



TDI #12 – Liverpool– Using Data to Tackle Freight Transport Challenges

26th February 2020 – The Royal Liver Building, Waterfront, Liverpool L3 1HU

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



TDI #12 – Liverpool – Master of Ceremony Welcome

Simon Topp, Chief Commercial Officer, Elgin

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



Event Admin

- No fire drills expected.
- What to do if the fire alarms go off?
- Refreshments will be available at 11:20 – 11:40, and 15:20 – 16:00
- Lunch will be served from 13:00 – 14:00

Welcome to TDI

- TDI is now fully in it's 4th year of operation, with 2 more events scheduled for 2020, to be announced very soon.
- TDI would not be here without the support from our many delegates who continue to attend, Innovate UK, and our sponsors

Gold Sponsor:



Platinum Sponsors:

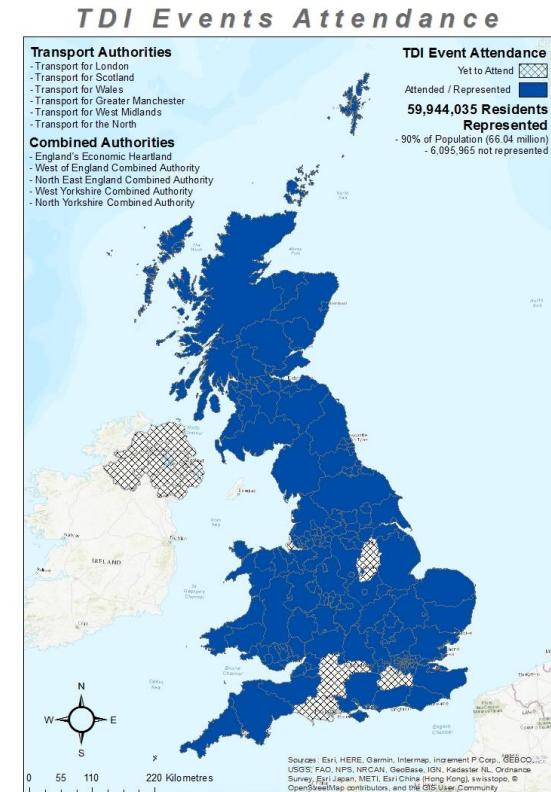


Bronze Sponsors:



5 years on...

- TDI Local Authority attendees are responsible for 90% of the entire UK population – 59.9m residents
- Previous delegates range from Transport Authorities, Combined Authorities, Unitary Bodies, Local Councils, to Private Sector Companies, Universities, Catapults, and more.



Structure of the Day

Presentations:

James Harris - HS2 Construction – Keeping the Lorries Moving

Graham Hillary - Buckinghamshire County Council Freight Strategy

Antony Swift - England's Economic Heartland Freight Study

Huw Davies - Coventry University – International Energy Agency, Hybrid & Electric Vehicle Technology Collaboration Programme

Alix Vargas & Ron Oren - Connected Places Catapult – Realising the Value of Data in Freight & Logistics

Toby Hiles - AppyWay – Using Data to help Cities Thrive
Panel Discussion

“Speed Dating” Session

Tom Cotton, Julia McNally, Laurence Oakes-Ash, Neil Herron, Antony Swift, James Harris, Huw Davies, Toby Hiles



TDI #13 – Cambridge – Decarbonisation

Venue TBC – Cambridge – Wednesday 17th June 2020



TDI #14 – London – Department for Transport

15 Hatfields, Hatfields, South Bank, London, SE1 8DJ

Enjoy the day

- If anyone would like to speak to the team about TDI, David, Tom and Luciano will be around all day
- Feedback forms are found on your tables, and are a valuable resource for future TDI events. Please keep one with you throughout the day and once filled at the end, please leave it on your table
- Next up – James Harris, CEO, Elgin



TDI #12 – Liverpool – Buckinghamshire County Council Freight Strategy

Graham Hillary, Transport Strategy Officer – Freight, Buckinghamshire County Council

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



Freight Strategy

Ivinghoe Pilot

Graham Hillary (ghillary@buckscc.gov.uk)
Transport Strategy Officer for Freight
Buckinghamshire County Council



Agenda

- Introduction to Buckinghamshire
- Freight Strategy & an Area Based Approach
- Ivinghoe Pilot Proposal & Benefits
- Enforcement
- Challenges

Freight Strategy

The Strategy was adopted in June 2018 and covers the period 2018 to 2036, designed to enable us to manage the movement of freight in a way that supports the economy whilst protecting the local environment and communities.

The Strategy aims to

- Encourage haulage operators to use the right routes at the right times
- Protect rural and urban environments
- Collaborate with those who have an interest to find new ways to solve freight problems
- Minimise the impact of moving freight and lobbying for improvements

An Area Based Approach

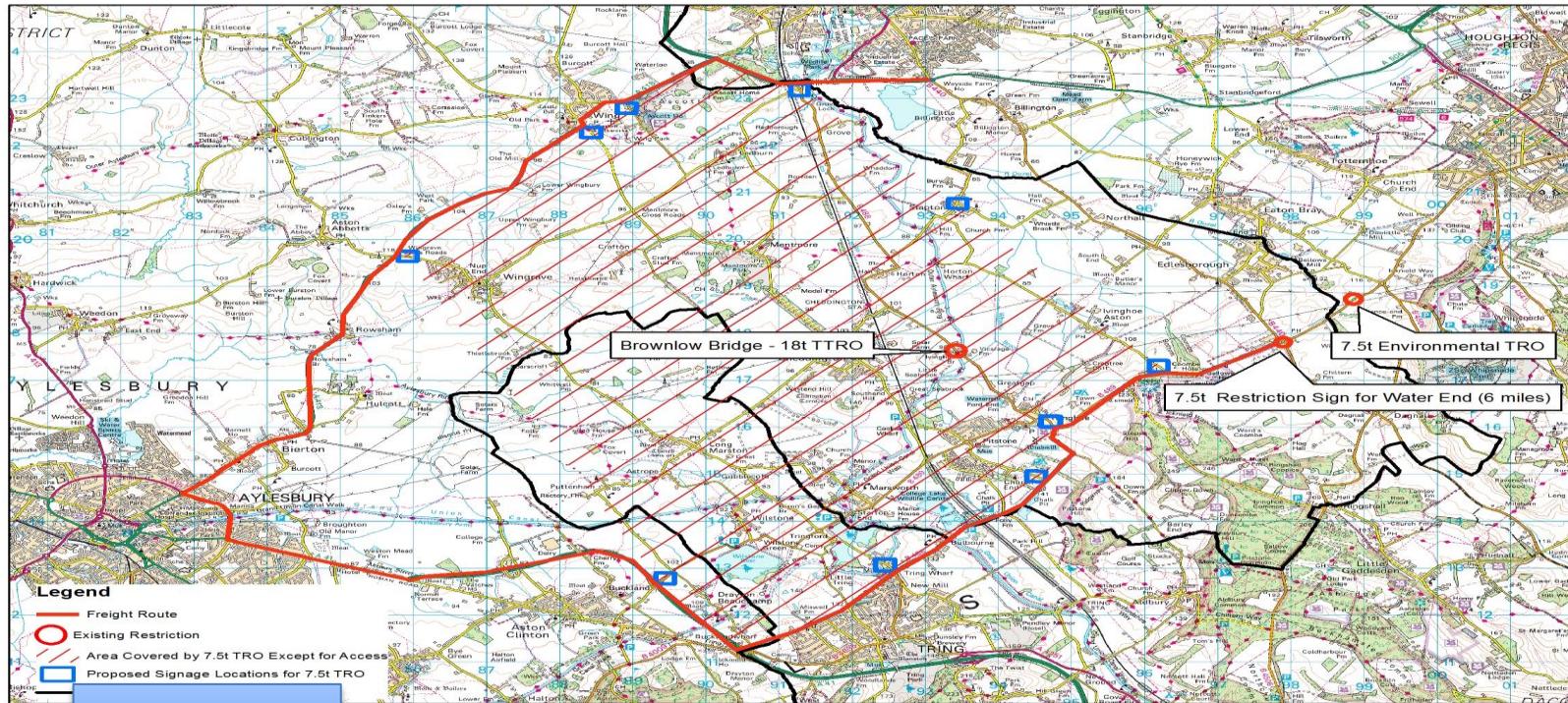
- Takes a wider view than a single structure or location
- Clean interventions
- Balance needs of communities and local businesses
- Early engagement (political, locally – both resident and business)
- Making use of 'Advocates'

The Ivinghoe Pilot

1. Promoting appropriate freight routes
2. Protecting the environment
3. Supporting business growth
4. Improving community and commercial co-operation

Providing a balanced approach of managing freight movements in the area, protecting resident's quality of life, the unique characteristics of the environment and the needs of local businesses and the county's growth aspirations.

Ivinghoe Pilot



Essential

- To have identified alternate routes
- To work with neighbouring authorities

Ivinghoe Pilot

Proposal

- Implement an area-wide environmental restriction of 7.5t except for access
- Promote freight routes around the area
- Proactively seek behavioural change from drivers and operators using the area for 'passing through'
- Encourage enhanced business / community collaborations
- Utilise local engagement in HGV monitoring and focussed actions
- Continue to seek greater enforcement capability through England's Economic Heartland & Department for Transport contacts

Benefits

- Community quality of life
- Supporting businesses, reducing costs to serve and aspirations to grow
- Fosters greater collaboration between residents, representatives and businesses
- Local resolution to local problems

Challenges

Enforcement

- Currently by Trading Standards and the Police (outside of Greater London)
 - Focus on offences against the person
 - Monies go to the central purse
- Approach adopted for Ivinghoe
 - Proactive guidance pre TRO
 - Utilising local resources and
 - Approved letters of advise
- Promote change
 - Recommend civil rather than criminal enforcement
 - Invoke Section 6 of the Transport Management Act
 - Use of Fixed Penalties & Magistrates Courts
 - Monies to support enforcement infrastructure

Technology

- Use of technology – ANPR
- Back office tools
- Automated and supported DVLA query

Expensive costs to enforce
However
Potentially self-financing

Challenges

Data

Need to survey traffic flows Pre & Post

- External provider
 - Cost
 - Deliverables need to be specified to avoid the need to rework
 - Should focus on supporting the business case

- Traffic Regulation Order processes

- Differences across local authorities
- Common deliverables with multiple approaches

Managing Freight

- Some have dedicated resources, many not
- Influence in planning processes
- Contribution to infrastructure projects
- Creative input into promoting alternate fuel options and 'last mile' demands

Data on HGV movements

- Origin to Destination
- Use of Strategic / Major Routes
- Identification to local level
- Through traffic vs Local access



Best practices delivering efficiencies; lower costs; shared ideas

Freight Strategy

Ivinghoe Pilot

Thank you

Graham Hillary (ghillary@buckscc.gov.uk)

Transport Strategy Officer for Freight

Buckinghamshire County Council





TDI #12 – Liverpool – England's Economic Heartland's Freight Study

Antony Swift, Project Lead, England's Economic Heartland

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:





TDI #12: EEH Freight Study – An STB Approach to Freight and Logistics Planning

Freight and Logistics Study

1. Strategic Context
2. The Case for Intervention
3. Freight in the Heartland
4. Understanding the Challenges
5. Identifying the Opportunities
6. Delivering the Ambition

1. Strategic Context

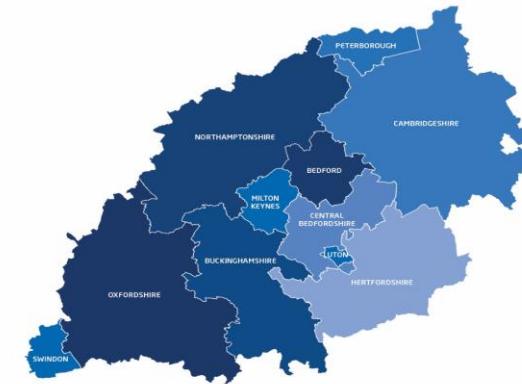
The Role of Sub-national Transport Bodies

- Passed in January 2016, the ability to establish a Sub-national Transport Body (STB) was set out in the Cities and Local Government Devolution Act 2016 through an amendment to the Local Transport Act 2008
- This represented a devolution of power from Central Government enabling regions to come together to provide a single voice on planning, prioritisation and delivery of transport infrastructure
- STBs operate at scale, identifying opportunities to grow the economy, increase productivity and unlock growth through planning and delivery at a strategic level
- All local authorities in England are represented in different degrees by an STB. England's Economic Heartland is recognised as one of the four established STBs

1. Strategic Context

England's Economic Heartland

- The STB for the Oxford – Cambridge Arc and surrounding areas. Brings together political and business leaders in a strategic partnership
- Provides a shared commitment to realise the economic potential of the region through better connectivity
- Recently published its Outline Transport Strategy: A Framework for Engagement in July 2019
- EEH will publish its Transport Strategy 2020 – 2050 this summer. With a focus on economic growth, accessibility and inclusion and quality of life and the environment



1. Strategic Context

England's Economic Heartland

- EEH is a region of national importance due to its businesses, including world leading innovation in industrial sectors at the cutting edge of global markets
- The NIC believes there is the potential to double the size of the region's economy
- This is dependent on delivering transformational growth supported by investment in transport connectivity



