

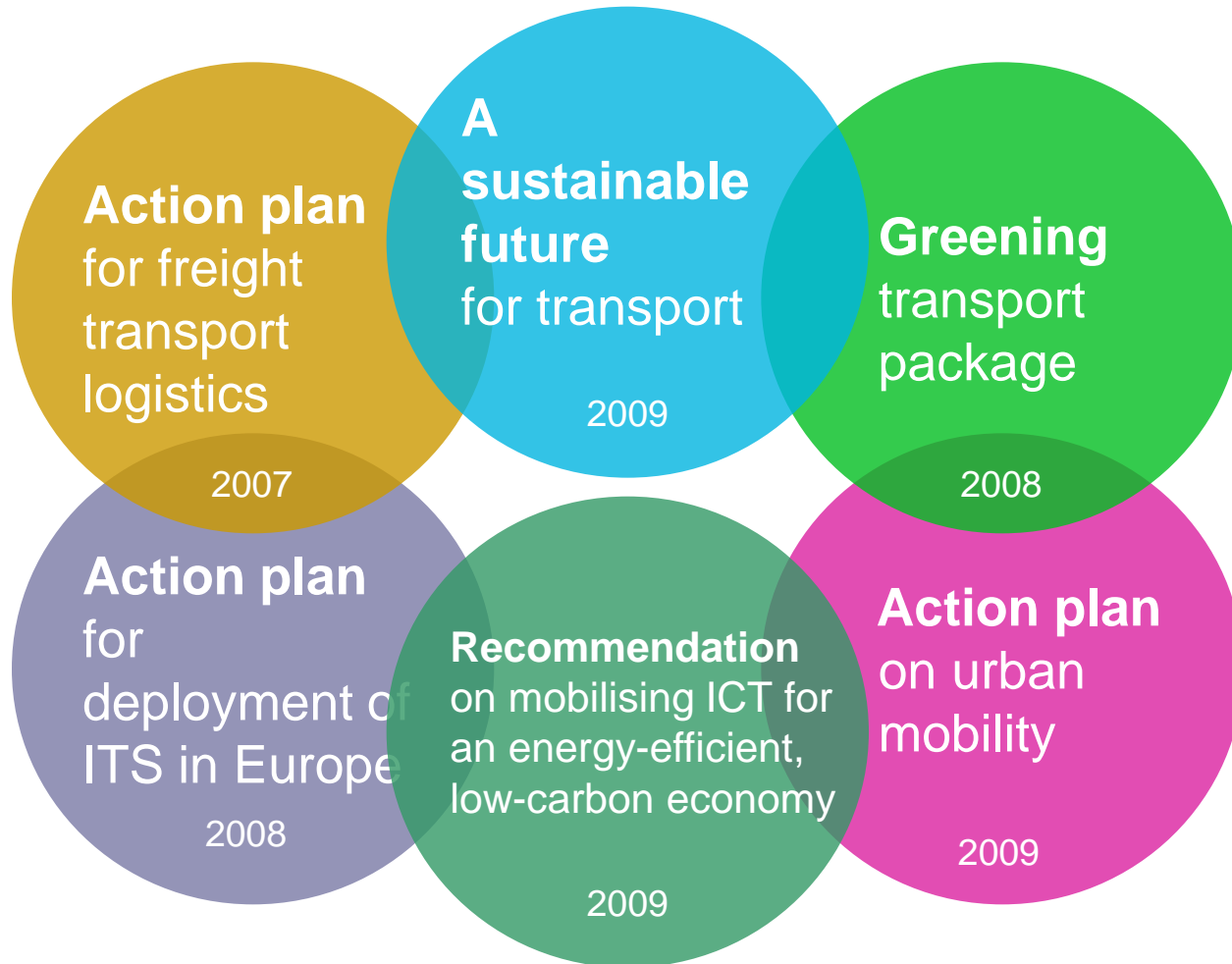
## ICT research to support freight and logistics

2nd European Conference on ICT for Transport Logistics (ECITL)  
Venice, 29-30 October 2009

