

Traffic Control, Communications Systems and  
Traveller Information for Public Transport and  
Freight Logistics Conference

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# On-Bus Communications Trial

Connexionz UK

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# Introduction to sub-project

- Upgrade positional and other data capture from on-bus Automatic Vehicle Location units used in Reading RTPI
- Use of wireless communications from moving vehicles

FOR MORE INFO...

[www.connexionzuk.com](http://www.connexionzuk.com)

[www.reading-travelinfo.co.uk](http://www.reading-travelinfo.co.uk)

# Project Goals

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- **Demonstrate technical feasibility of alternative communications architectures in a new On-Vehicle Server unit**
- **Deliver enhanced travel data to common database for re-use**
- **Demonstrate the potential to deliver more sustainable patterns of travel**

# Description

- **New on-vehicle hardware – OVS**
- **New on-vehicle and server software**

**FOR MORE INFO...**

**[www.connexionzuk.com](http://www.connexionzuk.com)**

# On-Vehicle Server

- New Hardware / Software
- Multi-Radio Support (for own + 3<sup>rd</sup> party use)
- 3G Support
- Robust Design
- Simplified Maintenance
- Extensible



# Software / Functionality Enhancements

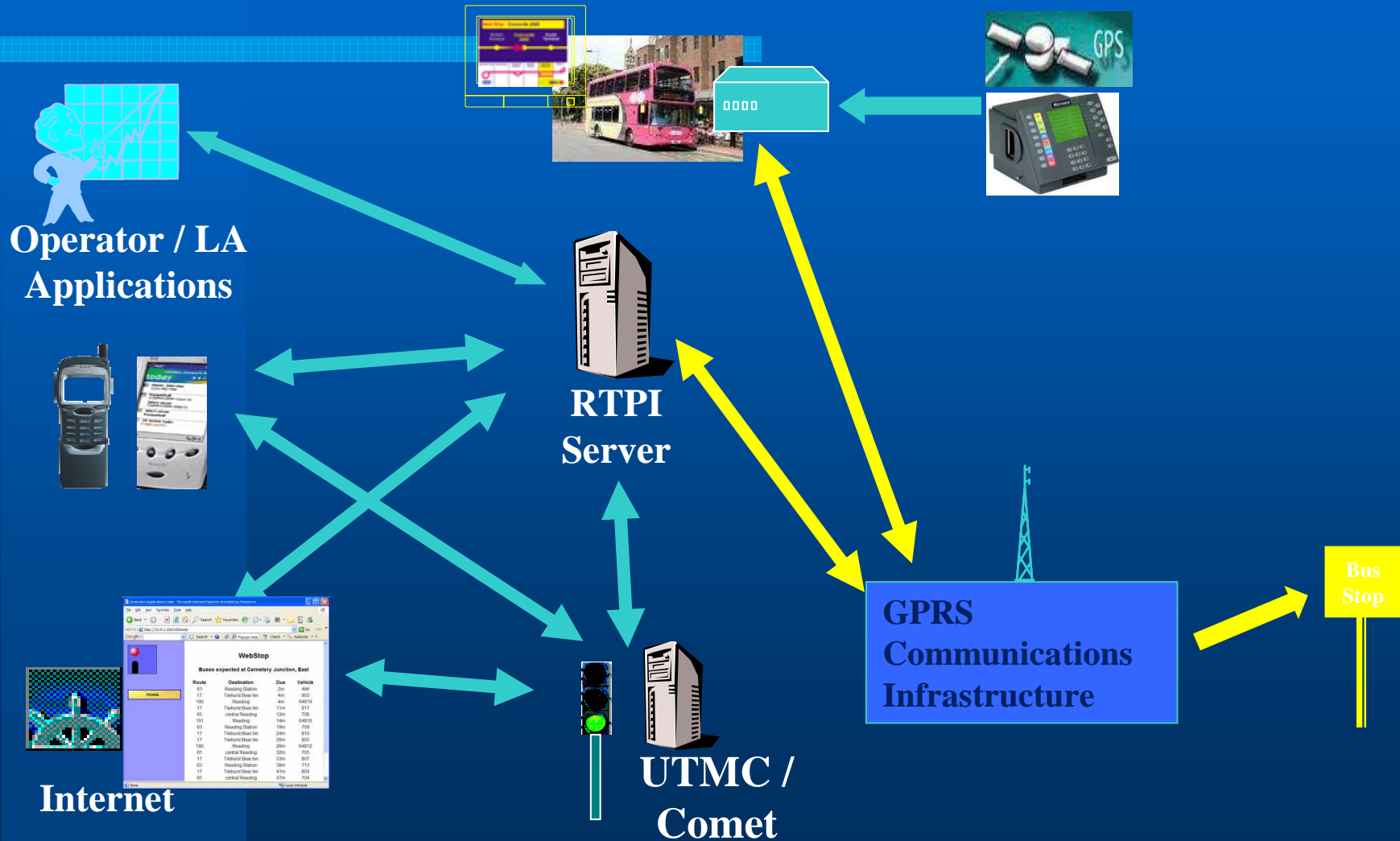
## On-Vehicle

- Intelligent Multi-Radio Support
- “Wake-up” for in-depot use
- Extended media support