2. The Case for Intervention

Realising our Economic Potential

- To analyse the freight and logistics needs of businesses in the Heartland to inform policy and the Transport Strategy 2020 – 2050
- Provide the evidence base to demonstrate the freight sector is paramount to the health of the Heartland's economy
- To consider how EEH plan for the most efficient way of providing access to goods that unlocks economic potential, protects the environment and future-proofs the network



2. The Case for Intervention

The Purpose of the Study

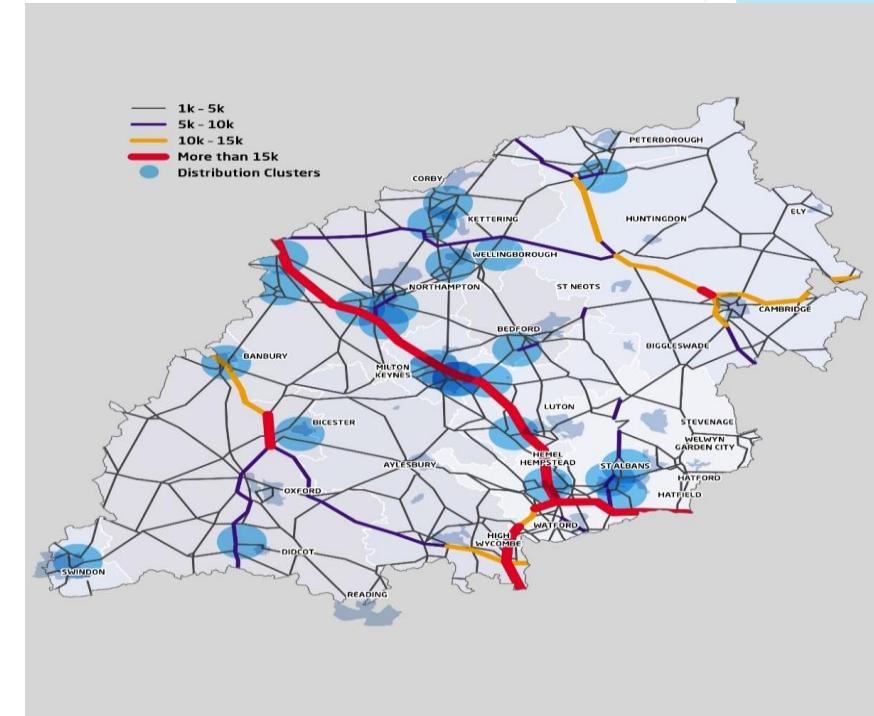
- Defined a clear starting point for freight sub-nationally to inform policy options to be considered as part of our Outline Transport Strategy
- Provides a consistent view on current patterns of freight activity and issues and opportunities relevant to the region
- The study was multi-modal in nature but took a predominantly rail/road approach
- Identified corridors that require strategic prioritisation/intervention to ensure productivity and growth continue to occur



3. Freight in the Heartland

Supply Chains Serving The Region's Growth Aspirations

- BMW in Oxford produced around 218,885 cars in 2017
- The Heartland boasts over 109,000 businesses in rural areas, 32% of all its registered businesses
- Tata Steel Corby manufacturers over 250,000 tonnes of tube each year
- The Heartland sees approximately 44,000 lorry journeys per day
- Rail freight accounts for 10.5% to the road tonnage



4. Understanding the Challenges

Key Conclusions from the Policy Review

- No overarching national strategy for logistics, little or no coordination between national stakeholders for freight policy
- NIC suggest there is a ‘freight blindness’ in the planning system, freight data is inadequate; and regulation should be coordinated
- Much of the growth to 2050 is planned in urban areas with better digital connectivity, leading to more consumer goods driven freight by e-commerce
- The Government, NIC and other national bodies have all emphasised decarbonisation and emission reductions for freight
- Growth will generate construction related freight activity and servicing requirements
- Freight does not focus heavily in LA plans and policies. SEMLEP does have significant analysis of, and engagement with the logistics sector due its location partly in the golden triangle of logistics

4. Understanding the Challenges

What Industry Told Us

- Demand for warehousing space and mixed use development will increase
- Skills shortage has meant cheaper labour being sourced abroad, increasing length of supply chain
- Reliability generally more important to hauliers than speed
- Need to plan for the infrastructure requirements of a shift to cleaner forms of energy
- Economy and environment are the biggest drivers of change and the impact of the two scenarios together is not planned for



4. Understanding the Challenges

What Industry Told us

- An environmental consumer enlightenment might see less waste, smaller packaging and more consolidation driven by a ‘sharing economy’
- A ‘demand responsive’ logistics model might see more vehicles/warehousing leased within a data driven operation
- A preferred fuel should be decided upon with the provision of the infrastructure and energy requirements to support it
- Innovation could reduce the impact of the sectors’ skills shortage



4. Understanding the Challenges

What Industry Told Us

- The UK Planning Process (NPPS) has not kept pace with the growth in freight. National policy should better recognise the need to plan for construction related freight, lorry parking and flexibility over future land use
- More ‘freight aware’ local planning required to ensure utilities infrastructure is delivered to warehousing sites early in the process
- Construction logistics plan could be expanded outside of the traditional London catchment
- Reducing regulatory barriers, with more visibility of their certainty would improve efficiencies



5. Identifying the Opportunities

The Role of a Sub-national Transport Body

- There is a common misconception that the rest of the UK needs to follow a London/TfL approach to logistics: a single voice that understands the regional challenges and advocates for solutions is valued by the sector
- EEH should enable the logistics industry to unleash its potential by setting the right conditions to realise the opportunity in new markets (such as rail)
- EEH should identify the impact of future trends, emerging markets and its cause and effect on GVA in the region to help support the sector to capitalise
- Data is critical to the industry's success, although it is hamstrung by the inability to share it due to commercial sensitivities. An STB provides an opportunity to play a brokerage role in an independent capacity
- EEH can offer consistency in regulatory and policy planning to support the sector

6. Delivering the Ambition

Taking Forward Recommendations: Planning

- EEH has ongoing membership at multiple Logistic Forums
- Lobbying for devolution of enforcement powers to partner Local Authorities
- Work being commissioned to understand EEH role and policy framework to embed freight in the planning process, following the challenge identified with the absence of statutory powers outside of London
- ‘Freight Aware planning’ requires regional oversight, be it spatially through local plan making (e.g. clustering of supply chain activity), consistent planning requirements (e.g. construction management plans) or design standards in development (e.g. loading bays)

6. Delivering the Ambition

Taking Forward Recommendations: Rail Freight

- One of the key policy recommendations was to maximise the use of freight by rail and SRFIs. This has shaped policy recommendations to the William's Rail Review and is influencing the design of East West Rail
- Large environmental and economic benefits for embracing the benefit for modal shift onto the rail network
- The construction of a million homes and NSIPs will require an enormous amount of bulk construction materials
- Huge demand for rail freight in the Heartland that could be realised by EWR Co. and associated infrastructure enhancements
- Work being scoped with Network Rail System Operator to produce detailed work on future freight corridors and their requirements, helping reduce London through freight and taking a system approach to rail freight

6. Delivering the Ambition

Taking Forward Recommendations: Freight Data

- Current methods of data collection, e.g. CSRGT, GB Freight Model, Traffic Counts, are ineffective ways to capture and predict freight OD movements
- Existing data is inadequate and operators are generally unwilling to share due to commercial interests and different operating models and competition laws
- Lack of data (e.g. movement and commodity) leading to supply-chain inefficiencies which has a negative impact on environment and infrastructure
- Access to better data can help identify regional investment priorities, impact on congestion and help value freight in scheme appraisal
- Seeking to engage in opportunities to support partners to develop freight automation and has built freight data into its REB. Providing leadership amongst STBs to support sub-national approach to freight data



Antony Swift:
aswift@englandseconomicheartland.com



TDI #12 – Liverpool – IEA & Hybrid EV Technology Collaboration

Dr. Huw Davies, Senior Lecturer, Coventry University

Platinum Sponsors:

Gold Sponsor:



Bronze Sponsors:



International Energy Agency

Hybrid & Electric Vehicle Technology Collaboration Programme

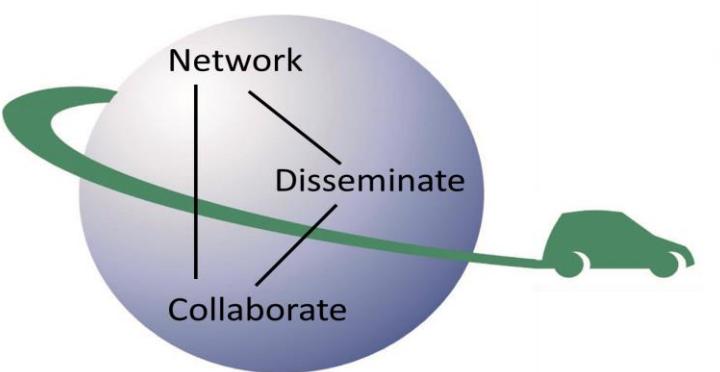
HEV TCP Mission

- Supply objective information to support decision making
- Facilitate international collaboration in pre-competitive research and demonstration projects
- Foster international exchange of information and experiences



Target audience

- Governmental bodies at national, regional and city levels
- Automotive industry
- Component suppliers
- Utilities



Why Task 27 “Electrification of Transport Logistic Vehicles”?

- transport sector heavily depends on fossil fuel
- freight transport activity is predicted to grow
- reduction in GHG emissions is required
- expect changes of the regulation framework

→ the electrification of transport logistic vehicles is essential



lack of information about the status of existing electrified logistic vehicles and possible fields of applications

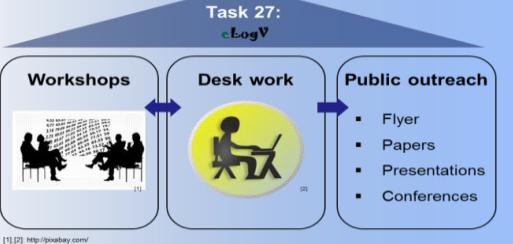
Task 27 “Electrification of Transport Logistic Vehicles”

Objectives & Working Method

Objectives

- (1) summarize the status of vehicle and infrastructure technologies, implementation and hurdles
- (2) identify early niche markets and commercialization opportunities
- (3) provide policy recommendations for further research and deployment activities

Working Method



Objectives are addressed in three ways:

- workshops: to involve stakeholders and collect information
- desk work: to establish the scientific foundations, input for workshops and papers
- public outreach: to raise awareness in the broader community

Task 27 Data Basis

Vehicle Database

(includes about 120 electrified transport logistic vehicles:
BEV, PHEV, FCEV / N₁, N₂, N₃)

General data:

market, producer, name of vehicle, powertrain technology, type of powertrain, functionality, production status, vehicle category, year, source

Technical data:

engine power, battery type, battery capacity, gross vehicle weight, payload, driving range, top speed

Project Profiles

(info collection of pilot projects)

- Short description
- Stakeholder involved
- Actors involved
- Focus areas
- Contact
- Links
- Results

The screenshot shows a project profile for 'IA-HEV' under Taskforce 27. It includes sections for 'short description', 'stakeholders involved', 'focus areas', and 'contact' information.

The screenshot shows the 'results' and 'links' sections of the IA-HEV project profile, featuring images of various electric vehicles and a link to the website www.iahev.org.

