HACKTRAIN
4.0 CONFERENCE

INNOVATING THE FUTURE:

Disrupting Rail from the Outside In

Inmarsat, 99 City Road London, EC1Y 1BJ

24th November 2017

conference.hacktrain.com

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FOREWORD

Here we are again. Wow, I can't believe it's been a year already. I guess time flies when your #hackingtherails! This past year has been a little bit less noisy for the Hack Partners. We've listened, learned, and evolved as individuals and as a business.

We've brought on a Chairman, Tobias Stone, who will be serving as our host for the day, as well as an experienced non-exec board comprising of some of the industry's best and brightest that are helping guide us on our journey to drive forward innovation in rail.

Recognising where our strengths are, we're doubling down on bringing the tech community together and connecting them with rail's agents of change. The team has developed a new approach to implementing ideas via Projects which you can learn more about at the last page.

This new method allows our sponsors and clients to engage with disruptive innovators in a safe environment whilst still benefitting from the most cutting edge technologies.

For this year's HackTrain, we've expanded our efforts once again and are now running 2 trains to Europe thanks to the great people at Eurostar, SNCF, and Deutsche Bahn; as well as travelling in the UK via the GTR network! We even have Network Rail coming on board as a Headline

Sponsor and that in itself, I believe, speaks volumes about just how serious the industry is taking innovation.

This is an extremely hard industry to work in, but... it's also a beautiful one, one that enables billions of people around the world to travel safely, freely, and quickly. I hope that today, each of us learns something new, meets someone new, and that it inspires us to try something new. Only by embracing the unknown can we truly move forward.

River Tamoor Baig
Chief Exec & Founder
Hack Partners

If you want to see the outcomes from HackTrain 4.0, head over to:
posthack.hacktrain.com

8:30 – 9:30
Registration and Breakfast

9:30 – 9:45
Introduction
River Tamoor Baig
CEO, Hack Partners

THE HERE AND NOW

09:50 – 10:00
Opening Keynote
Peter Wilkinson
Managing Director, Passenger Services,
Department for Transport

10:00 – 10:15
Creating a Culture of Innovation
Mark Holt
CTO, Trainline

10:20 – 10:50
**Panel Discussion: Creating
a Culture of Innovation**

Participants will discuss how innovation can be facilitated so that organisations can establish the necessary culture required of disruption. Speakers will also talk about the role that regulation plays in encouraging or obstructing change and more specifically about how new data technologies could reimagine UK transport.

Moderator:
Max Gurvits
Director for Cross Border Angels

Panelists:
Steve Pyer
General Manager, Mobike

Tom Ewing
Principal Data Scientist, Department for
Transport

Heinz Uphoff
Head of Account Management for Passenger
Transport, DB

Dave Slocombe
Product Director, Trainline

Diego Diaz
Director, SNCF International

10:55 - 11:10
Investing in the future
Malcolm Brown
Chief Executive Officer, Angel Trains

Technologies such as AI & Autonomous Vehicles may sound a long way off, yet given the long timescales of rail vehicles and infrastructure these technologies will have profound impacts on infrastructure being designed and financed now. What are the main drivers of future transportation? How will technology change the way we travel? What do we need to do today to maximise the benefits, and minimise the disruption, caused by future changes facing the industry?

11:15 – 11:35
**Modern European Railway
cyber security issues**
Matt Simpson
Head of Transport Security, BAE Systems

To what extent has the network been compromised? Although hackers have infiltrated networks - including rail infrastructure itself - these breaches have been exploratory so far, rather than disruptive. Attackers are inside critical infrastructure and can access, monitor and collect intelligence but they are not actively trying to create chaos. Could this be because they are not organised enough? What can we expect when they do assimilate and what elements of the rail network are most vulnerable to attack?

11:40 – 12:10
**Panel discussion: Cybersecurity -
Assessing the threat posed by
the Internet of Things**

As more devices are connected to the internet, digital attacks are leading to real world consequences. Connected devices often lack basic security protection to ward off hackers and are especially vulnerable to attack. Is increased investment in IoT the answer? Considering that investment is expected to increase five-fold over the next five years as adoption of these devices picks up, is a solution under way?

