

# Achieving interoperability of road user charging systems across Europe

**Ken Perrett**

**Rapp UK Ltd**

**Tel: +44(0)118 925 5441**

**Mob: +44(0)7966 584748**

**Email: [ken.perrett@rapp.uk.com](mailto:ken.perrett@rapp.uk.com)**

**Web: [www.rapp.uk.com](http://www.rapp.uk.com)**

# Overview

- **Introduction**
- **Background to charging for road use in Europe**
- **Interest in charging from national governments**
- **National initiatives**
- **European Directive on interoperability**
- **Conclusions**

# Introduction

- **Electronic Charging is well established in Europe**
  - ◆ Mostly commercial operations
- **Interest in charging from national governments**
  - ◆ Mostly related to finance/transport policy requirements
- **Focus on charging of HGVs**
  - ◆ involves new in-vehicle technologies
- **The European Commission is keen to achieve interoperability**
  - ◆ Was previously left to the market
  - ◆ Now becoming a regulatory environment
- **Great deal of activity on the subject of interoperability**

# Background to charging for road use in Europe

- Tolling is well established across Europe
- ASECAP represents 121 organisations, 23,000 kilometres of tolled roads, in 16 countries
- 10 million OBUs in current use



# Most non-stop charging is available at toll plazas

Information

Classification

Charging

Help desk

Payment

Enforcement



# Interest in charging from national governments

## ■ Fair pricing

- ◆ European countries are experiencing significant increases in “through” traffic
- ◆ HGVs cause the majority of road damage
- ◆ Foreign HGVs do not contribute their fair share to the cost of maintenance of the road infrastructure
- ◆ Move from time-based charging to distance-based

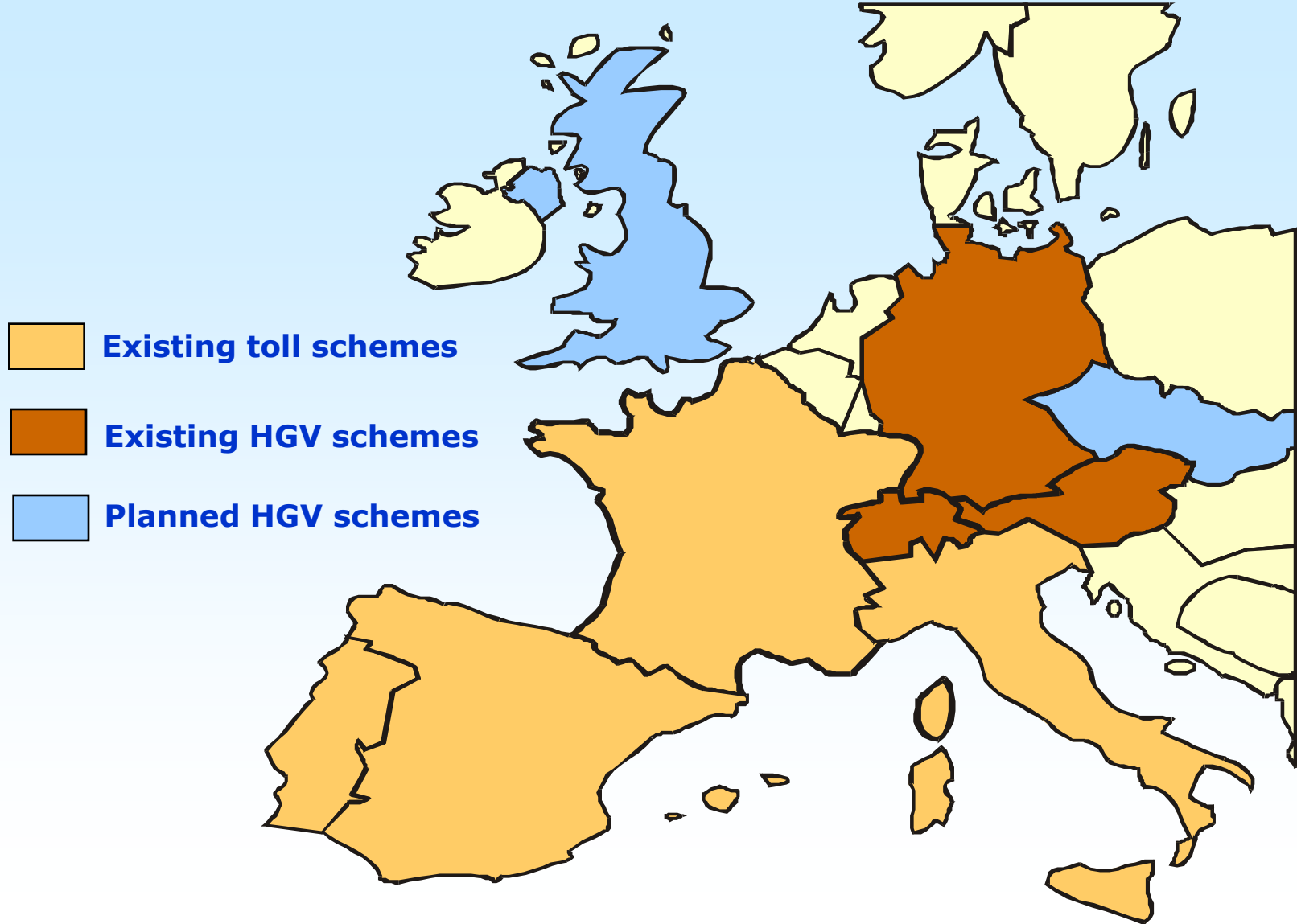
## ■ New finance for road infrastructure