Series of Workshops

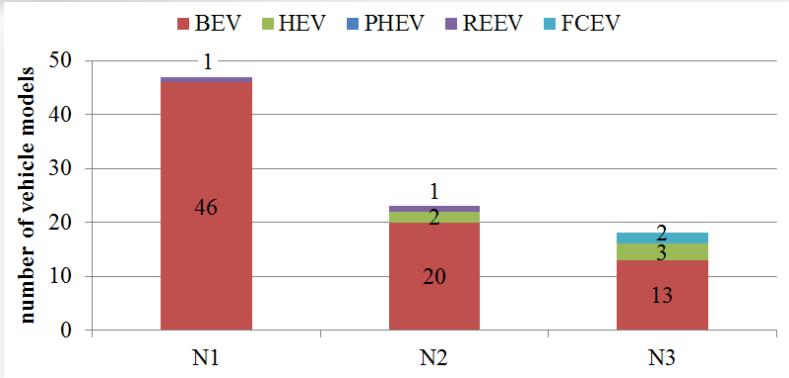
- Stuttgart 19.03.2015
- Amsterdam 12.04.2016
- Vienna 19.10.2016
- Coventry 26.04.2017



Topics:

- Electric transport logistic vehicle technology and its application
- Experiences and prospects of electric freight vehicles
- Electric freight vehicles - out of niche into mass market
- The Road to Electrification of Logistics
- Exchange of experiences with city administrations, battery and fuel cell producers, early adopters, research institutions

Number of Vehicle Models Potentially Available on the Market



either e-converted or close to series production vehicles, no prototypes or technology demonstrator

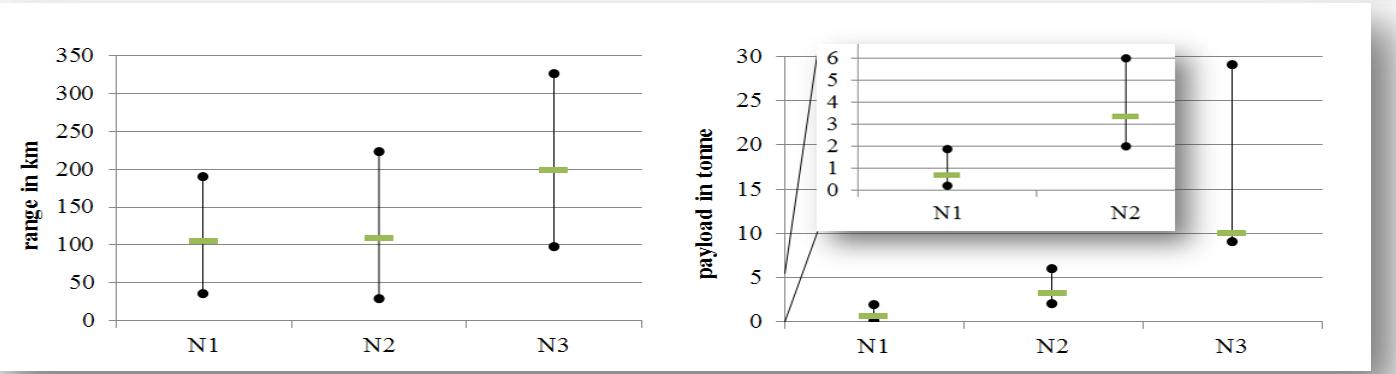
category N according to the European classification scheme:

- N₁: ≤ 3.5t GVW
- N₂: > 3.5t – 12t GVW
- N₃: >12t GVW

- 88 electrified transport logistic vehicles models; >50% in the N₁ vehicle category
- Battery electric vehicles clearly dominate across all vehicle categories
- Not surprisingly, the share of BEV is higher, the smaller the vehicle and battery
- A surprise is the high share of BEV in N₃-class
- Only a few vehicles from OEMs
- The database will be available for download in May 2017

<http://www.ieahhev.org/tasks/e-logistics-task-27/>

Performance and Limits of Electrified Transport Logistic Vehicles



- category N₁: on average 106 km range and 700 kg payload
- category N₂: on average 110 km range and 3,400 kg payload
- category N₃: on average 200 km range and 10,100 kg payload

→ current performance limits operation

based on manufacturer's data; in terms of range total number of vehicles considered is 46 for N₁, 16 for N₂ and 7 for N₃. in terms of payload total number of vehicles considered is 40 for N₁, 14 for N₂ and 7 for N₃

WS held in Stuttgart (2015-03-19)

“Electric Transport Logistic Vehicle Technology and its Application”

- Contributions on the topics: R&D for Electrified Transport Logistic Vehicles, Possible Fields of Application for Electrified Transport Logistic Vehicles, World Café Discussion about Hurdles of Implementation

Messages (extractions):

- Automated production for battery systems is achieved for the capacity of 20 MWh (ca. 200 buses), which can be upscaled
- Automated production for high volume fuel cell system manufacturing with an expected cost reduction of 50% (\$/kW); offered warranty with a 15,000 operating hours (>10 years)
- About half of all outages are due to difficulties with the electric powertrain
- Economic efficiency is the key to success! → Electric trucks are still NOT profitable
- The number of trips that could be electrically operated with vehicles which are already available is much higher than estimated
- There is a need to transfer the information from desktop to the “real life”
- Clear targets and standardized EU wide “zero emission” areas
- EV center for all questions and education
- ...

WS held in Amsterdam (2016-04-12)

“Experiences and prospects of electric freight vehicles”

- Contributions on the topics: Best Practice Experiences of Pioneer Cities, Experiences from Early Adopters of Electric Freight Vehicles, Infrastructure for Charging

Messages (extractions):

- It is essential to give *perspective for action*. Put a dot on the horizon for e.g. environmental and congestion zones
- Initial cost stays high, not enough advantages of privileges to close the financial gap → *Reward frontrunners* e.g. subsidies, parking and loading spaces, time windows for loading-unloading zones, etc. and *build platforms for sharing knowledge*
- Everyone wants you to transport electrically, until you really try...road legislation stays hopelessly behind → *Supportive government policy* is *still of high importance* for the wider uptake of EFVs
- Strong appeal to *develop an integral European vision* on electrical distribution
- A better way to support the mass adoption of the alternatively fueled technology is *to give them a long-term competitive advantage*
- *Adjust driver license B* to a maximum gross vehicle weight of 4,5 tones
- *European cities have to team up* (learn from each other, mass potential in EV demand)
- ...

WS held in Vienna (2016-10-19)

“Electric freight vehicles - out of niche into mass market”

- Contributions on the topics: Electric Freight Vehicles as Pillar of Sustainable Logistics, Governmental Perspectives and Implementation Plans for Electric Freight Vehicles, Experiences from Early Adopters of Electric Freight Vehicles

Messages (extractions):

- Many existing strategies, projects and initiatives which are still not sufficient to reach targets set
- In order to reach essentially CO₂-free city logistics in major urban centers by 2030 (White Paper) fleet exchange has to start at 2020 latest (average exchange of vehicle after 8-10 years)
- New forms of cooperation is needed e.g. cross-company, cross-sectoral, multi-institutional
- After-Sales-Service is not an issue for e-converter, if you are prepared in a way, that a local dealer takes on the responsibility
- The costs of urban city hubs are still too high. Since the utilization of city hubs is limited to only 1-2 hours per day, “shared hub”-approaches appear to be more useful
- Routing according payload is important → deliver heavy goods first
- New technology has to be combined with an advanced business model (fleet integration advisory, on-demand availability/provision of EV, integrated service & maintenance, training/info material)
- Allow drivers with class B license to drive E-Vans up to 4.25t GVW

WS held in Coventry (2017-04-26)

“The Road to Electrification of Logistics”

- Contributions on the topics: Regional Stakeholder Approach to Electrification of Transport Logistics, Planned and Ongoing Pilots Supporting Electrification of Transport Logistics, Overcoming the Technical Challenges to Electrification of Transport Logistics

Messages (extractions):

The UK Approach to Electrification of Transport Logistics

- There is a framework in place for promotion and support of EVs.
- Passenger cars experiences can be disaggregate and related to vans and CV challenges.

Planned and On-Going Pilots Supporting Electrification of Transport Logistics

- Nervousness relating to new technology and we are not utilising the advantages of this technology and being overly cautious leading to higher costs and perceived market disadvantage.
- Education of the capability of the technology is required so that were there is a positive business case it can be identified and promoted as such.

Overcoming the Technical Challenges to Electrification of Transport Logistics

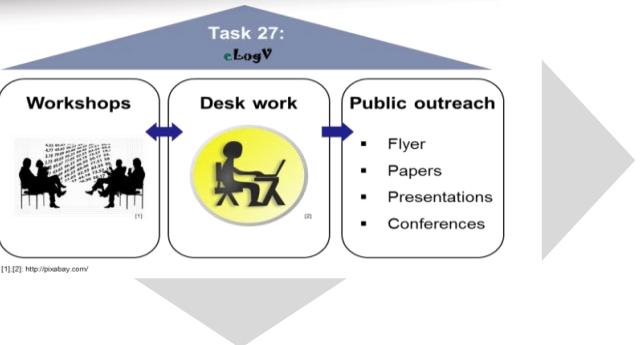
- Options and technologies are available and under development.
- Funding is required to develop business models around new technologies.

Experiences from Different Countries

- Urban logistic applications are generally seen as early niche markets from the operations point of view
- Vehicle performance varies between specific vehicle types and depends on a number of factors related to operational conditions, technology, infrastructure and cost
- Operability and the business case highly depend on country specific conditions and case of application
- Business cases are hardly provided
- Most experience has been made with battery electric vehicles related to vehicle category N₁ used for parcel and post deliveries → vehicles are well suited and competitiveness is almost given
- More experience is needed in order to identify suitable applications in urban goods distribution for N₂ and N₃ category vehicles

Task 27 Outputs

<http://www.ieahhev.org/tasks/e-logistics-task-27/>



1) Workshop held in Stuttgart (2015-03-19):

"Electric Transport Logistic Vehicle Technology and its Application"

2) Workshop held in Amsterdam (2016-04-12):

"Experiences and prospects of electric freight vehicles"

3) Workshop held in Vienna (2016-10-19):

"Electric freight vehicles - out of niche into mass market"

4) Workshop held in Coventry (2017-04-26):

"The Road to Electrification of Logistics"

- **Vehicle database:** Key facts of electric commercial vehicles available on the market or presented as prototypes. About 120 vehicles are listed.

- **Project profiles:** Key facts of ongoing or terminated demonstration projects from the partner countries. About 30 project profiles.

Presentations:

- 1) Electrification of transport logistic vehicles: Techno-economic assessment of battery and fuel cell electric transporter
EVS28, Korea, May 3-6, 2015
- 2) Status and trends for electrified transport logistic vehicles
EEVC, Belgium, 2nd - 4th December 2015
- 3) International experiences within the IEA HEV Task 27 „Electrification of transport logistic vehicles“
EL-MOTION2016, Vienna, 27- 28.01.2016
- 4) Current status of the electrification of transport logistic vehicles
EEVC, Geneva, 14th – 16th March 2017

Papers:

- 1) Electrification of transport logistic vehicles: A techno-economic assessment of battery and fuel cell electric transporter
EVS28, Korea, May 3-6, 2015
- 2) Status and trends for electrified transport logistic vehicles
EEVC, Belgium, 2nd - 4th December 2015
- 3) Current status of the electrification of transport logistic vehicles - Early niche markets and commercialization opportunities
EEVC, Geneva, 14th – 16th March 2017

Thank you for your Attention



Dr Huw C Davies CEng FIMechE FHEA

Senior Lecturer in Automotive Systems Engineering
Research Institute for Future Transport and Cities
Coventry University,

t. +44 2477 659137

m. +44 7861 881950

e. huw.davies@coventry.ac.uk



DLR
Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center



JOANNEUM
RESEARCH
LIFE



Sabancı
Universitesi



Office for
Low Emission
Vehicles



Coventry
University



rai
vereniging
Rijwielen Automobiel Industrie



울산대학교
UNIVERSITY OF ULSAN



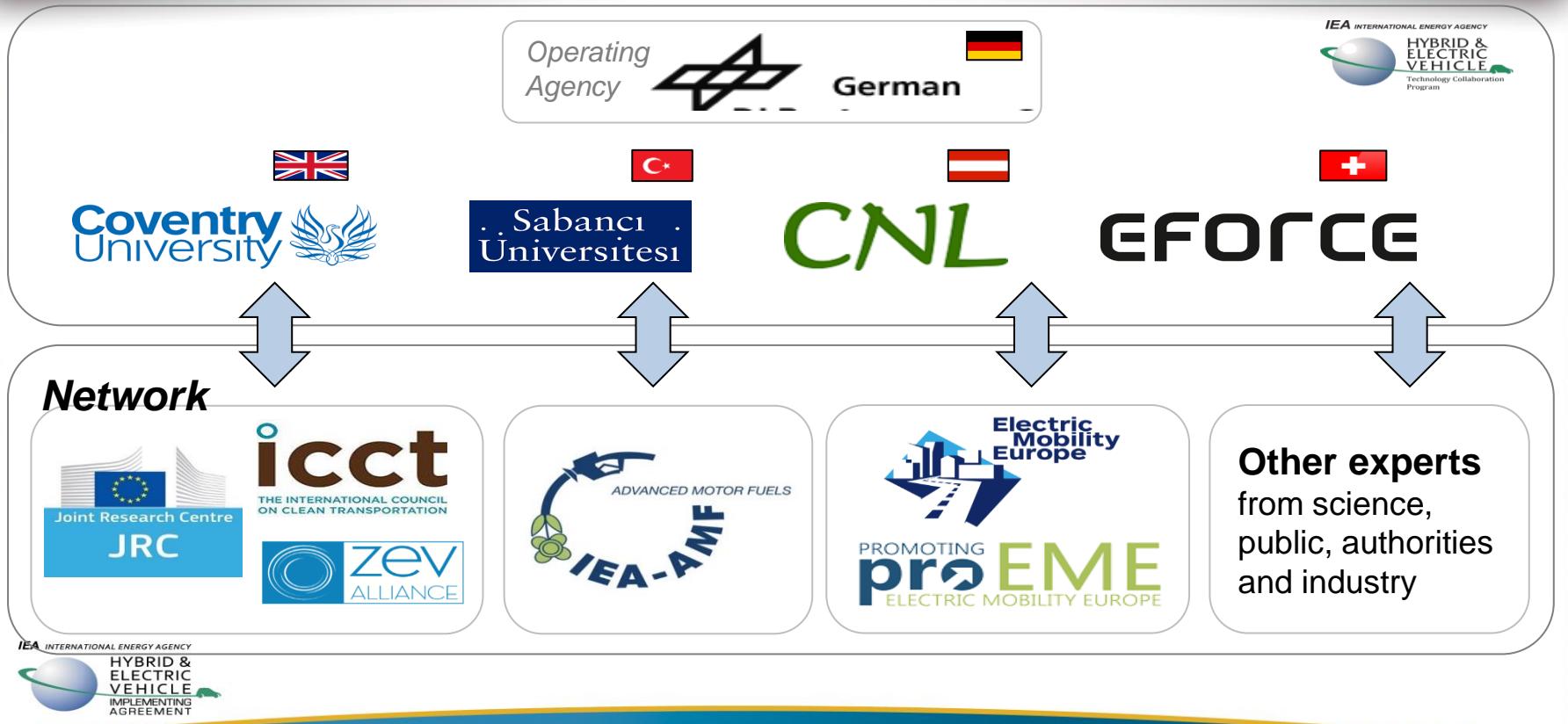
Task 41: Electric Freight Vehicles



Duration of the task is 3 years. The task started officially on April 1st 2019 and will be finished on March 31st 2022.