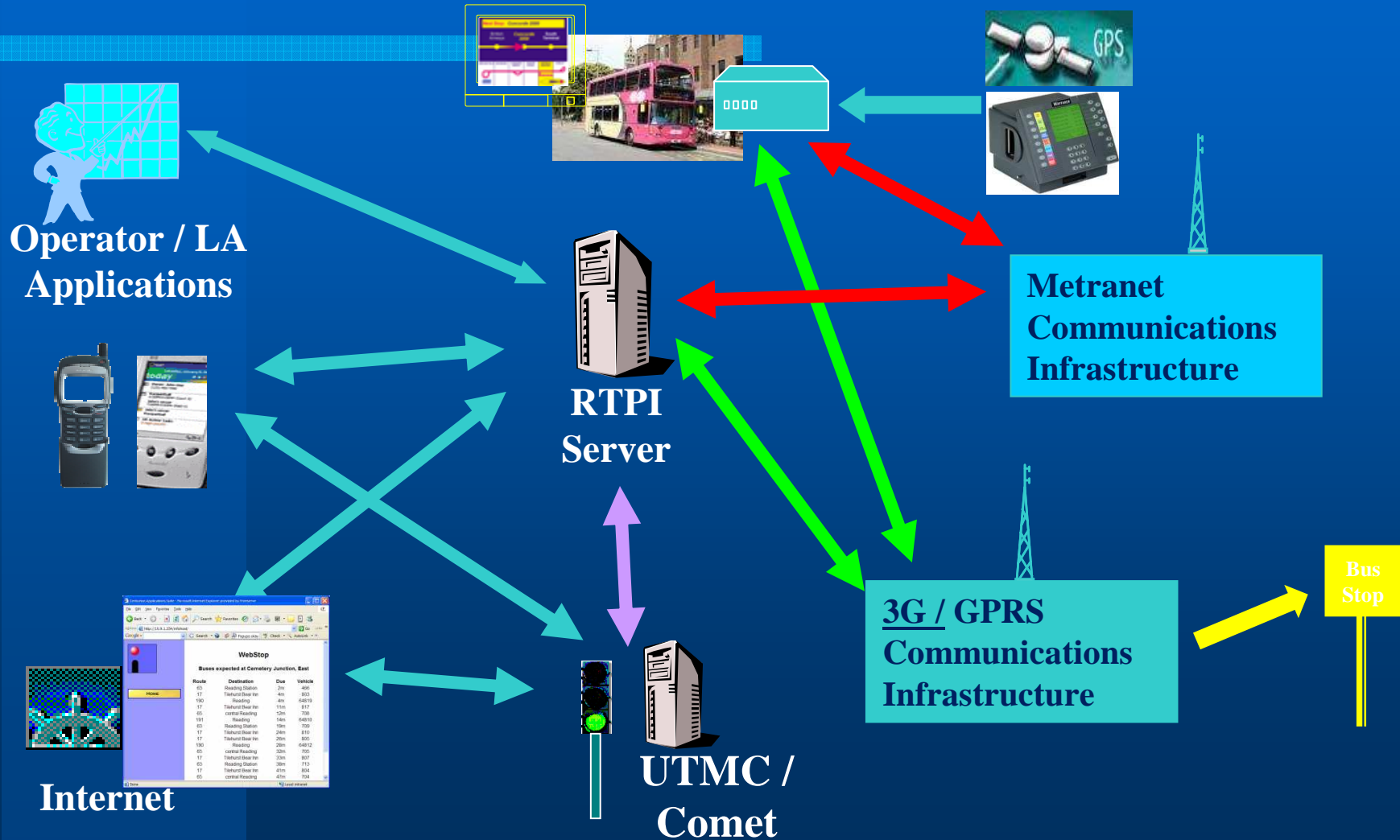
## ● Server

- Support for multiple radio interfaces
- Extended UTMC interfaces
  - Rail
  - Road / Traffic
  - CCTV