- ◆ The EC budget for road investment is inadequate
- ◆ The EC is seeking a way to raise new funds for road infrastructure
- ◆ The EC is pressing for interoperable electronic charging systems

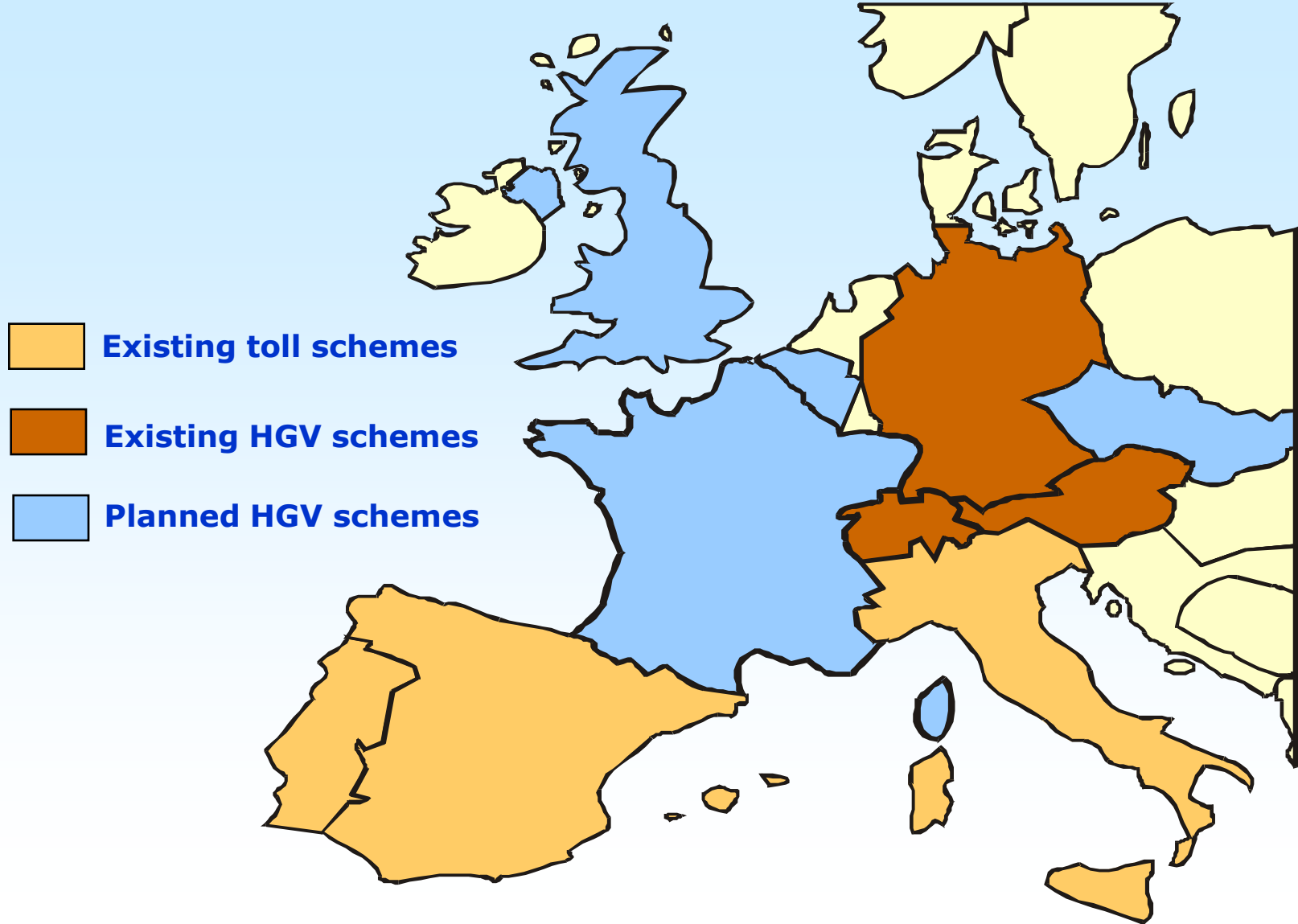
## ■ Need to replace taxes based on fuel duty