Moderator:
Matt Simpson
Head of Transport Security, BAE Systems

Panelists:
Chris Moyer
Global Chief Technologist, DXC Technology

Paul Watts
CISO, Network Rail

Colin Brown
Digital Railway Principal Architect
and Security Lead, Network Rail

Remy Berthou
CIO, SNCF Reseau

12:20 –13:20
Lunch

THE NOT SO DISTANT FUTURE

13:20 – 13:45
**Right here, right now, the
new customer never waits**
Paul Papadimitriou
CEO, Intelligencr

13:45 – 14:00
**Hyperloop's culture of
innovation and beating the odds**
Paul Smith
Global Field Operations Manager,
Hyperloop One

THE FUTURE PROPHESIED

14:00 - 14:05
Presentation: Barriers to product approval
Haider Khokhar
Reroo

14:05 - 14:30
Panel discussion: What support do startups need to succeed in transport?

Moderator:
Tanja Kufner
Managing Director, Startupbootcamp, Smart Transportation and Energy Berlin

Panelists:
Marius Pigulla,
New Digital Business, Deutsche Bahn and Beyond 1435

Joshua Pines
Co-Founder, Sirenum

Rikesh Shah
Head of Commercial Innovation, Transport for London

Adam Stead
Founder, Apollo Rail

Haider Khokhar
Reroo

14:00 - 14:05
Presentation: Using machine learning to save millions
Tina Gogna
Automappr

14:05 - 14:10
Startup Pitch:
Dr. Jan Wessnitzer
Machines With Vision

14:10 – 15:00
Panel discussion: What does the future infrastructure look like?

Moderator:
Apurva Sinha
Head of Innovation and Information Governance, Network Rail

Panelists:
David Waboso
Managing Director, Digital Railway

Andrew Conway
Director of Engineering, BAI Communications

Steve White
4LM Implementation Director, TfL

Jean-Jacques Thomas
Chief Innovation Officer, SNCF

14:00 – 14:30
Panel discussion: The future of rolling stock

Moderator:
James Brown
Data and Performance Engineer, Angel Trains

Panelists:
Euan Smith
Head of Fleet, Angel Trains

Philippe De Laharpe
Project Chief of Telediagnostics rolling stock, SNCF

14:30 - 15:00
Sponsor Workshop: Rolling Stock: Design the Future Train

14:35 - 15:00
Panel discussion: Defining the next era of multimodal transport

Moderator:
Carmel Roche, Senior Director of Product & Business Development, SilverRail

Panellists:
Lilli Matson
Director of Transport Strategy, TfL

Andy Farmer
Executive Director for Strategy, ORM

James Taylor
Managing Director, DriveNow UK

15:15 - 15:30 Tea Break

15:30 – 15:50
The power of data & AI
Steve King
CEO, Blackswan

15:55 – 16:15
Can we enable multi-modal via the Blockchain?
Linus Norton
Blockchain Specialist

16:20 – 16:35
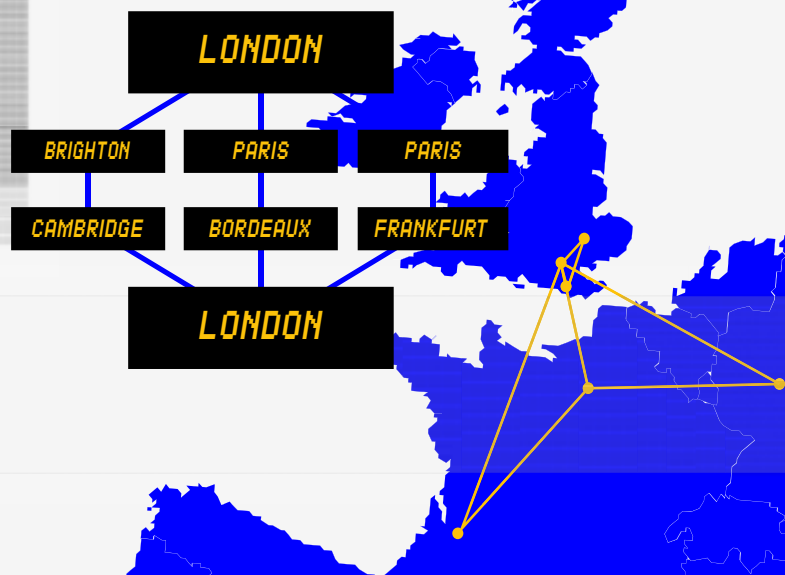**Closing remarks**
River Tamoor Baig
CEO, Hack Partners