Participants of Task 41 will gain access to information in the form of reports, fact sheets and presentations. Furthermore, participants will have the opportunity to network with colleagues and experts in the area of EFV.

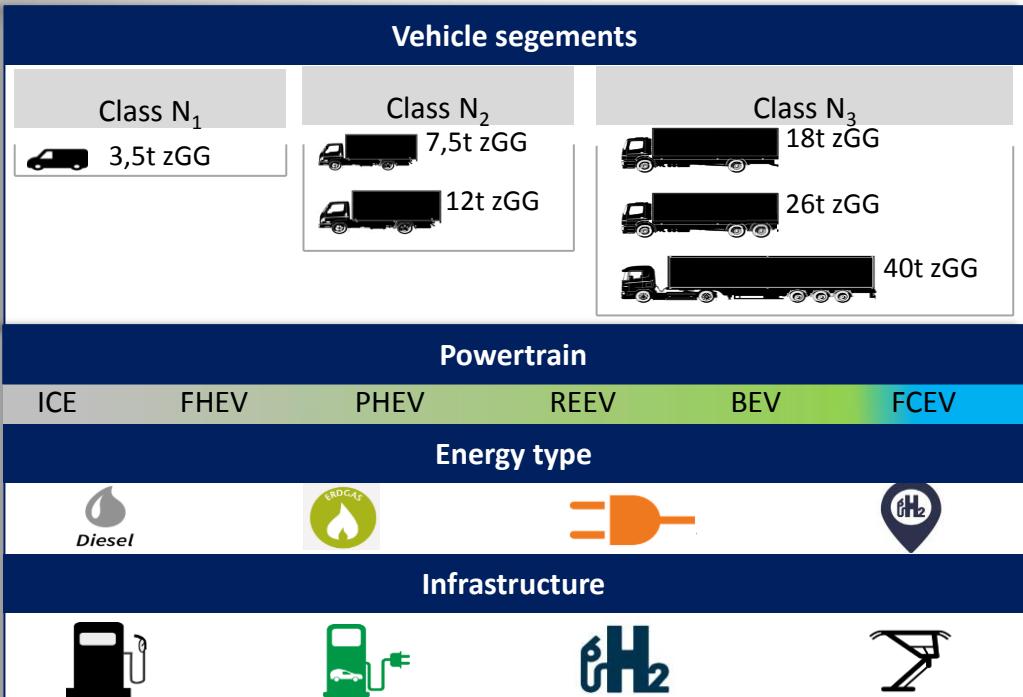
Task 41 Organisation



Objective of task

- The task main objectives are to monitor progress and analyse the potential contribution of electric freight vehicles to emissions reduction targets.
- Task 41 will focus on following topics:
 -  Monitoring of **technological progress and cost developments** in EFVs
 -  Discussion of the role of monetary incentives and wider, long-term **policy frameworks** incl. non-monetary incentives
 -  Analysis of the **potential contribution of EFVs to TCO and CO₂-Emission reductions**

Scope of task



- All truck classes from light to heavy freight vehicles
- All electric powertrain systems including hybrid, plug-in hybrid, full electric and fuel cells in comparison with ICE-systems (Diesel, CNG, LNG)
- Electric charging and hydrogen fuelling infrastructure including also overhead-catenary system
- For vehicle operation in Task 41 member countries: Austria, Germany, Switzerland, Turkey and UK

Aust
Uni
Sp
Irel
Fin
Aust
Unit
Span
Irela
Finla
Aust
Unit
Span
Irela
Finla
Aust
Unit
Span
Irela
Finla
Aust
Unit
Swit
Neth
Fran
Belg
King
Swe
The
Fran
Belg
King
Swe

Concepts

Prototypes & field testing

Serial production

2021 →

2019/20

→ 2018

Vans (3.5 t)

Light Trucks (3.5 - 12 t)

Heavy Trucks
(12 - 26 t)

Semi-trailer (40 t)

N1

N2

N3

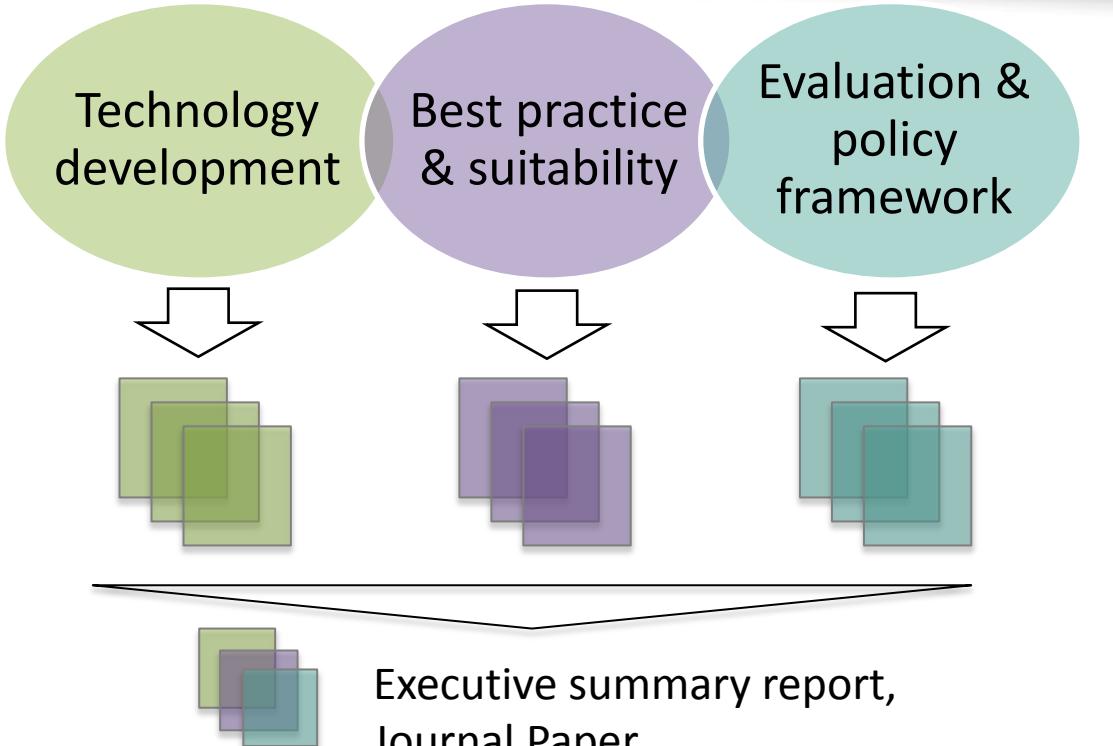


Work program

Three areas define the work program of Task 41.

*For each area topics of interest were identified, which are worked out in the form of **fact sheets** (1-2 pages).*

The results are summarized in the IEA final report and a journal paper. Topic of the scientific paper is the “review of aspects for the introduction of EFV”.



Deliverables & Products

- D1: Fact sheets/policy briefs (1-3 per focus area)
- D2: Workshops (3 Workshops, one per year)
- D3: Executive summary report
- D4: Conference and peer reviewed papers
- D5: presentation

Progress

Joint proEME and IEA-HEV Task Force 41 workshop

Battery-electric freight vehicles in city logistics



Draft Agenda

1st Workshop: Vehicle technologies and applications of battery-electric freight vehicles in city logistics

1 p.m. to 5 p.m., October 15th 2019

DLR Stuttgart, Pfaffenwaldring 38-40, 70569 Stuttgart

- 1: Current technical characteristics of battery-electric freight vehicles
- 2: Development of the charging infrastructure: costs and availability
- 3: Practical experience and knowledge from pilot projects and initial applications

Road to implementation

Past -2018:

- R&D projects: low TRL
- Quality & reliability problematic
- Low range
- Slow AC overnight charging
- Very expensive
- Individual test:
 - focus at vehicle

Now 2019-2021:

- Small series & OEM proto's
- Improved reliability
- Service, maintenance & warranty below expectations & expensive
- High purchase price limits uptake
- Higher battery capacities
- Ultra fast charging in operations
- Living labs:
 - Fleet integration
 - Logistics optimisation
 - Testing grid impact

Future 2022-:

- OEM's
- Increasing volumes
- Service, maintenance & warranty → OEM standards
- Cost will go down (uncertainties)
- Grid limitations → MegaWatts simultaneous charging
- Large scale implementation:
 - Electric fleets
 - Smart & planned charging integrated in routing
 - Logistics: competitive edge

Maturing of the market



Use Case Examples

Specifications:

- 7 eTrucks
- FRAMO
(Germany)
- 44 ton | 4 x 2
- 345 kWh battery
- > 150km range



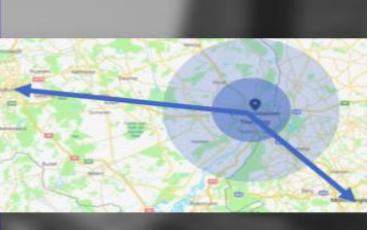
Case 1: Fixed routines, maximised distances

- 3 return trips a day between Cologne - Roermond (90 km one-way)
- 350kW chargers on both sides

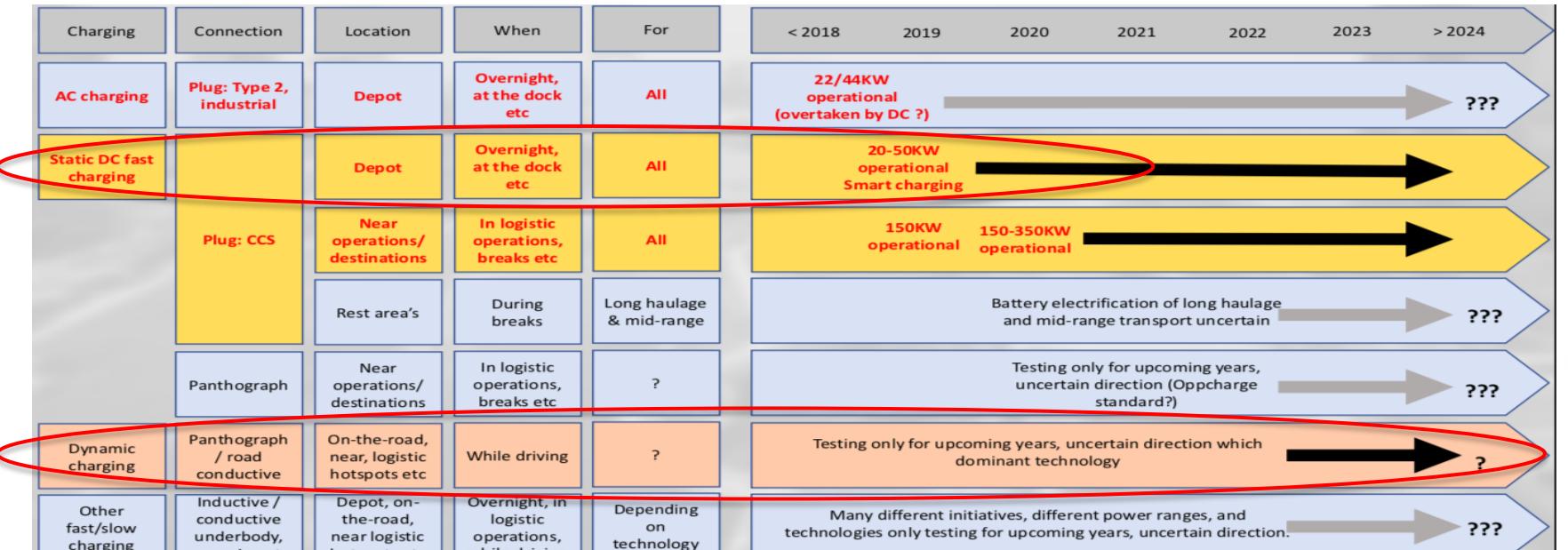


Case 2: Frequent and varying short distances: Venlo & Roermond

- Constant changing routes, (container) transport distribution
- 20 and 50 km
- 350KW charging at port terminals



Charging Infrastructure for electric freight vehicles



Summary - WS 1

Challenges	Problems
<ul style="list-style-type: none">• Operationalisation: range vs. payload; secured payload for greater planning reliability; planning effort for loading stops; flexibility (loading time)• Space for loading: sufficient loading capacity; sufficient loading points at the delivery zones; intermodal hubs?; delivery zone-building-ramps• Purchase decision: high investment costs, vehicle classes (Vecto); investment vs operating costs; too high investment costs result in return of investment above total cost of ownership• Operator = Energy supplier	<ul style="list-style-type: none">• Uncertainties about the BEV vs. Fuel Cell technologies• Areas for charging stations in the city• Distribution traffic is standing anyway at night → no need for fast charging station• Feed-in power of grid for electricity currently not available• Unclear which capacity is required where• Life cycle costs for vehicle-battery-infrastructure• bi-directional function → standards as well as technical and economical

Join the collaboration!

