

SmartFuSION

Smart Urban Freight Solutions



MOTIVATION AND OBJECTIVES

SmartFuSION, a public-private partnership (PPP), rationalised urban goods distribution services, with a view to reducing pollution and traffic. The main objectives were:

- To enhance the innovation process at urban-interurban interfaces.
- To demonstrate and evaluate the technical and logistical feasibility of introducing electric vehicles and the second generation of hybrid truck technology into existing business supply chains and to apply these vehicle technologies in conjunction with information technology, operational, managerial and regulatory innovations including urban consolidation centres and telematics systems.
- To determine the critical success factors in stimulating the market uptake of new sustainable vehicle technology and other innovations in the urban logistics environment.
- To develop a Smart Urban Designer tool that allows the other city-regions and company supply chains to analyse the likely success and benefits of applying these innovations in their domain.

PROJECT PLAN, MILESTONES AND DELIVERABLES

Stakeholder analysis and solution development phases were carried out in Berlin, Como and Newcastle upon Tyne, with positive evaluation of the innovative solutions.

- Stakeholder Analysis completed: January 2013
- Technology and Vehicle prototypes solutions ready for testing: January 2014
- Demonstrations completed: June 2014
- Impact Assessment completed: July 2014

TECHNICAL APPROACH

In Berlin the trial aimed to increase the market share and use of larger electric trucks, for inner city deliveries. Since large, fully electric trucks are not yet commercially available in Germany, the Berlin tests used a VOLVO hybrid electric truck, switching to full electric mode in predefined locations to improve air quality in the city along a 8km route between the logistics centre and the final customers.

In Como four SmartFuSION test elements (logistics, policy, vehicle and IT technology) were combined in order to increase the use of clean vehicles in the city centre and to tranship more goods through the Urban Consolidation Centre ‘Merci in Centro’. This was achieved via a change in access rules for the clean vehicles, allowing a more flexible delivery schedule throughout central Como’s pedestrian zone.

In Newcastle upon Tyne the trial lasted nine months for deliveries to all 80 university buildings, under real business conditions, with a fully electric truck. The pilot used a warehouse management system to consolidate single deliveries to different parts of the campus. These were first delivered to the University Consolidation Centre, from where they were distributed, more efficiently by a single clean vehicle, to the final receiver.



ACHIEVEMENTS

- A better understanding of how successful stakeholder interventions in urban freight can be initiated and run, using logical framework analysis tools
- Trip planning and battery management software, with integrated links between the vehicle CAM bus, the human machine interface (HMI) on a tablet and a centralised routing and planning server
- Comparative demonstration and analysis of conventional (Internal Combustion) and clean (Electric/Hybrid) vehicles deployed on the same routes
- A Smart Urban Freight Designer tool, enabling urban policy makers, users and operators to analyse the likely successes and benefits of applying green vehicle technologies
- A European-wide network of industry stakeholders (Enhanced Transfer Programme), policy makers, academics and industry experts, who will take SmartFuSION discoveries into the wider domain, allowing further exploration

Budget	4.05 M€
Duration	42 months
DG	MOVE
Coordinator	NewRail - Newcastle University
Partners	CRF, Clipper Logistics, PTV, Volvo
Website	www.smartfusion.eu

Funding	2.49 M€
Start	April 2012
Contract n°	285195
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