# Original Architecture



# New Architecture (1)





# Functionality

- **Intelligent Radio Switching**
- **Priority Matrix**
  - Availability
  - Cost
  - Urgency
- **Additional Data Feeds**
  - Rail Information
  - Traffic
  - News
  - CCTV

	Radio Network				
	A	B	C	....	n
Data Type 1	Y - P1	Y - P2	Y - P3		Y - Pn
Data Type 2	Y - P1	Y - P2	X		X
Data Type 3	Y - P1	X	X		X
....					
Data Type n	X	Y - P1	Y - P2		X

# Challenges

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- **New hardware to market**
- **Implementing into Live system**
- **Deployment in parallel to network**
- **Limitations based on discreet network coverage on 'A33' corridor**

# Team/Resources

- **Sub-project Co-ordination**
  - Transept Consulting Limited
- **Technical Development**
  - Connexionz (UK & NZ)

# Evaluation

Prepared by TRG

# Evaluation methodology

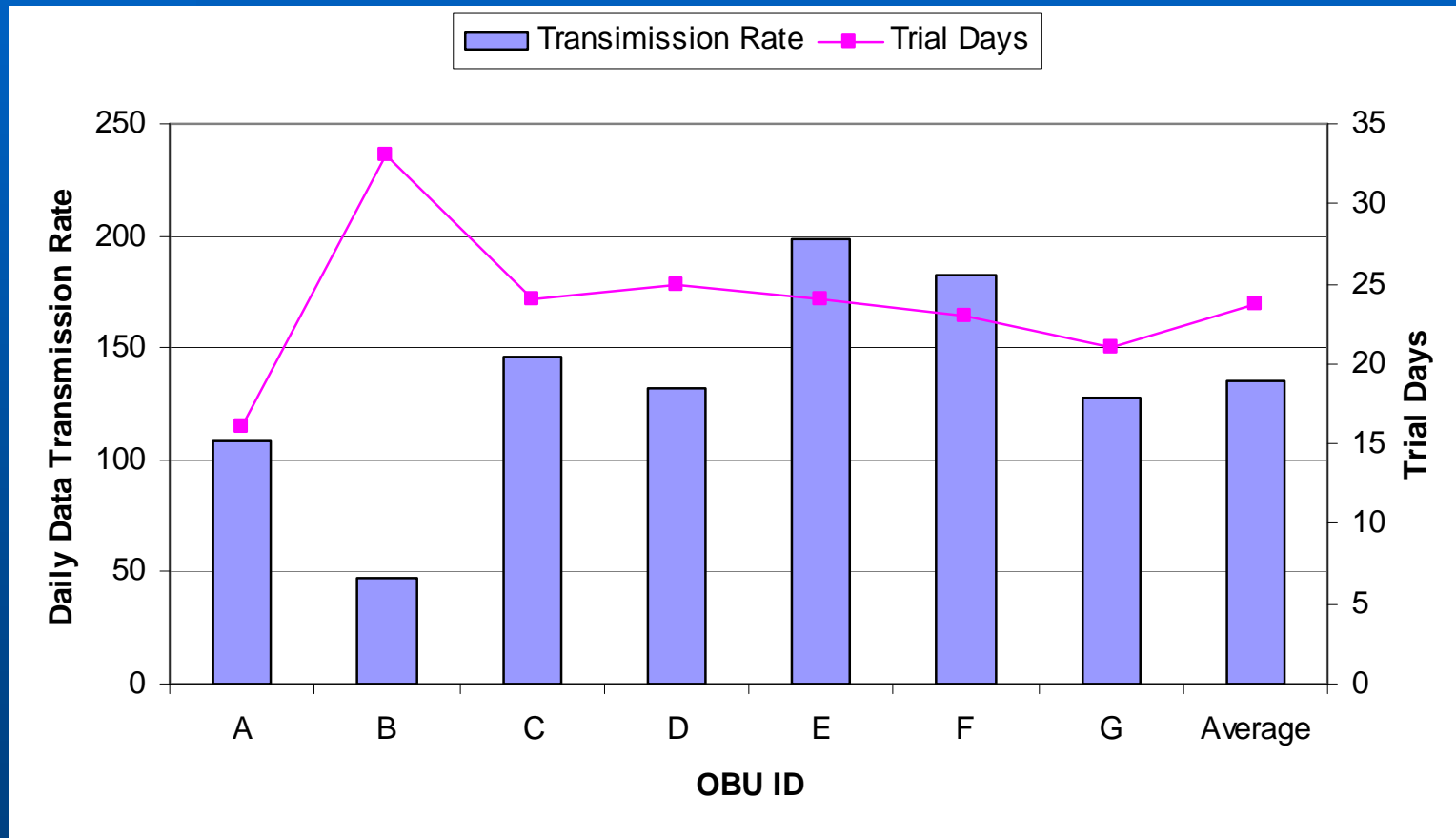
- A data driven method was adopted in the evaluation
- Automatic data collection was the main instrument for gathering information from the trial

