Benefits of Data Collection to Alleviate Costs of Transportation.

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www.data4action.eu
Co-funded by the Intelligent Energy Europe Programme of the European Union

3rd June 2015

Presented by Barry Lyons

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Commercial Vehicle Market Size

Reference ISMI New Registrations 2005 -2014

Heavy Goods Vehicles

Total Number 27, 563

Average Annual Distance 2,205,000,000 Km

Average MPG 8.75mpg

Coaches & Buses

Total Number 2,377

Average Annual Distance 190,160,000 Km

Average MPG 9.75 mpg

Light Goods Vehicles

Total Number 224,081

Average Annual Distance 6,109,240,000 Km

Average MPG 20.5 mpg

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Fuel Demand

Estimated Road Freight Fuel Usage in 2013

€ 700,000,000

HGV Vehicles Registrations Increased 13% on 2013

Registrations at 1/3 of Peak of 2006

HGV's and Coaches Account for approximately 40% of diesel fuel in road transport.

Ref ISMI New Vehicle Registrations 2014 & SEAI Energy In Transport 2014 Report

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Transport Costs

Admin Staff and Drivers

Recruitment, Training,

Wages, Retention

Vehicles

Cost, Maintenance, Insurance

Consumables, Information Technology

Fuel

Vehicle , Additives

Ancillary Power Units

Data Drives Efficiencies

- **Route Planning**
  - Minimise Excess Mileage
  - Maximise Load Capacity
  - Maximise Vehicle Utilisation
- **Vehicle Performance**
  - Monitor Performance History
  - Maintenance Scheduling
  - Reduce Downtime
- **Driver Behaviour**
  - Vehicle Handling
  - Time Management
  - Wellness Management

Data Management

Fleet Productivity & Asset Management

CAN bus

Is a controller area network (CAN) through a specialised internal communications network (Vehicle Bus) that allows microcontrollers to communicate with one another with out a host computer.

Fleet Management System (FMS)

Six major European truck manufacturers agreed a communications standard to make the surveillance of a fleet over the internet possible.

FMS Info

1	Cruise Control Status
2	Power Take Off Position
3	Engine Speed
4	Fuel Level
5	Accelerator Position
6	Fuel Consumption

Telematics Info

1	Speed
2	Direction
3	Rate of Acceleration
4	Speed of Braking
5	Speed of Cornering
12	Distance and Time

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Planning - GPS Tracking

Fleet Productivity & Asset Management

- Precise Vehicle Location
- Traffic Conditions
- Road Works
- Speed Limits
- Low Bridges
- Weight Restrictions
- Height Restrictions

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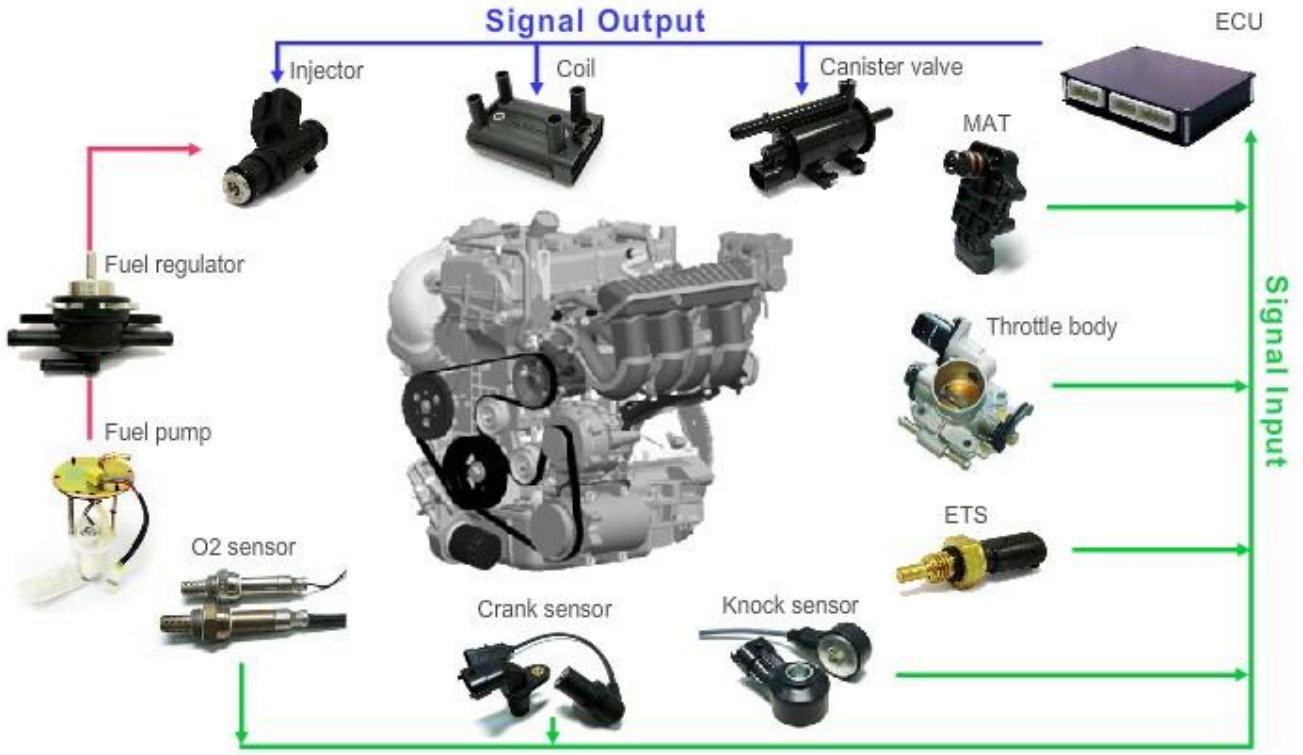
Vehicle Telematics