Dr Huw C Davies CEng FIMechE FHEA

Senior Lecturer in Automotive Systems Engineering
Research Institute for Future Transport and Cities
Coventry University,

t. +44 2477 659137

m. +44 7861 881950

e. huw.davies@coventry.ac.uk





TDI #12 – Liverpool – Realising the Value of Data in Freight & Logistics

Alix Vargas, Logistics & Supply Chain Innovation, Connected Places Catapult
Ron Oren, Strategic Lead – Open Data for Transport, Connected Places Catapult

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



Realising the value of data in freight & logistics

Ron Oren & Alix Vargas
Connected Places Catapult





WE HELP UK FIRMS
DEVELOP THE
PRODUCTS AND
SERVICES TO MEET
THE CHANGING NEEDS
OF CITIES, AND TO
SELL THEM TO THE
WORLD

Connected Places Catapult



Our mission

To help British businesses address the grand challenges of today to create connected places, fit for the future.

Our vision

For the UK to lead the world in creating cities, towns and places which thrive on their ability to connect people to resources, opportunities, ideas and each other. Where the smooth flow of people, goods, transportation and services, drives economic success, productivity and wellbeing.



Our role in the market

Increasing the **SUPPLY of proven products and services that meet market demand**
by helping companies to commercialise innovation through demonstration, testing, development of standards and market exposure



Identifying new areas for **MARKET MAKING and **DISRUPTION****

by stimulating richer engagement between academics and businesses, access to data and partnerships with government and regulators

Boosting **DEMAND for innovation from intelligent customers**

by investing in tools, resources and platforms that cultivate confidence and capability among buyers

Areas of focus

Decision making
Built environment
Public space
Mobility
Wellbeing
Critical infrastructure



Mission objectives

CURATING, CONNECTING
AND SUPPORTING UK
INNOVATION CLUSTERS

DELIVERING ZERO CARBON
TOWNS AND CITIES

Vision for transport data

Enable the sharing of data between organisations, modes and sectors to stimulate development and deployment of new services that grow the UK economy

Importance of data



At least
3,000
new high skilled jobs



A source of
£4bn GVA
and growing exports



Contributing to
improved productivity
and
lower costs



Faster journeys and
less congestion, worth

£4bn pa

Bubble size indicates global
value in 2030, in £Bn



Safer roads and
fewer accidents, worth

£4bn pa



Improved regional connectivity
and inclusion of different
communities, worth

£0.1bn pa

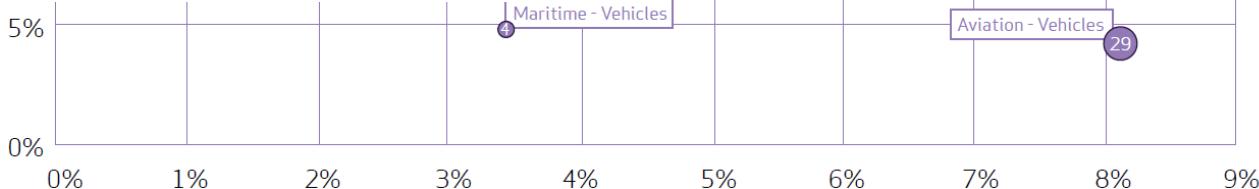
Optimised and more resilient
delivery of freight, worth

£0.5bn pa



Lower emissions,
equivalent to saving

£1bn pa



Global market opportunity
(2030)

UK share of global market

Barriers to sharing data

Evidence of business benefit

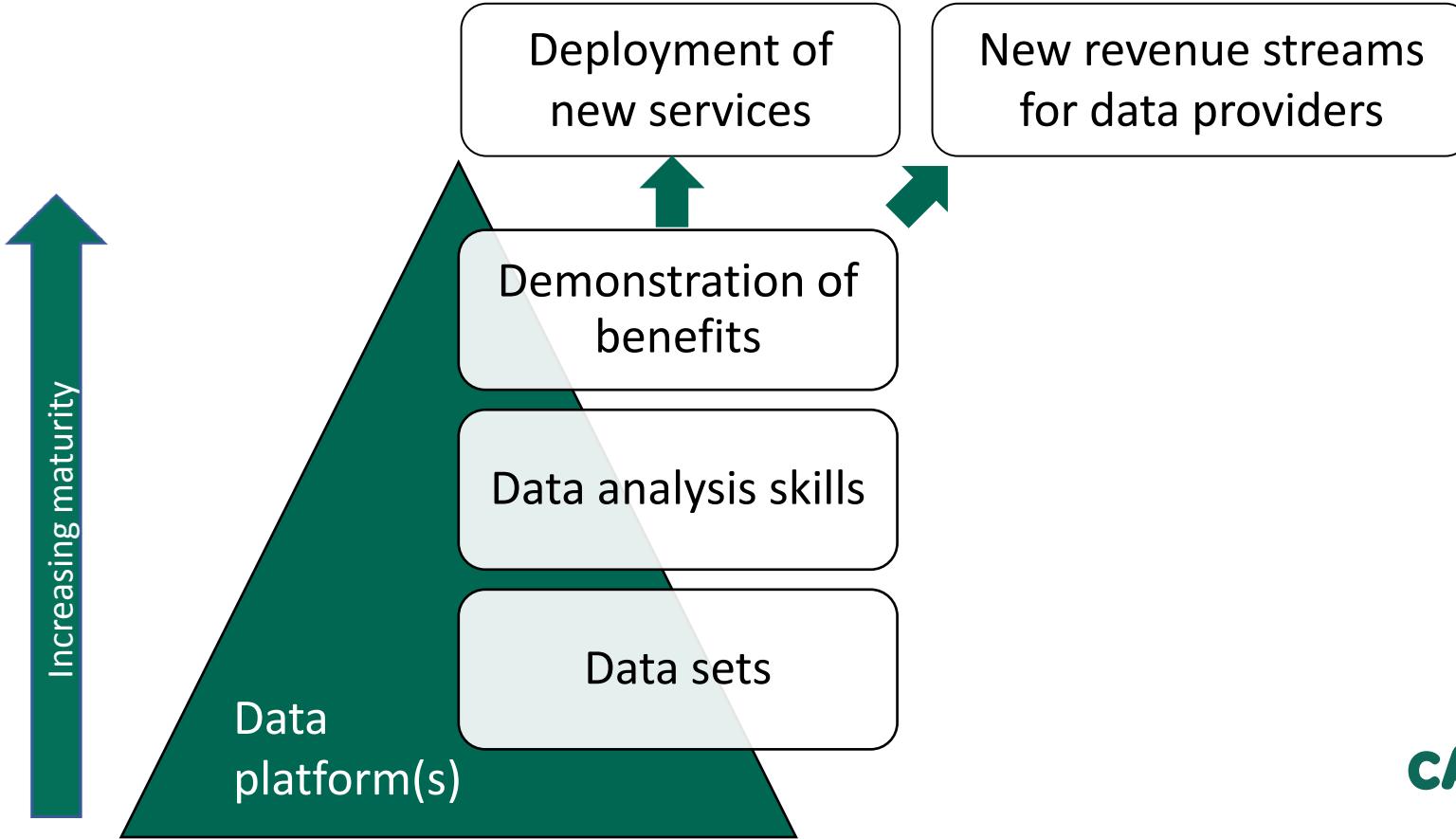
Silo mentality

Confusion about open architecture

People: skills, fears, jobs

Privacy, security, safety & trust

CPC approach



Past & present activities

Roadmap for in-vehicle data



Digital Strategic Road Network

Local Authority Mobility Platform

TfWM congestion reduction

LIFE – ambulance prioritisation

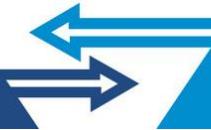
AI Video Analytics

Freight Share Lab



FreightShare Lab is
part-funded by

Innovate UK
Technology Strategy Board



Consortium members



Freight facts

 Empty Running¹ = 30%

Capacity Utilisation¹ = 68%

2/3 of the time is idle for trucks²



Asset Efficiency = 15% - 16%

 20% of all Km driven are by HGV and LCV³



Congestion costs in UK £37billion⁴

 Road transport accounted for 23% of the UK's CO₂ emissions in 2015³

¹ DfT (2016)

² Frost & Sullivan (2016)

³ DfT(2017)

⁴ INRIX (2017)

What is FreightShare Lab?

- Goal is to transform the way we move goods in the UK
- Technology to enable collaboration and sharing of assets
- Collaboration managed by a central authority or “Neutral Trustee”⁵
- The platform facilitates automation of administrative processes
- Gain sharing allocation for active members



What is different from other platforms in the market?



Horizontal
collaboration and
sharing of assets

FSL is a platform
of platforms





```
if operation == "set":  
    mirror.set(x = value)  
    mirror.set(x = False)  
else:  
    mirror.set(x = True)  
  
if operation == "get":  
    mirror.get(x = value)  
    mirror.get(x = False)  
    mirror.get(x = True)
```

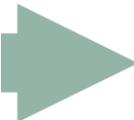
Extra revenue
from
collaboration

What is the underpinning research?

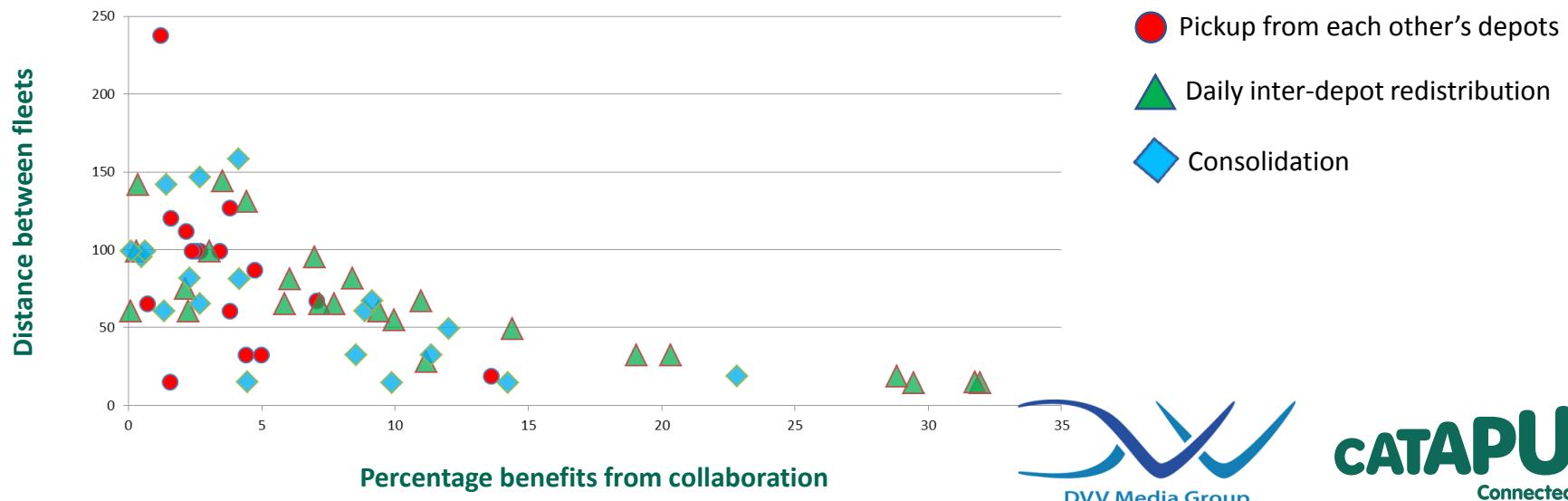


Report in 2016:

Demonstrating the GHG reduction potential of asset sharing, asset optimisation and other measures