- ◆ Fuel duty is increasingly unpopular as a tax
- ◆ Fuel duty is decreasing as a source of tax revenue due to improvements in vehicle efficiency

# Countries developing HGV charging schemes (1)

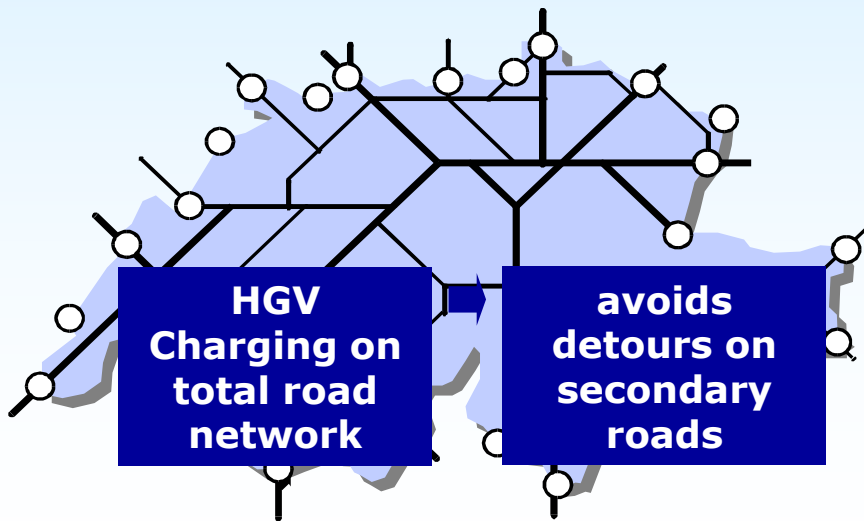


# Countries developing HGV charging schemes (2)



# Switzerland - LSVA scheme

- Heavy Vehicles above 3.5 tons
- All distance travelled
- Charged per Kilometre and per Ton + Emission element
- Operated by the Swiss Customs Authority
- Started: 2001