Vehicle Performance Data

- Engine Speed
- Braking Performance
- Transmission Function
- Engine Performance
- Fuel Consumption
- Adaptive Cruise Control
- Maintenance Schedule



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Driver Behaviour Monitoring

- Harsh Braking
- Harsh Acceleration
- Lane Departure
- Driving Time
- Rest Time
- Cruise Control
- Walk Around Check

If it can be Measured it can be Managed

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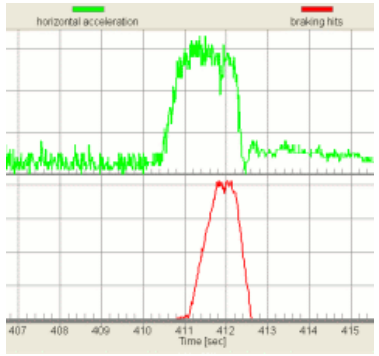
Driver Behavior Assessment Tools



Harsh Braking

Is monitored on a daily basis and recordings can be effected by types of work, terrain and load.

Engine Idling

Drivers can become complacent when it comes to proper use of an engine.

Over Revving

Can cause unnecessary engine ware but it can also highlight the drivers lack of understanding of how to get the best out of a commercial diesel engine.

MPG

Many variables require detailed investigation to provide accurate results. Total vehicle fuel consumption and distance travelled over time is the most accurate.

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Factors Effecting Excessive Fuel Consumption

1	Driver	7	Speed
2	Aerodynamics	8	Weather
3	Vehicle Specification	9	Terrain
4	Vehicle Maintenance	10	Driver Accessories
5	Tyre Husbandry	11	Route Planning
6	Load Positioning	12	Customer Requirements

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Creating A Professional Driving Culture