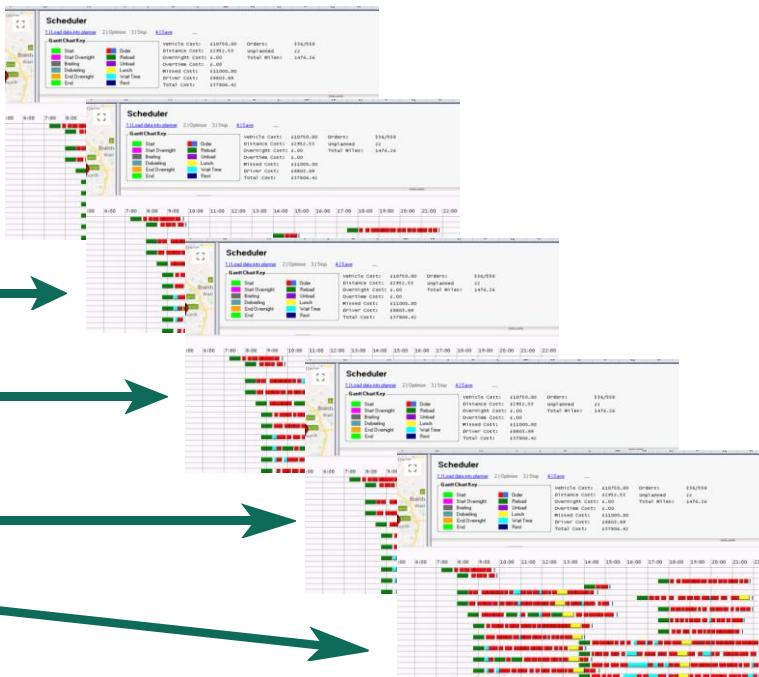
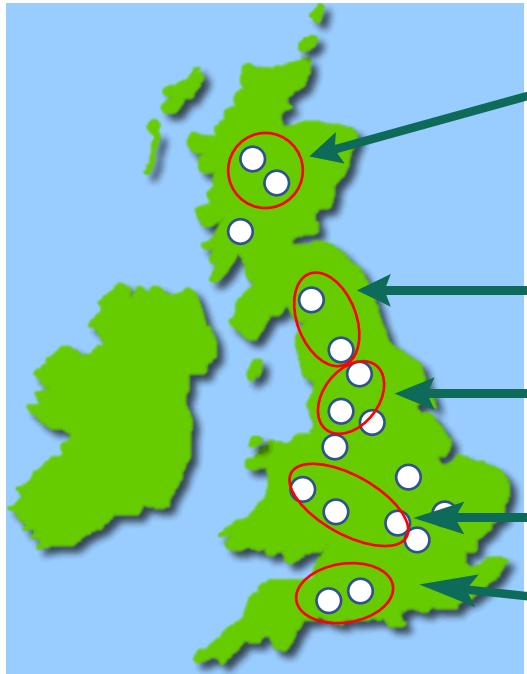
- Modest asset sharing models can save 15% but only being used by 20% of operators
- Highly integrated vehicle and depot sharing can save 20% of cost but only used for 15% of commercial vehicle miles



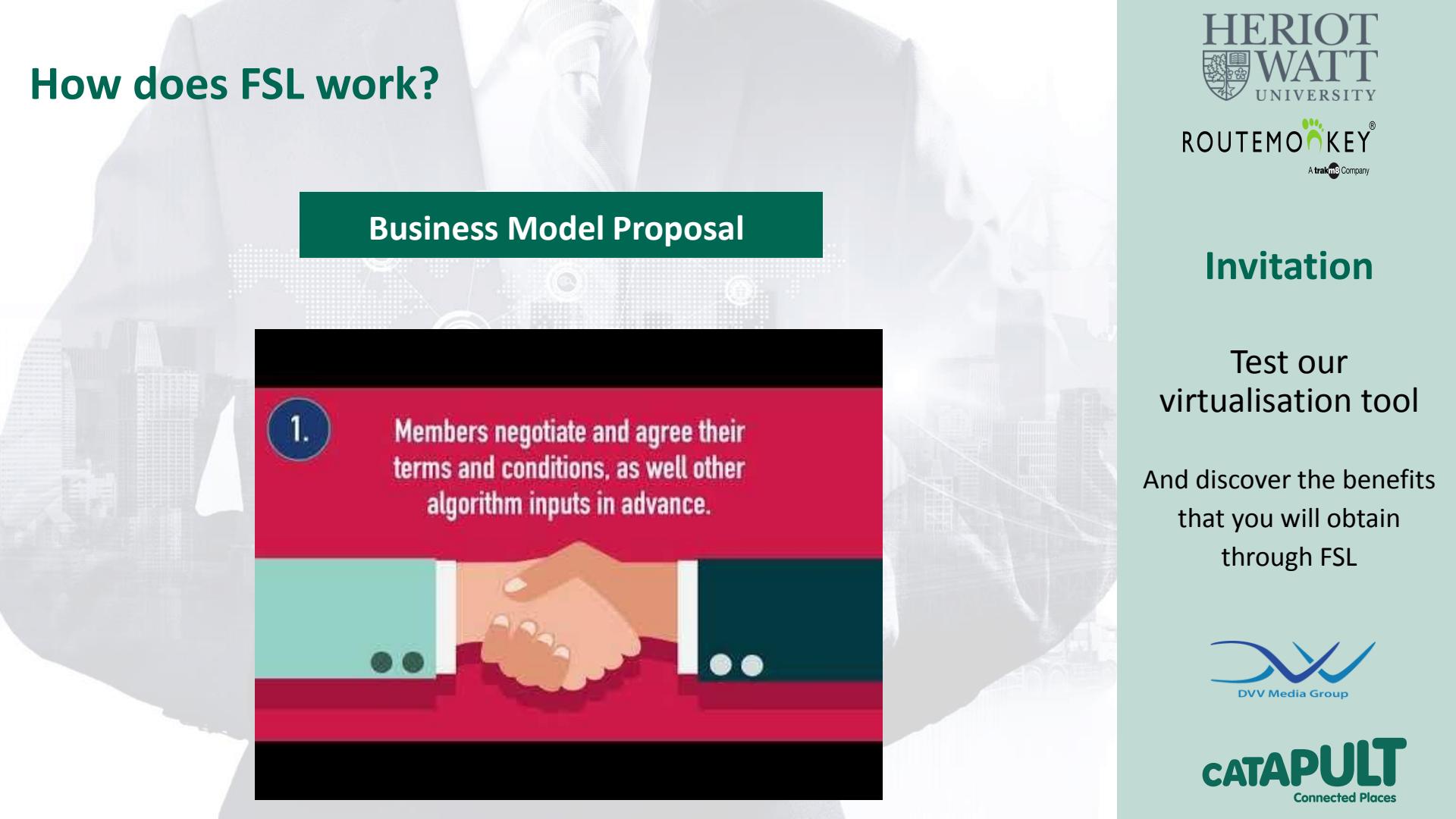
What are the algorithms?

Cluster based on specialised metrics

Solve each group with modified state of the art fleet planner



How does FSL work?



Business Model Proposal

1. Members negotiate and agree their terms and conditions, as well other algorithm inputs in advance.



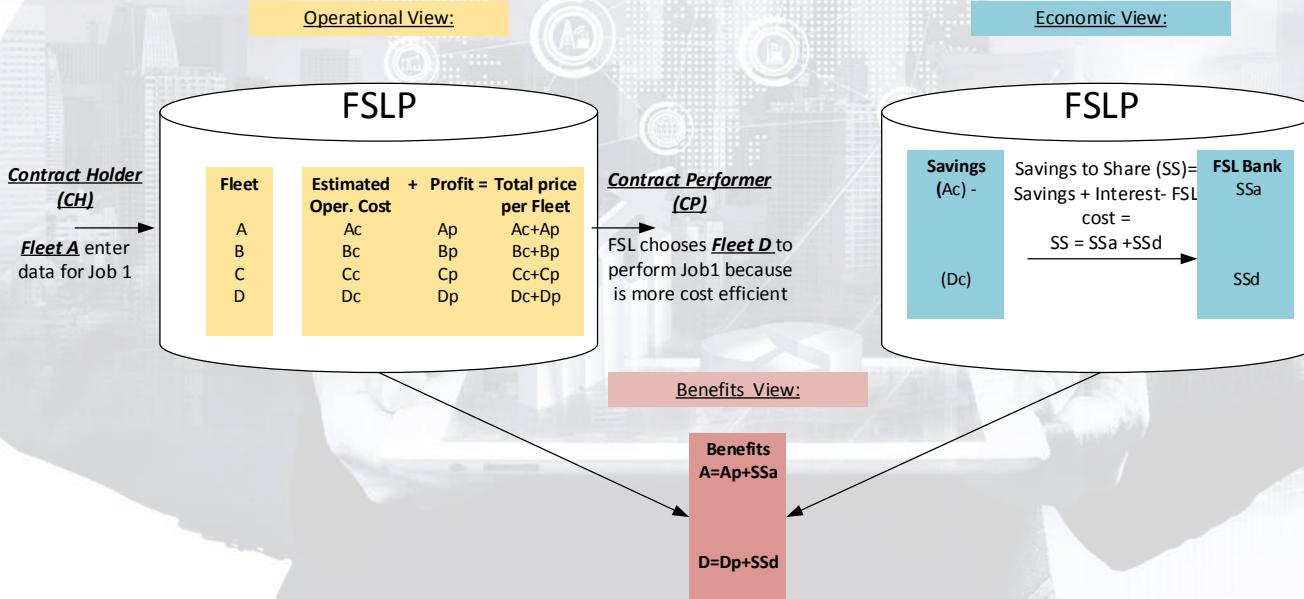
Invitation

Test our virtualisation tool

And discover the benefits that you will obtain through FSL

How does FSL work?

Gain-sharing model



Challenges during the project

-  Operators supportive of the idea but unwilling to share data
-  Telematics data available but could not be used for the trials and simulations
-  Own account operators are excluded due to licensing constraints.
-  Initial goal of real demonstrators had to be re-sscoped to the development of a virtualization tool

- Shows evidence of benefits in a virtual environment
- Avoids the fear of sharing data with competitors
- Gives a glimpse of the economic and environmental benefits
- Establishes trust with the technology and business model
- Prepares the market towards collaboration

Virtualisation Tool

<https://plangreatly.com/fslportal/index.php>

Freight Share Lab: Trial Portal

Learn about Freight Share Lab Upload Your Test Data (see data format)

Data: Choose File | No file chosen Email: email Upload

If you have been notified that your results are ready, click here to see your Gains

Example output

Combined Emissions, distance and utilisation

Category	With sharing	No sharing
distance	3 821	4 028
emissions	221	440
fleet util.	100	100

Gains from Sharing

Sharing Type	Revenue (k£)
No Sharing	5 000
Sharing	9 500

Task distribution

Category	Percentage
Your jobs others carry	20.0 %
Your jobs you carry	60.0 %
Other jobs you carry	20.0 %

ROUTEMONKEY A trakm8 Company HERIOT WATT UNIVERSITY CATAPULT Connected Places DVV Media Group

Online survey to understand customer needs

The screenshot shows a survey page from Motor Transport. At the top, there are links for 'Web Version' and 'Add us to your Safe Sender'. The main heading is 'MotorTransport' with the subtitle 'Motor Transport needs your help!'. Below this, a paragraph explains a project called Freightshare involving various partners. It asks respondents to provide feedback on the project's progress, challenges, and suggestions for improvement. A note at the bottom says, 'We've compiled a short survey and hope you will spare us a few minutes to fill it in. As an incentive we'll have a random draw and three lucky winners will take home £50 of shopping vouchers.' A blue button labeled 'CLICK HERE FOR SURVEY' is present. At the bottom, there is a signature for 'Andy Sitter MD Motor Transport' and the Freight LAB share logo.

First wave
about
identification of
customer needs



Second wave follow
up of those engaged
about future
collaborations

<https://forms.gle/q6k94Z8WB9FyERpc9>

Thank you

Ron.Oren@cp.catapult.org.uk

Alix.Vargas@cp.catapult.org.uk



TDI #12 – Liverpool – Helping Cities Thrive from the Kerb Up

Toby Hiles, Director of Strategic Partnerships, AppyWay

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:





Helping cities **thrive**,
from the **kerb** up

Global problem for cities

Why we're kerb-obsessed



Supply Problem - Cities

Underutilised on & off street parking infrastructure



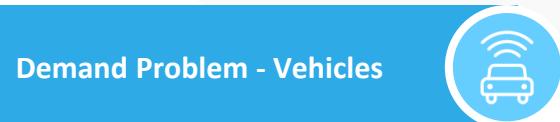
Kerbside abuse from fleets & ride hailing



Outdated processes and tech with large OpEx costs



Air quality & congestion from increased urban migration



Demand Problem - Vehicles

Confusing kerbside rules & restrictions



Painful parking and payment experiences



Punitive fines perceived as unfair & erode trust in public services



Lack of authoritative parking data limits access solutions

Common Problems



There are currently no standardised kerbside maps that exist in the world



Confusing Street Signage and suspensions



Old fashioned paper receipts are issued from P&D machines.



No centralised marketplace means dozens of apps for payments and parking data.



London spends £100m on enforcement and some councils don't cover costs.



*Connected cars will be stupid if the physical and digital infrastructure are not connected.
Who's accountable if a CAV gets a ticket?*

Waiting for loading only, during periods indicated on the sign

Average waiting time



Minimum of two years
if funded by the Council
Maximum of three months
if funded by the applicant

Average implementation time



Eight months

Minimum implementation cost



£4,000



KEY FACTS



PHYSICAL REQUIREMENTS

Parking bay marked with 50mm – 100mm wide broken white lines; white "LOADING ONLY" road marking; sign with loading symbol, may include time limit or times of operation, if applicable.

HOW IT WORKS

Motorists cannot wait in the bay unless actively loading heavy or bulky items.

Blue badge holders can only park in these bays, if they are loading/unloading.

TYPICAL APPLICATION

In town centres and other shopping/business areas where there is a need for regular deliveries.

To reserve kerb space for deliveries.

THINGS TO CONSIDER

Some bays only permit commercial vehicles; if this is the case, Blue badge holders are not exempt.

ENFORCEABILITY

Loading bays are enforced by the Council's Civil Enforcement Officers; any vehicle parked in contravention of the TRO, may be issued with a Penalty Charge Notice (PCN); observation time – 5 minutes.