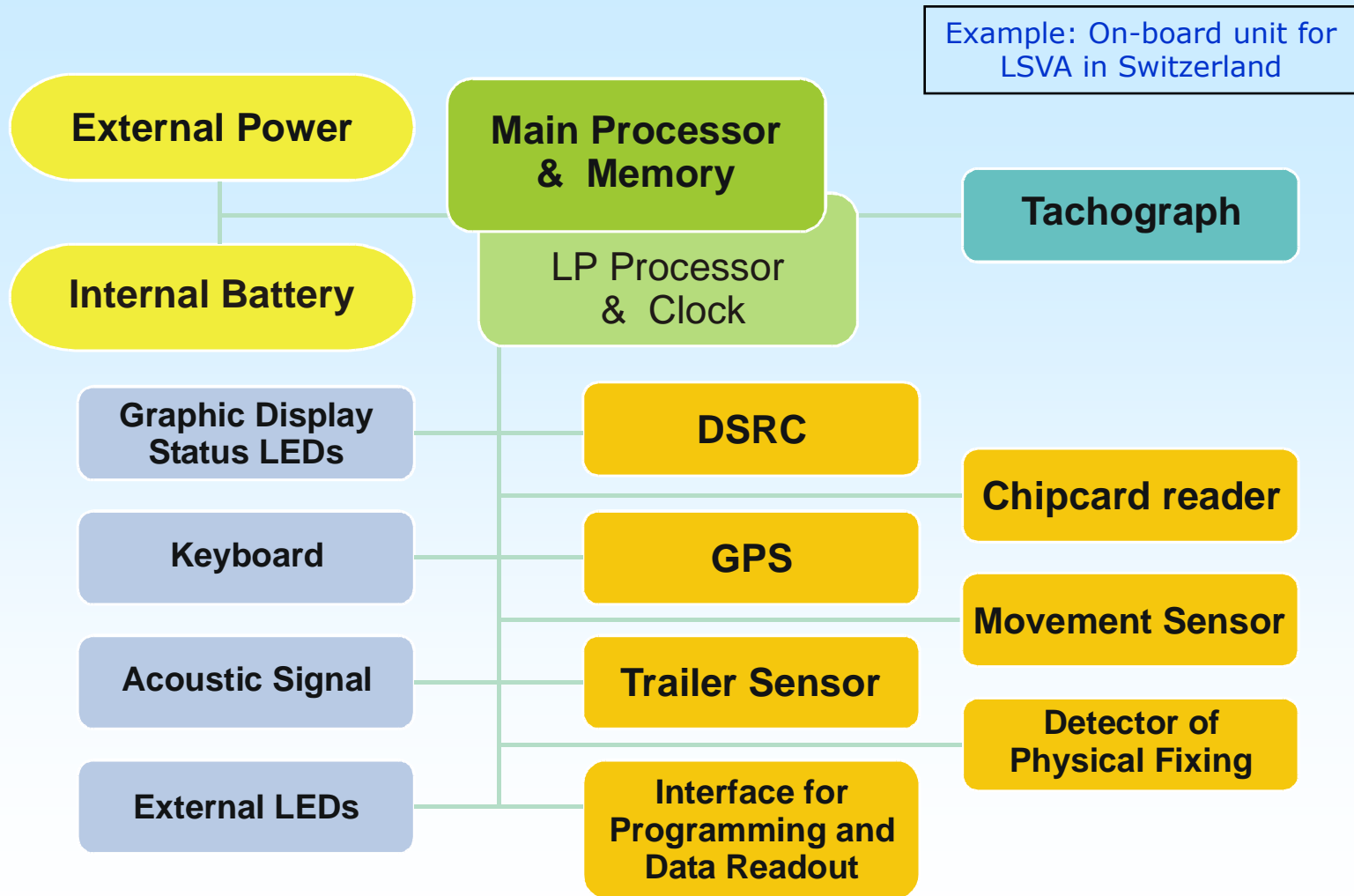


Road Network approx. 70,000 km  
(2,000 km motorways)



Approx 55,000  
OBUs  
issued

# Technologies required for distance charging



# Austria

- National scheme started Jan 2004
- Run by ASFINAG  
(State motorway operator)
- Toll collection concession to  
Commercial operator - EUROPPASS
- Based on Microwave transponder
- 800 gantries - on every Motorway link
- Mandatory for all heavy vehicles over 3.5 tonnes
- OBU costs user €5!