Case Study Dec 2014

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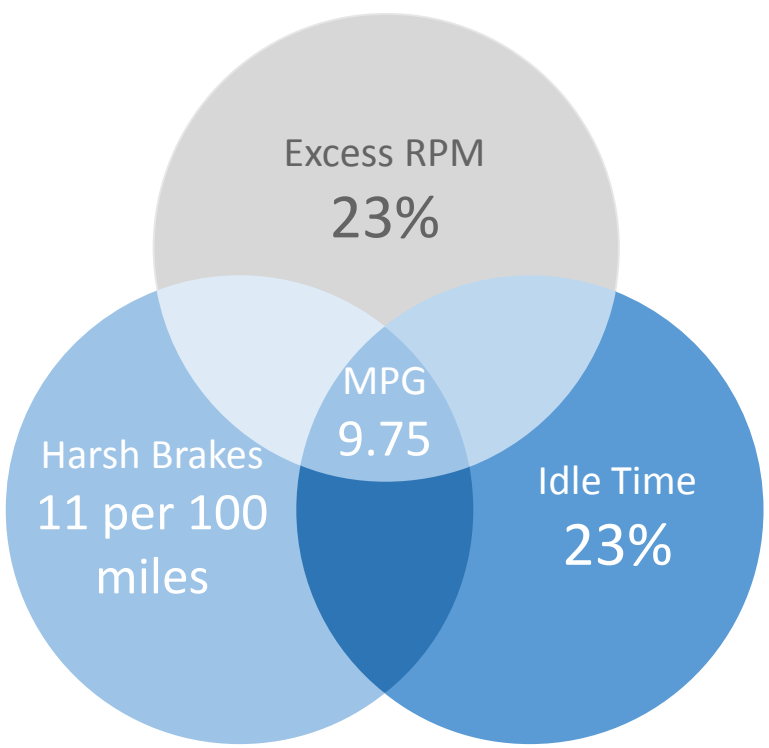
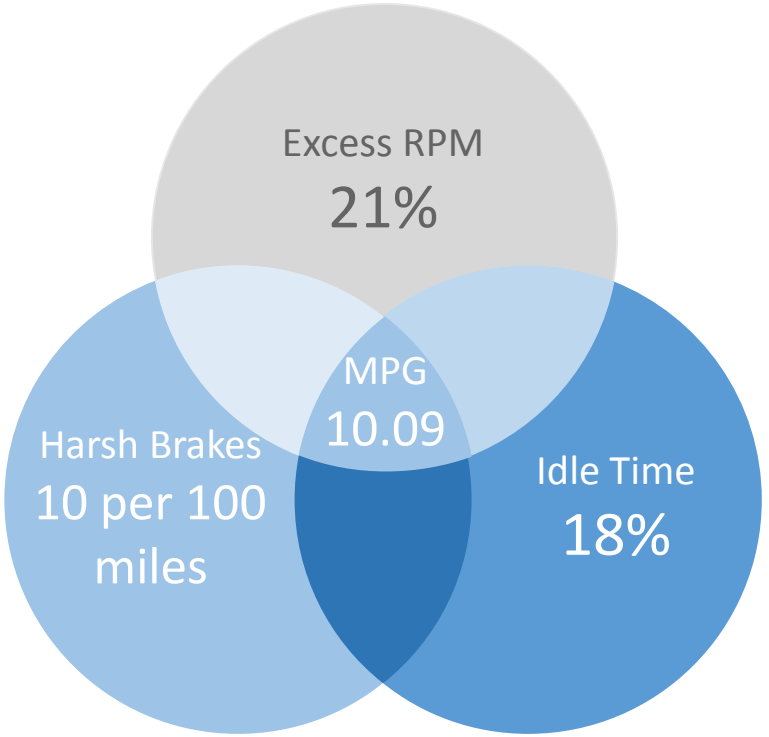
Key Performance Indicator Averages