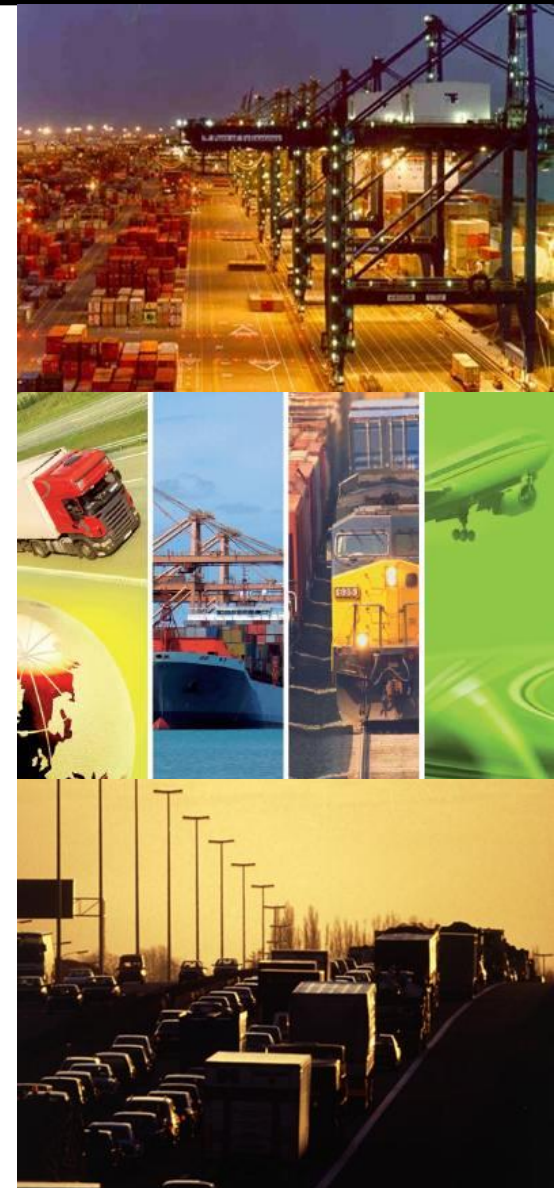




## The political agenda for Europe



[http://ec.europa.eu/transport/strategies/index\\_en.htm](http://ec.europa.eu/transport/strategies/index_en.htm)





## Working in a globalised economy



- Logistics is a main source of prosperity
  - globally 6.7 trillion US\$ (13.8% GDP)
  - Europe 1.2 trillion US\$ (13.3% GDP)
- Transport surge from globalisation
  - containers AP-EU +79% (1997-2003)
  - EU inland freight +26% (1993-2004)
- Despite the current economic crisis, efficient logistics networks will be key to digest future demand for mobility
- DPDHL is a leading global provider of mail and logistics services:
  - operating in 220 countries/territories
  - employing more than 500,000 staff
  - managing about 5% of world trade
  - serving 1 million customers per hour



## Working for a sustainable planet

- Transport emits 23% of all greenhouse gases due to energy consumption
- Freight uses about 35% of the energy consumed by all transport activities
- GHG emissions must peak latest 2015 and be reduced at least 50% by 2030 to limit average global warming to +2°
- GHG emissions by 2050 must drop to 2 tons per person from today 11 tons<sup>2</sup>
- Climate change is taking effect faster and more severely than projected
- DPDHL *GoGreen* Program to improve carbon efficiency 10% by 2010 and 30% by 2020 against 2007



<sup>1</sup> Source: IPCC - Intergovernmental Panel on Climate Change    <sup>2</sup> average figure Europe; US = 20 tons, PRC = 4 tons per person and year



## Can ICT help bridge the gap towards sustainable logistics ?



**Yes,  
ICT can!**

**... but it is no 'silver bullet' ...**





## How can ICT help with the greening of logistics?



Information and Communications Technologies are key to sustainable logistics and transport. It is however important to take note that ICT are **enablers** for solutions rather than solutions in themselves !

ICT already feature in mainstream processes such as vehicle, warehouse or equipment operations, order management, or tracking and tracing. Some specific innovative contributions of ICT to improve energy efficiency in logistics are illustrated in the following examples.



## Eco-driving assistance

- Driver training may save up to 10% of fuel use but must be repeated periodically for lasting effect
- In-cab ICT systems can provide direct feedback to drivers through HMI regarding fuel efficiency, and allow self-benchmarking within platoons
- V2I systems can recognise entries and exits of commercial vehicles to sensitive or protected areas, and activate manually or automatically low-pollution or low-noise vehicle modes





## Dynamic routing and route guidance

- Operators attempt to optimise the circulation of vehicles and drivers for linehauls and deliveries
- Traffic flow statistics could improve results from static route planning algorithms, floating-car data can help spot deliveries to avoid local congestion
- ICT can assist the controlled and safe transport of outsize or dangerous goods through sensitive infrastructure like cities, bridges or tunnels