In Islington loading and unloading of goods is permitted for up to 40 minutes.

Loading and unloading activity is permitted:

- on double and single yellow lines (where there are no loading restrictions in place)
- in resident, shared use and short stay bays

Loading must be continuous

If an enforcement officer sees a commercial vehicle unattended and no sign of loading they will give vehicles up to 3.5 tons five minutes, and 10 minutes for vehicles weighing more than 3.5 tons. If after this time no loading has taken place a parking ticket will be issued.

No observation period is required for personal vehicles.

The 40 minute loading rule does not allow vehicles to park before or after loading. If you need to park for these purposes, you must pay to park in a [pay and display bay](#) or [purchase a permission to park notice](#) from our website.

Restrictions

You cannot load, unload or park in bus lanes or on yellow lines where loading restrictions are in place.

Loading restrictions can be on both single and double yellow lines. You can tell by yellow markings on the kerb and/or an accompanying black and white time plate or sign. Always check the times shown on the signs

Our data

Comprehensive data layers power the AppyParking mobile app (B2C), feed into the Insights tool (B2B/G) and are accessible via a mobility API (B2B2C) that provides accurate and powerful parking information to transport and city planners, parking departments, drivers and fleets.

- **Regulation Maps:** over 450 UK towns and cities mapped
- **Parking Data:** up to 3 cm accurate on-street restrictions
- **Data Insights:** powerful occupancy & revenue analytics
- **Payments:** cashless payments including linear, pay-per-minute tariff engine and One Click Parking™



Traction

Connecting UK Councils to freight & logistics fleets

Goal > Fast becoming the UK kerbside operating system ready for global export.

Global recognition > Europe's most awarded mobility platform.



Asset Management & Access Solutions

Insights
Real-time and historical sensor data for Local Authorities

Smart Car Parks
Real-time and historical off-street data for car park operators

Engagement
Dashboard for Local Authorities to view and manage feedback

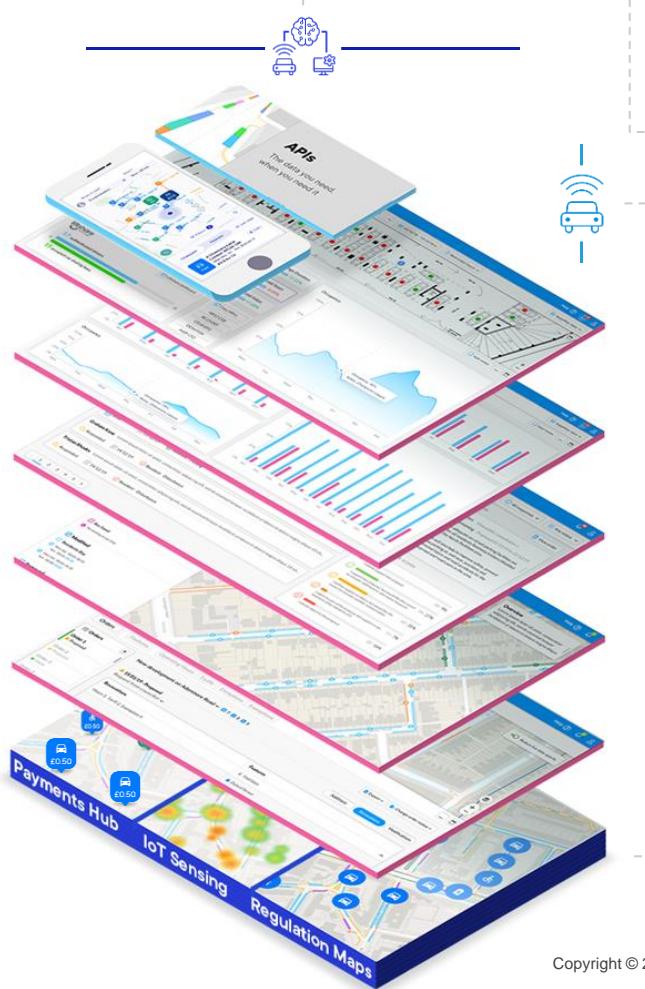
Public Consultation
Public view of traffic orders to enable submission of feedback

Mapper
GIS tool for creating and managing map based traffic orders

Smart Parking

AppyKerb

B2B
B2G



Platform usage creates valuable flywheel of insights to asset managers and fleets to drive operational efficiencies.

API's & SDK's
Mobility solutions for seamless kerbside access & compliance

Mobile App
Data showcase POC

Mobility base data
Harmonised and standardised regulation maps, IoT sensing and payment hub essential for cities and connected vehicles to interact.

Explorer

Filter

JSON

Preselected filters

 Paid Bays (evening) Disabled Bays Paid Bays (morning)

Time

15:00

16:00

Vehicle Preferences

Default vehicle

Default fuel type

Permits

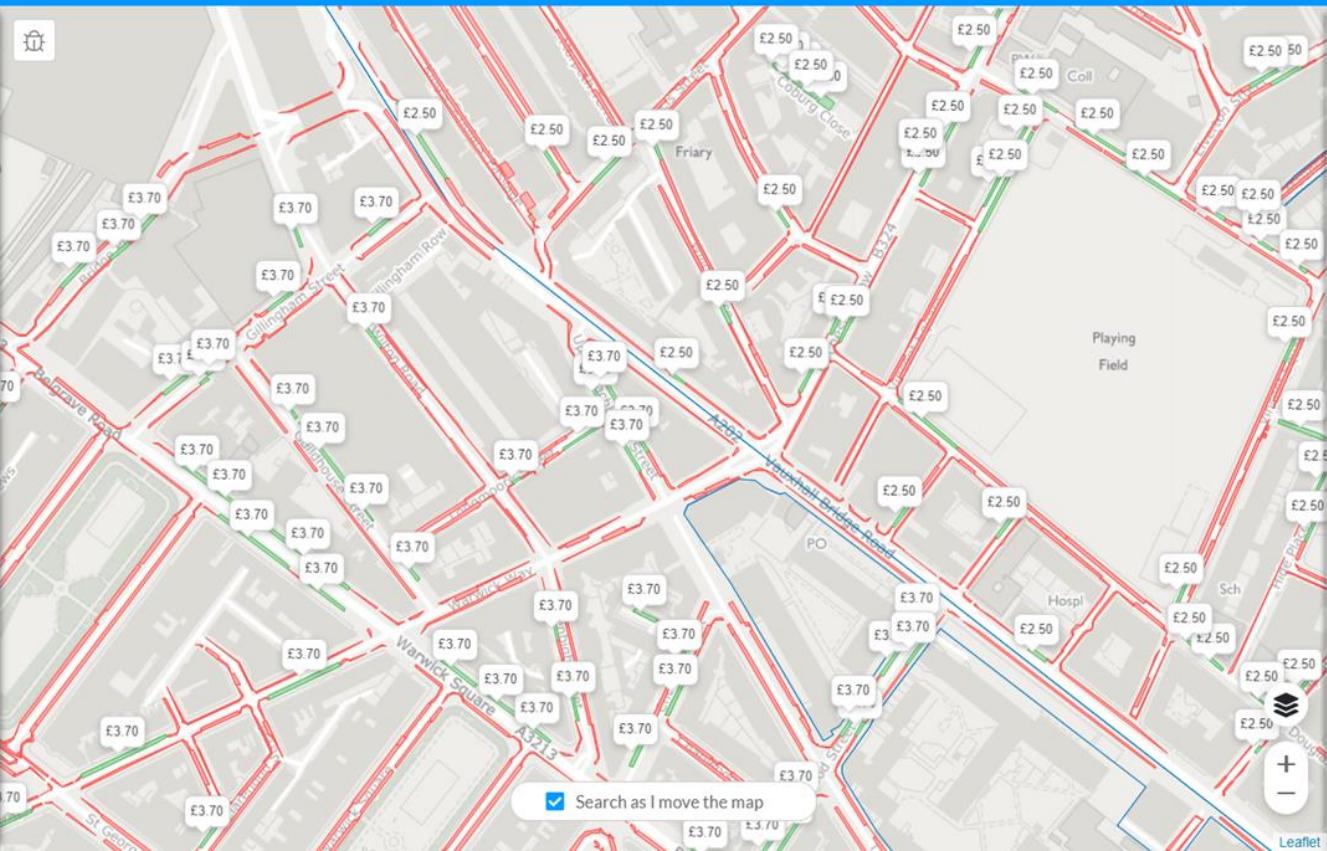
- Resident
- Blue Badge
- White Badge
- Green Badge
- Red Badge
- Purple Badge
- Car Club
- Business

- Doctor
- Hospital
- Hotel
- Supreme Court
- RNLI
- Diplomatic
- Visitor

Filters

- Free parking
- Paid parking

Search



Addressing the problem

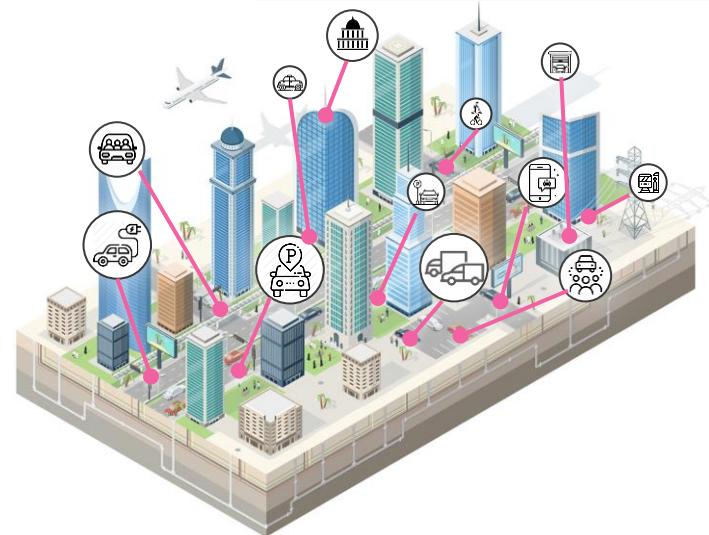
How can we help cities thrive?

Short Term

Empower cities to transform static parking assets into a digital and dynamic commodity ready for the demands of intelligent transport.

Long Term

Provide an Urban Autonomous Kerbside Access Management (AKAM) system enabling authorities to equitably and sustainably manage and monetise their kerbside infrastructure.



Data enabled solutions

Last Meter Navigation™

Via access to AppyWay's mobility API, operators and developers are provided with the data needed to build industry leading tools such as our Last Meter Navigation™ solution.



Authorities are the gatekeepers

Managing traffic regulations via web-based Mapper tool instantly updates publicly available restriction data in standardised and compatible format.

Consistent development

Mobility APIs output consistent restriction data and the AppyWay platform can learn and then inform developers with solutions that best solve customer needs.



Innovation and PoC's

Future Ready Digital Traffic Order Management

Next generation digital traffic order management solution, funded by Innovate UK and developed in partnership with three UK authorities.



Streamlines processes for creation & editing of kerbside restrictions



Lead & promotes collaborative data standardisation programmes (APDS)



Enables kerbside restriction data standardisation to drive mobility adoption

The screenshot shows a software application titled 'Mapper' with a map of 'Kensington & Chelsea'. A callout box highlights a 'Paid Bay' location with operating hours from 09:00-20:00 and 05:00-08:00, Monday to Friday. Below the map is a table with columns for Zone, Restriction, Hours, Tariff, Exceptions, and Suspensions. The table lists several entries, including 'Zone A' with a 'Paid bay 12345' restriction and 'Resident bay' zones on 'Scrutton Street 1' and 'Old Street 3'.

+83% efficiency



Live - Smart Parking & Payments

A powerful kerb and car park management solution providing cities with full insights and control while offering drivers real-time availability and automatic pay-as-you-go parking. The consumer centric result removes parking meter anxiety and encourages shoppers to stay longer on the high street.



Enhanced user experience:

- Improves convenience, saves time and money
- Alleviates stress of finding parking
- Linear rates mean users pay only for time parked



Digital transformation & data insight:

- Full visibility of kerbside demand and utilisation for the first time
- Consolidated revenue performance
- Intelligent enforcement
- Actionable insight to drive and support policy agenda



Harrogate
BOROUGH COUNCIL

Portsmouth
CITY COUNCIL

City of Westminster

Dundee
City Council

Appy Platform



Management



Access



Optimisation

Problem:

- Authority spends £1.6m p.a. on parking services
- Parking assets are underutilised
- Drivers circling to find parking
- Pollution & congestion
- Dying high streets & shop closures

12 month outcomes:

- 10% driver adoption
- +50 minutes longer parking durations
- +£1.4m annual economic uplift
- 42,873 less miles driven
- New parking policies from data insights

Transforming user experiences and empowering authorities with data insights

Build

5G parking availability detection in West Midlands

In collaboration with TfWM, West Midlands 5G and a survey partner, we are developing a high resolution off-board image exchange, using a survey vehicle with video and rapid capture photography.

AppyWay ingests the data and uses artificial intelligence to verify the availability of the parking space by type, restriction and duration - through 5G and in real-time. The 5G enables large data off vehicle and low latency to support consumer demand.