Comparison of Key Performance Indicators Pre Training and Post Training

Before Training



After Training



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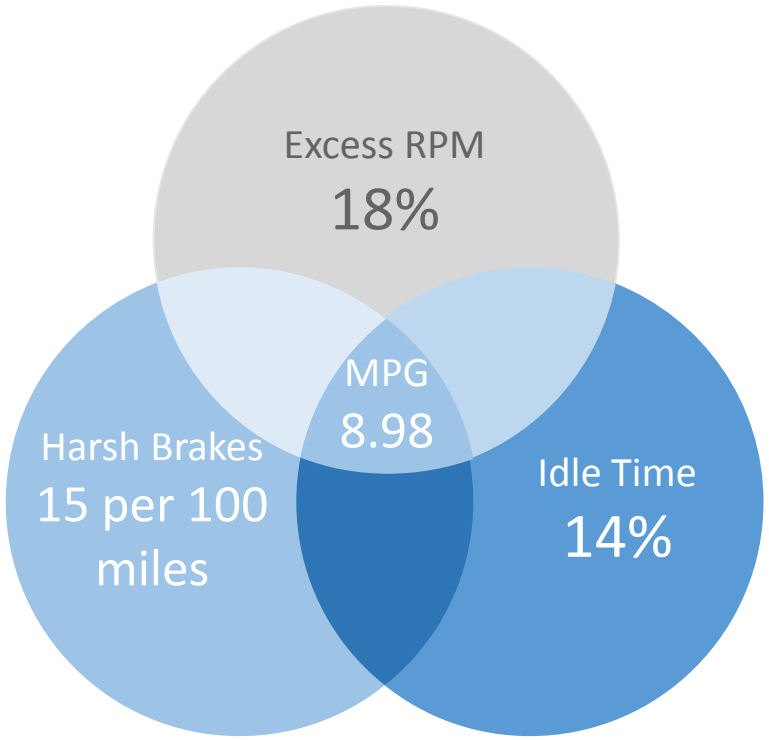
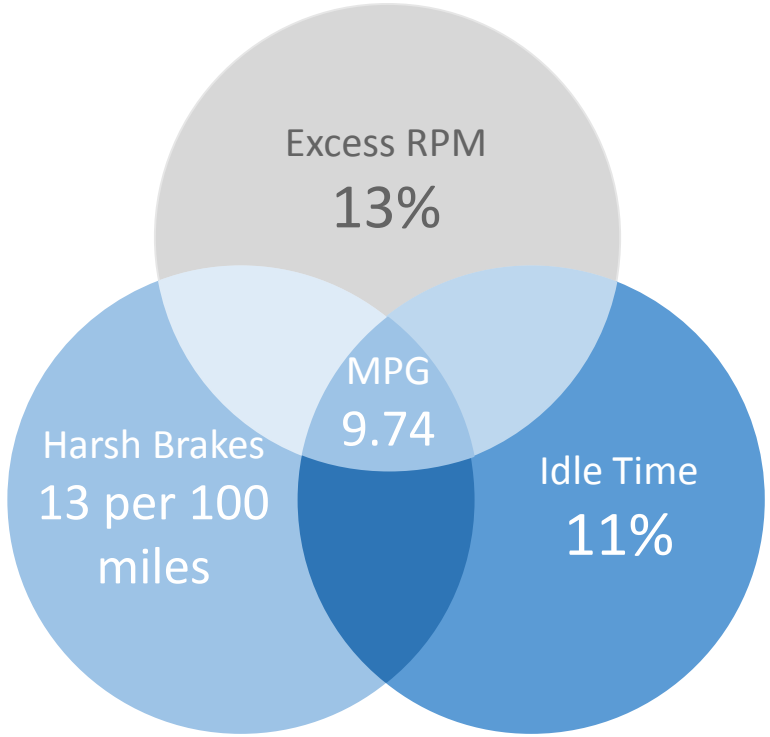
Key Performance Indicators

Comparison of Key Performance Indicators of Sample Driver who Improved After Training

Before Training



After Training



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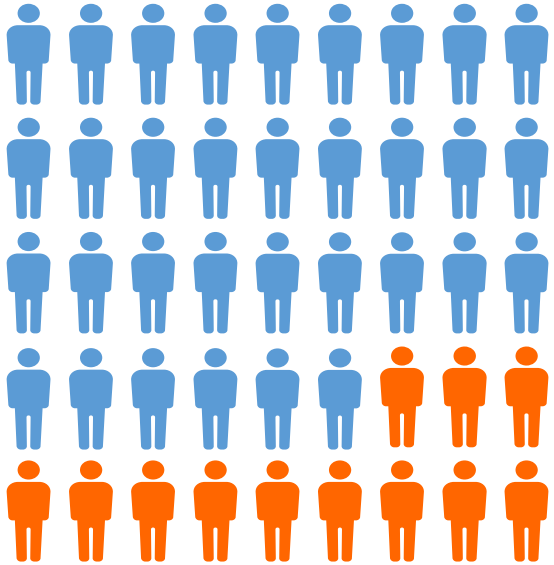
MPG Result

Number of Drivers Trained = 45



Improved MPG 73.33%

No Improvement MPG 26.66%

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Breakdown of MPG improvement

Greater than 10% improvement	6
Greater than 5% improvement	9
Greater than 1% improvement	16
No improvement	3
Greater than 1% deterioration	6
Greater than 5% deterioration	2
Greater than 8% deteriorated	4

Variables Effecting MPG

Weather Conditions

Poor Traction

Cab Heating

Seasonal Load Variation

Additional Weight

Terrain

Vehicle Maintenance

Poor Power Generation

Tyre Husbandry

Driver Performance

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Silence is Golden

Idling

Costly

Environmentally Damaging

Oil Reserves Are Not Renewable

Estimates

USA 2 Billion Gallons Per Year. (2006)

Canada 650 Million Gallons Per Year (Light Commercials)

Focused Training

A Second Phase of Training Designed to Address the Following

Engine Idling

Expand the over revving review top the vehicle application. Reinforce the Professional Driver Technique for maintaining satisfactory levels of Engine Idling

Over Revivng

Review vehicles that continually exceed an above average level of over revving. Reinforce the mechanical principle relating to engine revving.

Harsh Breaking

Examine load Capacity Review Driver Performance Increase Point Deduction for Harsh Breaking.

Training

Expand on the Correspondence with Drivers through the Driver Weekly Report Provide additional Professional Driver training.