16:45 – 18:00
Drinks Reception
Sponsored by Ricardo

HACKTRAIN
4.0 CONFERENCE

OFFICIAL HACKTRAIN 4.0 ROUTES

LONDON

BRIGHTON · PARIS · PARIS

CAMBRIDGE · BORDEAUX · FRANKFURT

LONDON

SNCF · TRANSPORT FOR LONDON · DB · EUROSTAR™ · GTR

HACKATHON LAUNCH

HACKTRAIN 4.0 CONFERENCE

16:00	Drinks Reception & Participant Registration
16:25	HackTrain 4.0 Introduction - Hack Partners
16:35	Transition to breakout rooms

16:45	**Network Rail** Identifying Rogue Assets	16:45	**Angel Trains** Future of Rolling Stock & Utilising Data	16:45	**ORR** Improving NR Monitoring
16:55	**Eurostar** Passenger Flow & Staff Management	16:55	**SNCF** Crowd Sourcing Passenger Information	16:55	**DfT** Simplifying Fares
17:00	**BAI Communications** Utilising User Location data	17:00	**Eurostar** Maintenance & Scheduling, HVAC & Cab	17:00	**DfT** Improving the NRPS
17:15	**SNCF** Improving Freight	17:15	**Trainline**	17:15	**GTR** Accuracy of Arrivals
17:20	**Network Rail** Getting the Network Back on Track	17:20	**Bombardier** Utilising Data from Rolling Stock	17:20	**DB** Accuracy of Arrivals
				17:25	**TfL** New Procurement Framework
17:30	Ice Breaking	17:30	Idea Pitching	17:30	Idea Pitching
		17:30	Idea Pitching	17:30	Idea Pitching
18:15	Idea Pitching	17:50	Team formation	17:50	Team formation
19:00	Team formation	18:20	EU Trains leave		
19:45	UK Train leaves				

CONTINUING THE MOMENTUM

The recurring piece of feedback we receive from the industry about HackTrain is "sure the events are amazing, the ideas are great, but why aren't more of them implemented?".

We have certainly learned a lot over the last two and a half years about what it takes to work with innovative and disruptive startups:

- Our HackTrain Accelerator resulted in 15 pilots being ran with 5 owning groups over a 3-month period. The programme taught us that some startups who try sell their services to the rail industry encounter too many challenges when securing contracts even if the pilots are successful and as a result they leave the industry!

- Our B.A.R.R.I.E.R.S Report highlighted how the way startups work and the fact that their product may not be a finalised, out of the box, or a completely compliant solution often makes it difficult for the industry to procure.

- From previous hackathons we have found that technology innovators DO want to engage with the rail industry, but they don't know where to start or who to talk to about their ideas.

But, we are not going to stop in our tracks...

We have adapted our approach once again when it comes to carrying forward these innovations with the industry which leads us to….the Hack Partners Projects.

Over the last 6 months we have hand picked 30 data scientists, artificial intelligence experts, and software developers from our hackathons and wider network. These tech innovators will be supported by project leaders within the rail industry in order to implement the very best ideas that are developed at our hackathons. Together, they form our "Associate Network".

The methodology we have developed allows the rail industry to engage with disruptive innovators in a safe controlled space whilst still benefitting from the most cutting edge technologies.

Want to learn more? Contact me on: rickin@hackpartners.com

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