**SMART TRUCK: THE GREENER AND BRIGHTER WAY**





## Infrastructure access management

- Registration, access and gating systems are used widely in e.g. airfields, terminals, warehouses
- V2I and RFID technology can be used also to permit freight transport, notably with low-emission low-noise vehicles, selective access to certain infrastructures
- Examples, especially for the urban domain, include collective lanes or green traffic lights for goods and exclusive loading zones for clean delivery vehicles





## Intelligent cargo

- RFID technology has opened new opportunities for managing cargo and cargo properties
- Mating of contactless cargo identifier with sensors e.g. for temperature allows instant diagnostics of contents without disturbance to packaging
- Smart logistics will require appropriate intelligence levels for each hierarchy layer (smartdust, internet of things, bundling of data streams for multiple units)



**SMARTSENSOR**  
TEMPERATURE





## Seamless and secure logistics

- Logistics chains serving a global market engage with multiple stakeholders and transport modes
- ICT can support co-modality by organising seamless information flows across organisational, geographical and modal boundaries in a harmonised framework
- Intelligent platforms for cargo management interface between private and public stakeholders to cover operational, security and customs requirements



**FREIGHTWISE**



**INTEGRITY**





## Industry initiatives

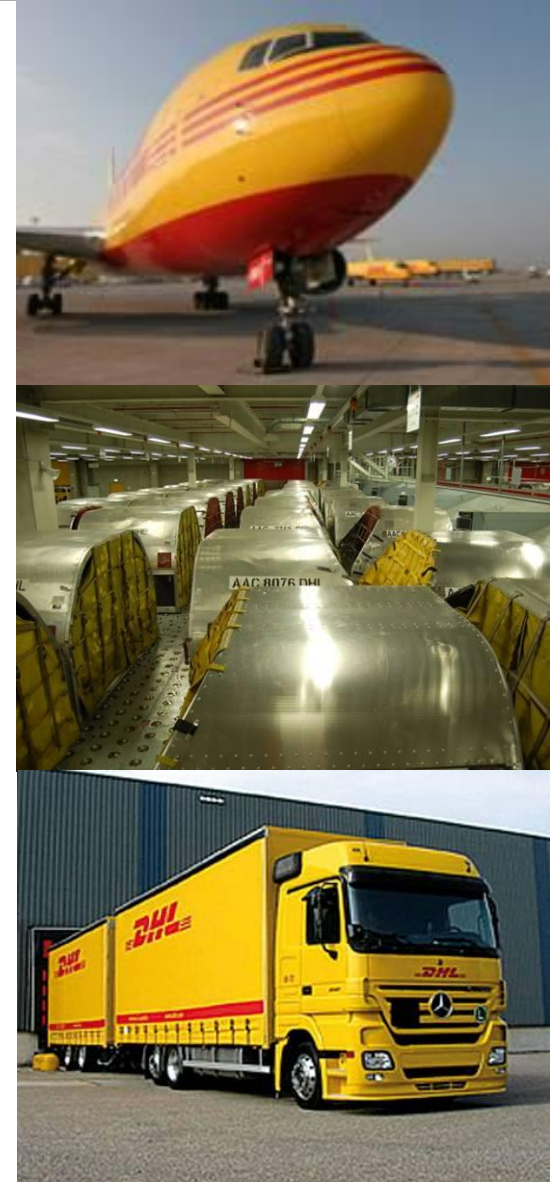
- IATA e-freight was launched in 2004 with the aim to convert airfreight paperwork to electronic messages
- Industrywide initiative involving all professional actors including customs with standardised rollout process and definite benefits from costs to paper savings
- Piloted 2007 in five markets; by October 2009 covers 21 countries, 92 airports, 22 airlines, 134 forwarders



2009: 16 Documents in scope

2010: 20 documents in scope

These 20 documents account for 64% of the paper volume





## Synchronising joint and industrial research

- Some issues require further attention to successfully implement the policy agenda for ITS in logistics and transport:



- **Time to market** needs to be shortened significantly – e.g. *Parcelcall* "Thinking tags" RFID pilot in 2001 yet uptake in 2009 is still marginal

- **Decisive benefits** with clear orientation at needs of professional users' must be demonstrated by pilots to entice market take-up



- **Better concertation** needs to be achieved between public, industrial and logistics stakeholders to govern priorities for change

- **Targeted dissemination** of project findings to a wider industry yet unfamiliar with the specifics of European RTD is essential



- ECITL conference will be a welcome opportunity to address all these aspects



Thank you for your kind attention.