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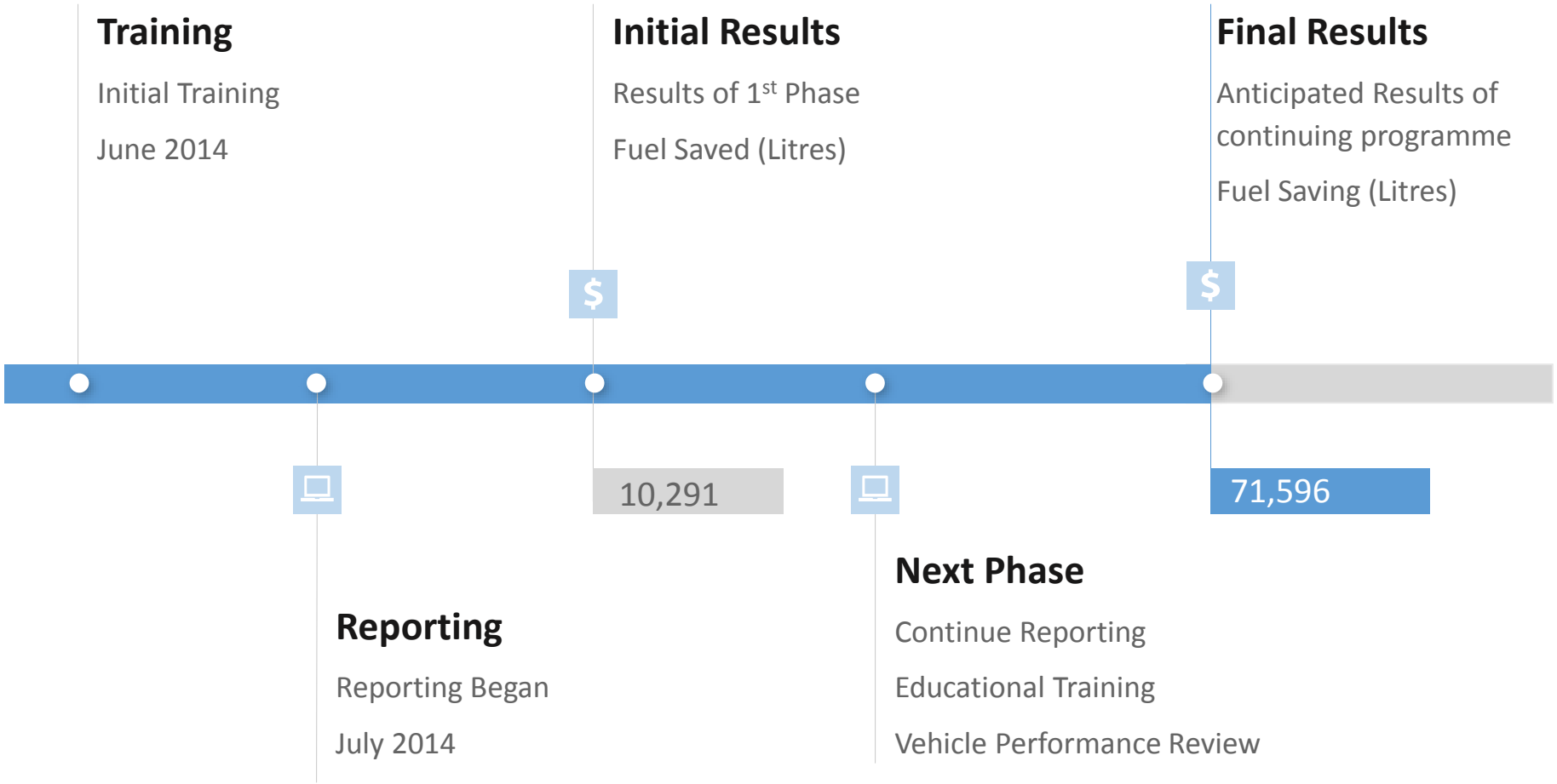
Timeline

Fuel Performance Outcomes and Prodictions



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Benefits From Using Data

1	Professional Driving Culture	6	Reduction in Damaged Product
2	Reduced Mileage	7	Increase Vehicle Residual Values
3	Informed Fleet Selection	8	Reduced Maintenance Costs
4	More Deliveries & Collections	9	Environmentally Friendly
5	Fewer Insurance Claims	10	Reduce Fuel Consumption

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Many Thanks For Your Attention

Barry Lyons

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