We then make this data available through a MaaS app/service for end-users. We also monitor the data through our insights platform, which TfWM uses for operations and planning.

This is an initial 2-3 month pilot project that, if successful, will feed into a second phase proof of concept to demonstrate a scalable use case with a fleet partner (e.g. Royal Mail, DPD, etc).



Vehicle equipped with image surveying technology



Data ingested by AppyWay, verified as "parking"



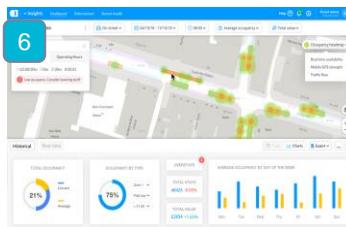
Scanning for available kerbside spaces



Location promoted to MaaS service



Parking availability image sent V2X via 5G along with Lat / Long data



Monitoring information fed to insights platform & other transport analytics

Use Case

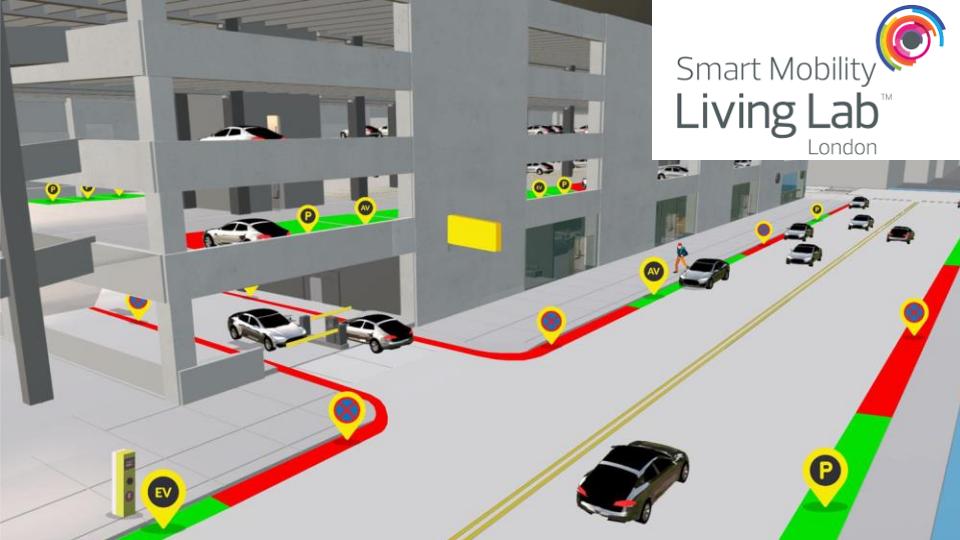
Live - PARKAV

Automated valet parking (AVP) is a key feature required for level 3, 4 and 5 connected and autonomous vehicles (CAV). This is because CAV passengers will not be concerned with parking after they have been dropped off - instead, they will expect vehicles to look after themselves. But if the vehicle does not have another passenger to pick up or a freight-related journey to attend to - the question becomes: where does it go ?

The vehicles could circulate the road network, waiting for the passenger to request their next journey - but this is a suboptimal solution. It will contribute to congestion, emissions and reduced electric vehicle range. Instead, it is likely that different forms of parking will be required - for loading and unloading, dropping off passengers, short-term and long-term parking, and recharging stations.

But how will this work? What are the space requirements and the technology considerations? How might AVs be cleaned and recharged ahead of their trip? This will require vehicle access to services both on and off street - and payment for these services will need to be holistic and integrated.

AppyWay, together with Jaguar LandRover, Coventry City Council and Milton Keynes have developed the data exchange and business model, called ParkAV, which aims to provide these AV parking solutions to MaaS operators and customers. The project concludes and the results made public in March, 2020. Stay tuned!



Appy Platform



Management



Access



Optimisation

ParkAV explores the use of dynamic kerbside when integrated within a mobility providers ride hailing service over a 10 year period

Solutions:

- Architecture for a single point of interface to operators
- Flow of Money to maintain customer experience inside a single transaction and, pay all providers to the service (Storage / EV)
- Understand the data exchange to deliver the service (EV charging to MaaS vehicles)

City and parking support to MaaS operators and AV's.



Toby Hiles
Director of Strategic Partnerships
toby.hiles@appyway.com
07980 611575
<https://appyway.com>





TDI #12 – Liverpool– Panel Discussion

26th February 2020 – The Royal Liver Building, Waterfront, Liverpool L3 1HU

Platinum Sponsors:

Gold Sponsor:



Bronze Sponsors:





TDI #12 – Liverpool– Speed Dating

26th February 2020 – The Royal Liver Building, Waterfront, Liverpool L3 1HU

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



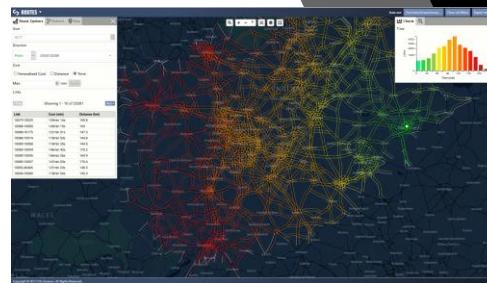
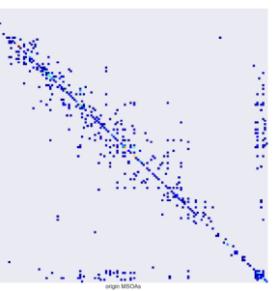
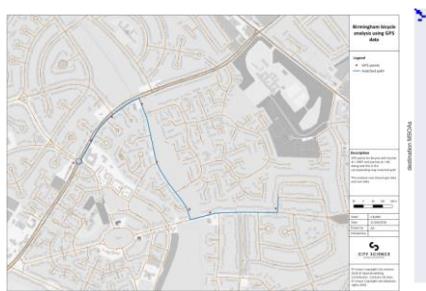
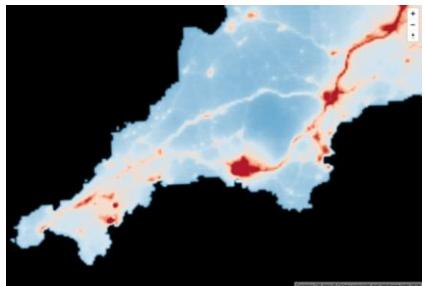


CITY SCIENCE
endless possibilities

FREIGHT DATA

CITY SCIENCE EXPERTISE & EXPERIENCE

- Decarbonisation
- Air Quality
- Data Capture
- Modelling & Simulation
- Strategy



Cargo bikes & e-bikes become wide spread for daytime deliveries, utilising cycle paths



Range of autonomous vehicles make last-mile deliveries at night



Dr Huw Davies

My research interest is ‘innovation in transport policy and practice’. Specifically, the development of innovative solutions that facilitate technology diffusion and address public policy concerns.

It is multi-disciplinary, linking engineering, social sciences and business. Focus areas are vehicle safety, transport decarbonisation and connected and autonomous vehicles.

Example Project Activity

- Assessment methods for connected and autonomous vehicle safety
 - £13million CAV test bed (innovate UK - Horiba MIRA / CU)
- Improvement in road safety
 - Development of next generation crash tests (UK DfT and EC)
 - Improvement in injury measurement (RST; WMP)
- Promotion, improvement and uptake of electric vehicles
 - Impact of policy decisions upon technology diffusion (UK DfT; EC; IEA-HEV)
 - Impact of new modalities upon business models e.g. charging infrastructures (UNDP)

Profile

- 25 journal papers covering vehicle regulation, safety, design and electrification
- 37 national and international conference presentations
- Authored book chapters on electric vehicles, vehicle safety and vehicle regulation



Freight Driver - Diversion Routes

Airsan placed at roadside together with variable message signs, can communicate real-time diversion times to drivers. This can prevent lorry drivers entering into diversion routes that could increase their drive time, meaning their tachograph could run out

Freight Companies - Stowaways

Airsan installed inside trucks can pick up Mac addresses and alert the driver to stowaways that have boarded the truck.



Councils - Air Pollution

Airsan monitors air pollution, to monitor the effects of the Freight Transport idling in cities. Combining congestion monitoring, air quality, acoustic sound.





eventually
everything
connects



Neil Herron, CEO & Founder.

20 years experience running delivery fleets & 10 years
experience improving parking policy & operations.

At Grid, we're interesting in taking a close look at our city kerbside, from the gutter up! We really want to better understand how people interact with the kerb, and discuss what we can collectively do at the kerb to make our cities run more efficiently, with less congestion, whilst improving air quality.

DISCUSSION POINTS:

- **What type of freight operator are you?**
- **What access to the kerb space do you need?**
 - **Dwell time?**
 - **Proximity to drop?**
- **Are PCNs an issue?**
- **Barriers to EV adoption?**

Antony Swift, Project Lead, *England's Economic Heartland*



A transport planning professional with around 10 years' local government experience. Most recently authored Buckinghamshire County Council's Freight and Logistics Study.

Interested in developing the following:

- How are other public/private sector organisations delivering strategic freight solutions using data?
- How are other public/private sector organisations delivering freight solutions through the planning process?
- What case study examples do we/you have?

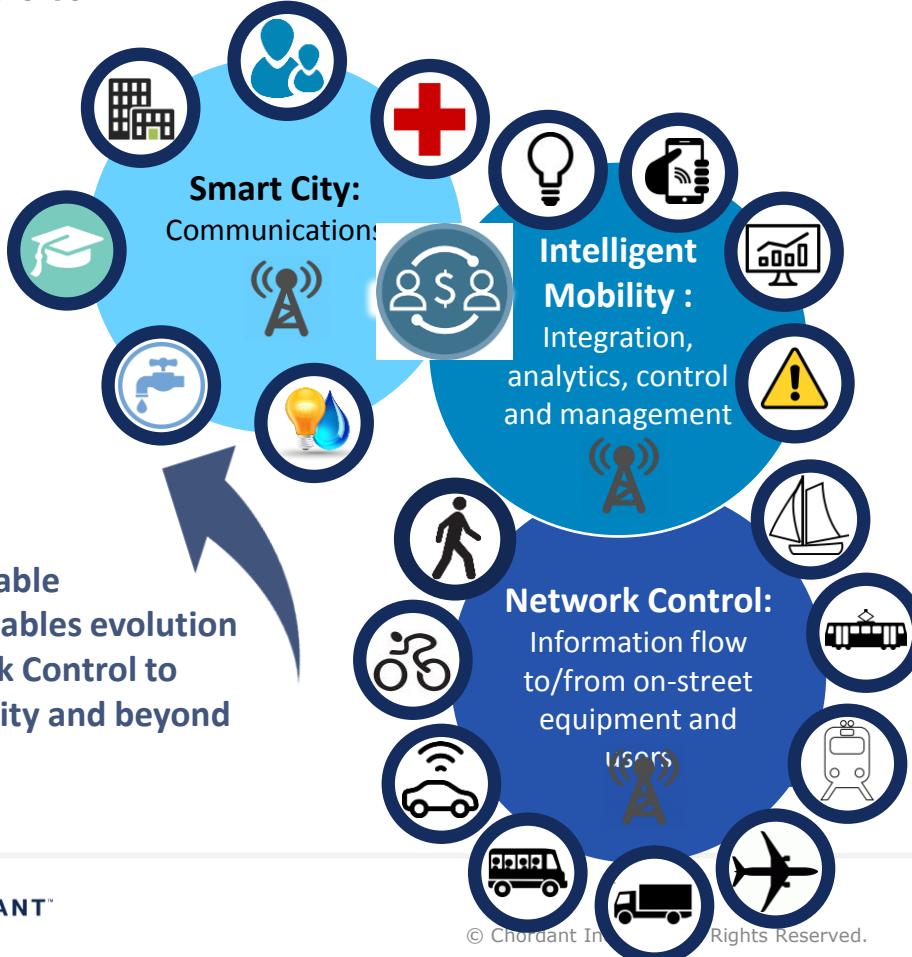


Toby Hiles Director of Strategic Partnerships, AppyWay

Speak to me for:

- Using Data for Mapping, Parking Data and processing payments.
- Creating a central kerbside management for global export
- Connecting Local Authorities and, Freight and Logistics fleets of operators / professionals
- We have global recognition as Europe's most awarded mobility platform

What does Chordant do: Unlocking value from data



Chordant provides a **Neutral Digital Infrastructure** for equitable **Data Sharing** to support future **Mobility Services** such as:

- Smart Corridors & Communities
- Intelligent Freight and Automotive solutions
- Control Transport Data Sharing
- Active Micro-Mobility services
- Intermodal Integration
- Smarter Strategic Network Control – efficiencies
- Air quality control
- Prioritisation and utilisation
- Connected & Autonomous Mobility



TDI #12 – Liverpool – Master of Ceremony Event Close

Simon Topp, Chief Commercial Officer, Elgin

Platinum Sponsors:



Gold Sponsor:



Bronze Sponsors:



Event Close

- Thank you to everyone for attending
- The entire days recordings will be live on YouTube by the end of this week
- Tom will be collating and distributing all slides along with an attendee list, plus an event synopsis in the near future.
- Please fill out your feedback forms if you haven't already
- Safe travels home, see you in Cambridge!