QL	
Stoats Nest Junction	PASS	20:47					FL	
Purley	PASS	20:47½				1		
East Croydon	PASS	20:50				1		
Windmill Bridge Junction	PASS	20:51					FL	
Selhurst	PASS	20:51½				4		
Streatham North Junction	PASS	20:54½						
Balham	PASS	20:56½				4		Path: 1 min
Clapham Junction	PASS	20:59½				12	FL	
London Victoria	21:05		21:05			13		

Detailed train schedules

- Train reporting numbers
- Passing points and times
- Public vs Working Timetable times



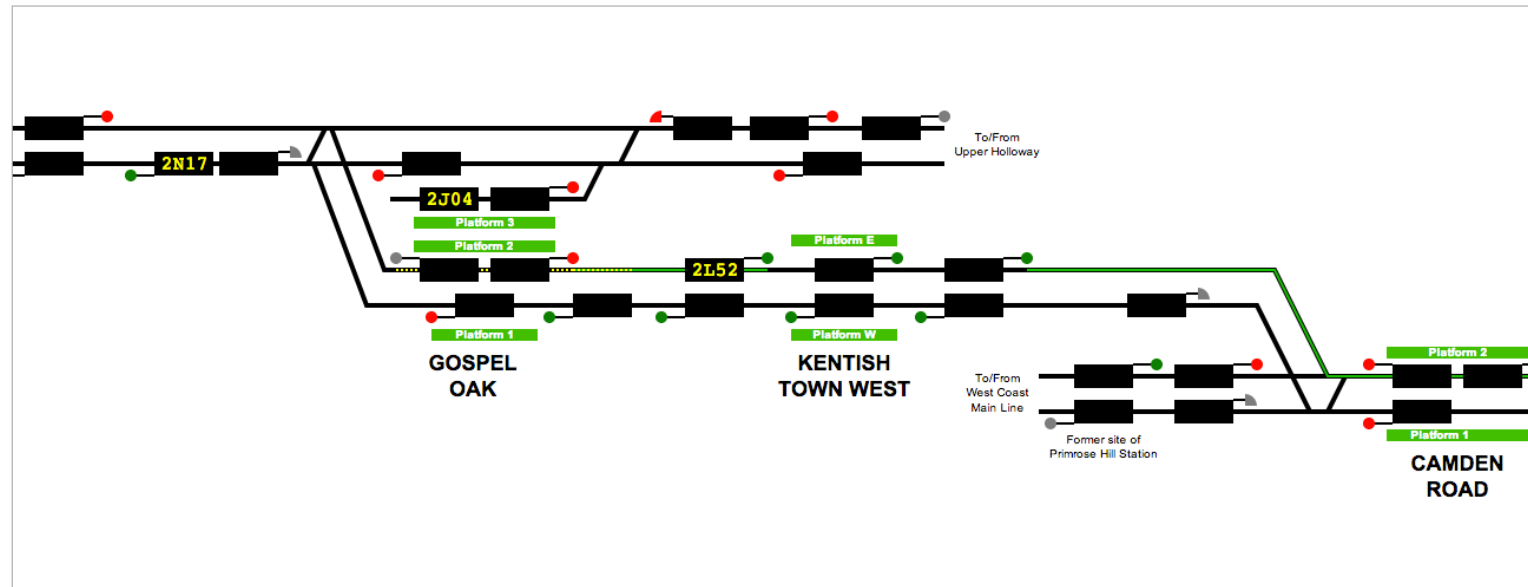
Acton Wells Junction - Stratford

✓ Connected

⌚ Last updated at 9:02:50 AM

👤 1 viewer(s)

🔗 Help



Trains

- 2L52
- 2N17
- 2N12
- 2N15
- 5Y11
- 2Y13
- 412E
- 2N10
- 2N21
- 2N08
- 2N77
- 2N64
- 2Y09
- 2Y17
- 2J04
- 2L50
- 5J70

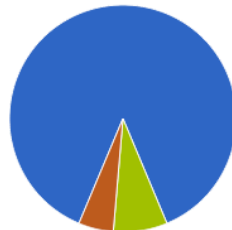
Real-time signalling diagrams

- See what the signaller can see
- Watch trains moving in real-time
- Works on modern mobile phones



Statistics

Real-Time PPM (more...)