# Results(1)

*Geographical  
Distributions of  
Successful WiFi  
Communication  
Attempts*

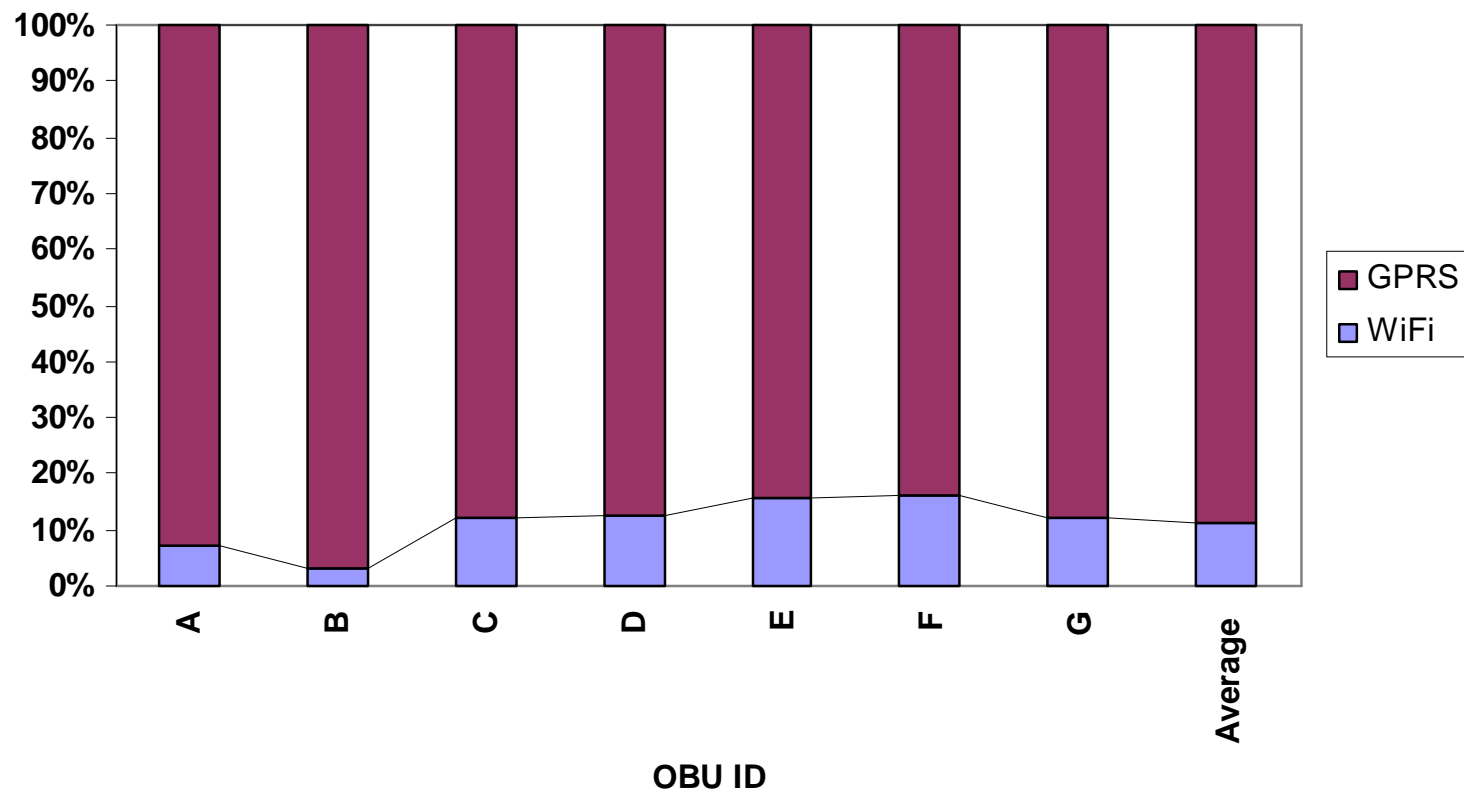


# Results(2)



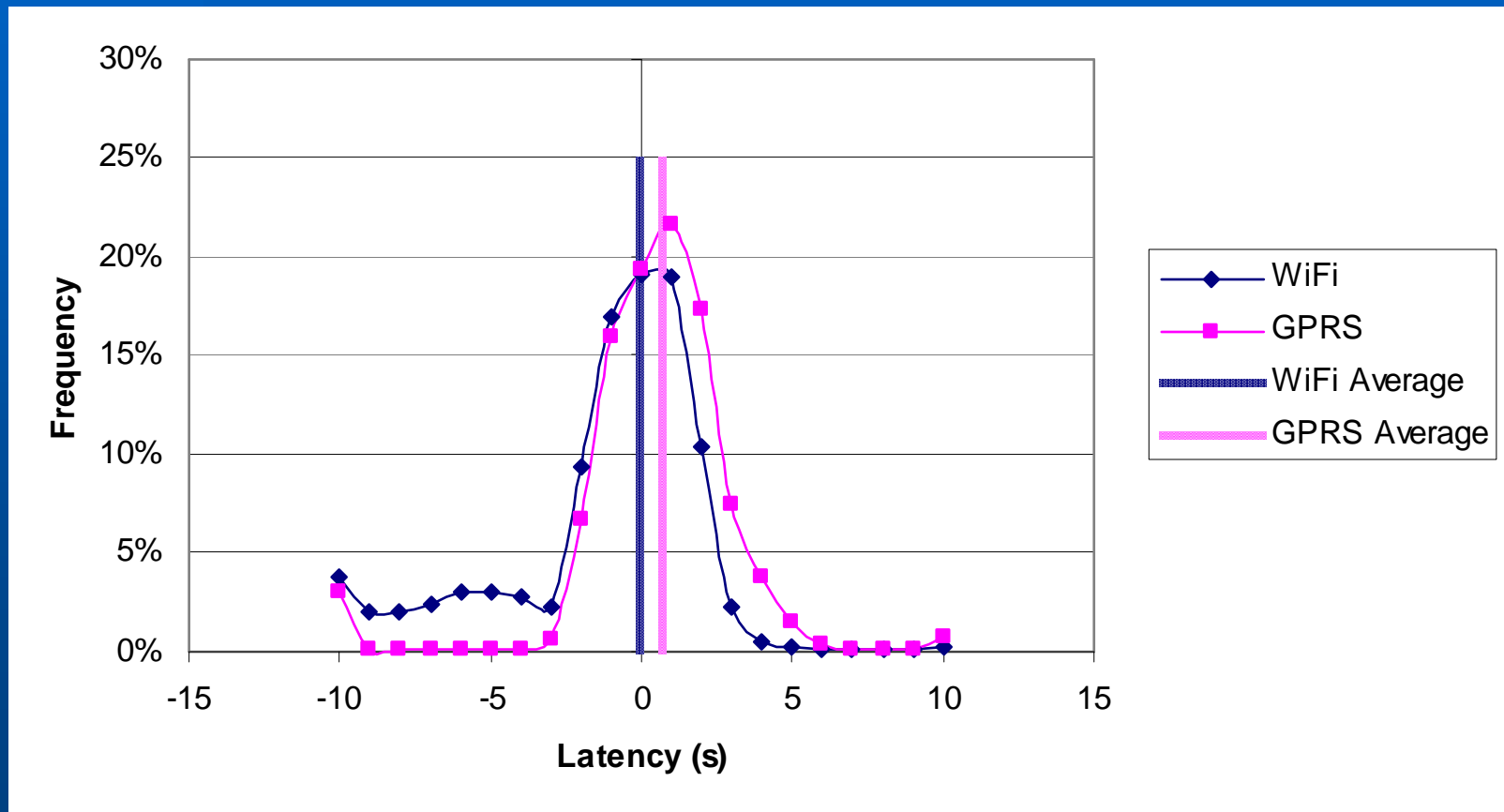
*Number of messages transferred through WiFi*

# Results(3)



*Percentage of WiFi data transmissions*

# Results(4)



*Transmission latency*

# Current Status

- **Successful technical demonstration but full roll-out across existing Reading RTPI system not complete**
- **Enhanced base product achieved**
- **Additional functional modules either achieved or being developed**

**FOR MORE INFO...**

**Contact Russell Gard on +44 7909 535533  
russellgard@connexionzuk.com**

# Enhanced Base Product

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- **New flexibility in network use**
  - Content
  - Geography
- **Maximises legacy system value**
- **Reduced customer costs**

# Enhanced Base Product

- **i-connex**
  - Integrated on bus system
  - All in one box
  - Cost effective



# Partner product integration

- Pedestrian multi modal journey planning
- Freight journey planning / RTI integration
- Pre-payment of bus fares

# Further information

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- **Submit questions to:**  
**Russell Gard**  
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- **Internet address for project:**  
**[www.readingseedaproject.co.uk](http://www.readingseedaproject.co.uk)**