# Germany

- **National scheme**
- **Responsibility of Ministry of Transport**
- **Toll Collection concession - Toll Collect**
- **Started January 2005**
- **Vehicles over 12 tonnes**
- **Tariff based on:-**
  - ◆ distance travelled on Motorways
  - ◆ Total number of axles (up to 3, 4 or more)
  - ◆ Emission class
- **800,000 journeys per day**
- **Optional OBU**
- **90% journeys recorded by OBU**



# Other plans for charging HGVs

## ■ Czech Republic

- ◆ Published plan to implement a Heavy Vehicles Toll system
- ◆ Vehicles to be charged:
  - >12 tonnes in first phase,
  - >3.5 tonnes in second phase
- ◆ Network: on motorways and other major roads total of 3,000 kilometres
- ◆ Revenue use: State Infrastructure fund (seemingly for highways only)
- ◆ Date: starting 2006!
- ◆ Charging Authority: State Infrastructure Fund (SFDI)

## ■ Slovak Republic

- ◆ Creation of a national motorway company in 2005
- ◆ Time-based vignette system to be replaced by ETC (LV&HGV)
- ◆ Network: Motorways and principal roads 400 kms
- ◆ No dates set

# Six UK approaches

## ■ Urban Congestion Charging Schemes in England and Wales

- ◆ Policy to have a single OBU
- ◆ Congestion Charging Schemes are required to use any national specification
- ◆ DfT working on OMISS - Open Minimum Interoperable Specification Suite.
- ◆ OMISS being tested in the DIRECTS project at the site in Leeds

## ■ London Congestion Charge

- ◆ Currently does not offer electronic charging
- ◆ Technology trials are in progress
- ◆ Electronic charging may be introduced in the future

## ■ Scotland

- ◆ Similar legislation to that in England and Wales  
Transport Act (Scotland) 2001
- ◆ Forth Road Bridge treated as a congestion charge  
Forth Road Bridge to introduce electronic charging

## ■ English Toll operations

- ◆ Three toll schemes on European Road Network - Dartford Crossing, Severn Crossing, M6(Toll)
- ◆ All have electronic charging
- ◆ Not required to be interoperable

## ■ Possible "National" charging policy

- ◆ Feasibility study completed and published in July 2004
- ◆ Select Committee Report published last month

## ■ Lorry Road-User Charging

# Lorry Road-User Charging in the UK

- **Government response to Haulage Industry**
- **Will apply to all HGVs over 3.5 tonnes**
- **Charge based on:**
  - ◆ distance travelled in the UK
  - ◆ maximum permissible weight
  - ◆ number of axles
  - ◆ emission class of the vehicle
  - ◆ presence of a trailer
- **Different rates by type of road**
  - ◆ motorway
  - ◆ other roads
- **Possibility of different rates by time of day**
- **Two charging schemes**
  - ◆ Main scheme
  - ◆ Occasional user scheme
- **Fuel-duty repayment scheme**
- **Technology not prescribed**
- **Procurement started**
  - ◆ Contract award by end of 2005
  - ◆ Operation to start in 2008



# Contracts and bidders

## ■ Three Commercial contracts

- ◆ Charging data services
- ◆ Enforcement services
- ◆ Central Services

## ■ Management Authority

- ◆ Delivery of the scheme
- ◆ Operation of the scheme



## ■ Charging data services

- ◆ Serco
- ◆ Siemens
- ◆ T-Systems International

## ■ Enforcement Services

- ◆ Autostrade
- ◆ Serco
- ◆ TraCS consortium

## ■ Central services

- ◆ Capita Group
- ◆ IBM
- ◆ Siemens

# EFC Directive

- **Directive on EFC Interoperability**
- **Transport policies (DG TREN)**
  - ◆ Funding infrastructure in Member States
  - ◆ Free movement of People and Goods
- **Aim to introduce a European Electronic Fee Collection Service**
- **Regulatory Committee has been established**
- **Technical working groups are being appointed**
- **Relevant projects**
  - ◆ MISTER - specification of equipment to support the EFC directive
  - ◆ On-board Telematics Unit - specification of single integrated on-board unit for European vehicles
  - ◆ CESARE III - Contractual framework for interoperable charging in Europe
  - ◆ RCI - Trials of interoperable equipment
  - ◆ MEDIA - Commercial project to achieve interoperability

# Conclusions

- **There is a strong interest in HGV charging schemes**
- **There is a regulatory framework in place**
- **There are many projects and initiatives**
- **Member States and Toll Operators are working together**
- **However:-**
  - ◆ The EC has insufficient resources to undertake the work
  - ◆ Specific projects are required to be let by competitive tender
  - ◆ There is a need for some glue to connect the pieces!
  - ◆ There is still a great deal to be decided
- **The target date of July 2006 for agreement on the European service appears highly optimistic**