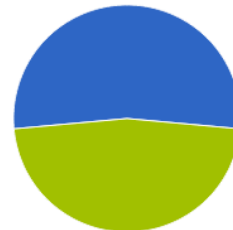


- On-Time (773 trains)
- Late (68 trains)
- Very Late (44 trains)

This statistic measures the number of trains which arrived at their destination in the following time bands:

- Within 5 minutes (or 10 minutes for long-distance services) of their scheduled arrival time
- Between 5/10 and 30 minutes of their schedule arrival

Right Time (more...) BETA



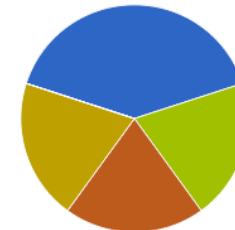
- On-Time (73 trains)
- Late (65 trains)

This statistic measures the number of trains which arrived at their destination early, or within 59 seconds of their scheduled arrival time.

The figures are calculated as follows:

• All in-service passenger trains (Class 1, 2 and 3)

Cancellations BETA



- Operational (2)
- Infrastructure (1)
- Reactionary (1)
- Unexplained (1)
- Others

This statistic shows a breakdown of the reasons that trains have been cancelled, aggregated in to eleven groups:

- Infrastructure (INF)
- Rolling Stock (T+RS)
- Network Rail Operations (PROD)

Real-time statistics

- Public Performance Measure
- Passenger trains arriving within 60 seconds of timetable
- Reasons for cancellations



TSR T2013/85751: Track Renewals



The information here may not be up-to-date and **must not** be used for operational or safety-critical purposes.

Route	MD301 (London North Western (South))
Location	Curzon Street Jn to Adderley Park
Mileage	111 miles 76 chains to 111 miles 70 chains
Speeds	50mph passenger, 50mph freight
Validity	From 0300 on Tue 07 May 2013 to 0600 on Sun 19 May 2013
Requestor	Amey Colas Duddeston (IQA1)
Comments	

Temporary Speed Restrictions

- Updated weekly when operating notices are produced
- Covers the entire country



TRACKING THE UK RAIL NETWORK.

[Home](#)
[Live Boards](#)
[Radar](#)
[Statistics](#)
[Information](#)

- Rob West, <http://www.raildar.co.uk/>



RAILDAR

[Feedback](#) [Terms & Conditions](#) [About](#)

TRACKING THE UK RAIL NETWORK.

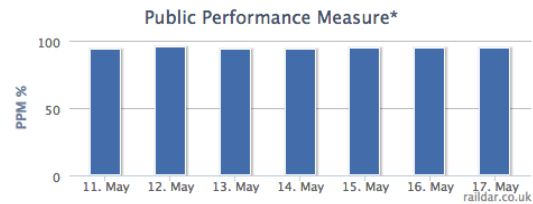
Today's PPM* is 94.1% (21069 trains seen on network, 19627 have completed their journey, 18477 of which on time, with 193 cancellations)

[Home](#) [Live Boards](#) [Radar](#) [Statistics](#) [Information](#)

Public Performance Measure* [New](#) [Save Layout](#) [Reset Layout](#)

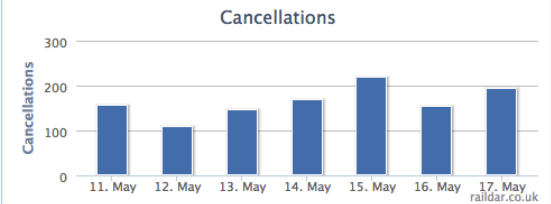
Public Performance Measure*

Operator:



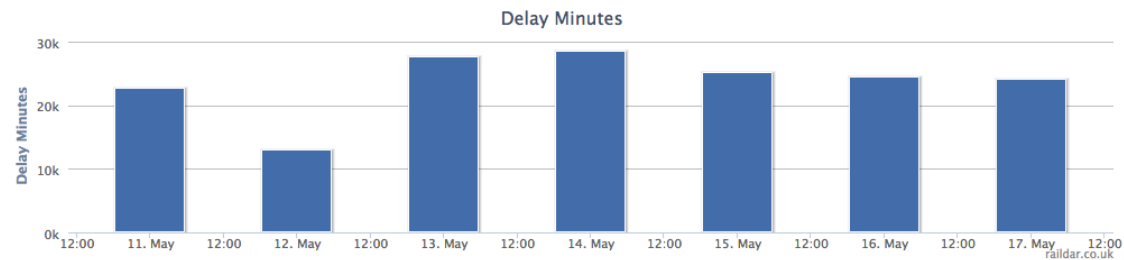
Cancellations

Operator:



Delay Minutes

Operator:



Statistics

- Rob West, <http://www.raildar.co.uk/>

Realtime Train Info

BasicAdvancedHeatmap

About

WHERE?

WHEN?

ON WHAT DATE?

SEARCH

East Croydon

2128

17/05/2013

Search

-1 hr

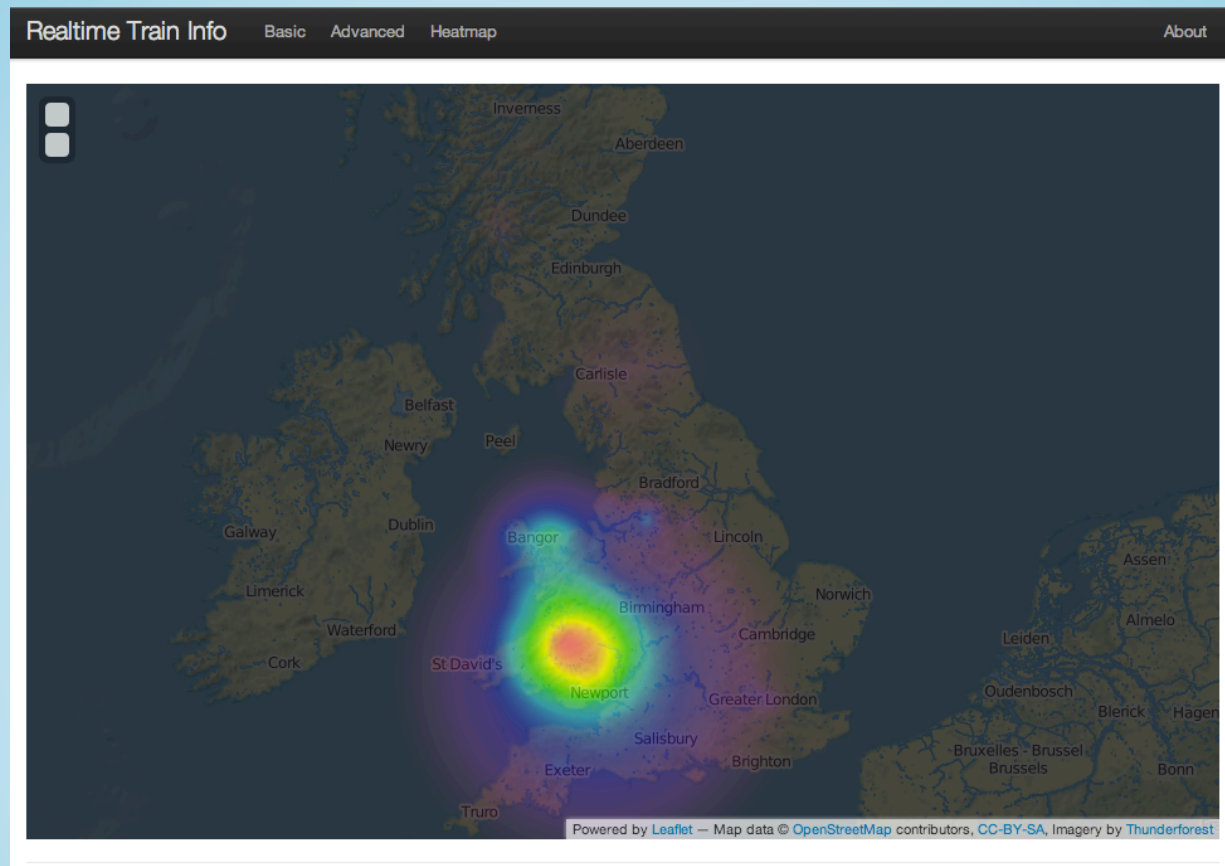
+1 hr

Trains

RT?	Plan Arr	Act Arr	Origin	Pfm	TOC	Destination	Plan Dep	Act Dep	
✓	2108	2107	Bognor Regis	1	SN	London Victoria	2109	2108	Details
✓	2109	2109	London Victoria	6	SN	East Grinstead	2110	2110	Details
✓	2110	2110	London Bridge	3	SN	Brighton	2111	2111	Details
✓	2113	2114	East Grinstead	4	SN	London Victoria	2114	2115	Details
✓	2114	2113	London Victoria	5	SN	Tottenham Corner	2114	2114	Details
✓	2116	2117	Tottenham Corner	4	SN	London Victoria	2117	2118	Details
✓	2116	2115	Brighton	2	FC	Bedford	2117	2116	Details
✓	2118	2120	London Victoria	3	SN	Brighton	2118	2121	Details
✓	2119	2120	London Bridge	6	SN	Uckfield	2119	2121	Details
✓	2122	2125	London Victoria	2	SN	Brighton	2123	2126	Details
✓	2123	2124	Brighton	1	SN	London Victoria	2124	2125	Details
✓	2124	2124	Bedford	3	FC	Brighton	2125	2125	Details

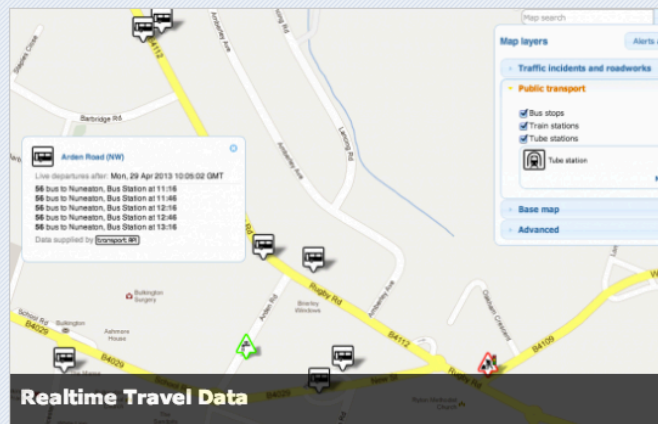
Real-time predictions

- Tom Cairns, <http://www.realtimetrains.co.uk/>



Disruption Heat-Map

- Tom Cairns, <http://www.realtimetrains.co.uk/>



We sell transport solutions from feeds to consumer travel apps to hyperlocal information services. We've got white label (here's one we built earlier so you don't have to) solutions for businesses and local authorities and we can give you first rate transport analytics providing added value business solutions for operators.

Twitter

placruk Shakespeare Review blogged: bit.ly/12Gv1c3 <My plan for reforming the government Trading Funds to release more #opendata
7 hours ago · reply · retweet · favorite

placruk Back on the 42 bus and dealing with the finer points of VAT. Its a glamorous life in a startup
10 hours ago · reply · retweet · favorite

placruk Shane on opendata in Guardian bit.ly/12xqZnp <I think data shud be free where there is a gov 1st purchaser undertaking a public task
yesterday · reply · retweet · favorite

placruk On a 42 bus crossing Tower Br & on phone discussing launch of Roadworks/TransportAPI public transport site 2b announced next week
yesterday · reply · retweet · favorite

placruk At #springback2013 backathoncentral.com

Multi-modal data aggregation

- Placr, <http://www.transportapi.com/>
- Rail and Bus data, all in one place

NEXT STEPS...



Getting more data open

- I'm working part-time at Network Rail to identify and open up more data
- Let me know your suggestions
- Not everything is possible...

What am I looking at?

- Weekly Operating Notices
 - Changes to the railway
- Track and signalling diagrams
 - Lots of them
- Geospatial data
 - Track centre-line geometry
 - Level crossings
 - Bridges



GET INVOLVED!

Events

- National Rail Enquiries Developer Day
 - 22nd May 2013
 - RSVP to 'NRE Developer Group' on LinkedIn
 - <http://www.linkedin.com/groups/NRE-Developers-Forum-4831364>

Events

- Open Rail Data Workshop
 - London Hackspace, Hackney
 - 1st June 2013
 - http://wiki.london.hackspace.org.uk/view/Workshops/Open_Rail_Data_Workshop_II

Events

- Data Feeds Anniversary Hack-Day
 - In planning...





OPENTRAINTIMES

www.opentraintimes.com

Peter Hicks
@poggs
peter.hicks@poggs.co.uk

Slide deck will be on <http://blog.poggs.com/> shortly