

# Interoperable Electronic Fee Collection in Europe

*European Commission - DG TREN*

*April 2006*

# 1. From Electronic Fee Collection to Intelligent Transport Systems





# EFC DIRECTIVE

- 1. DIRECTIVE 2004/52/CE
  - In force since the end of May 2004
  - Technical definitions should be completed for September 2006
  - Contractual definitions expected to be finalized first half of 2007



# EFC DIRECTIVE

## ■ 2. THE OBJECTIVE :

- Regulatory frame for the deployment of a unique European EFC service in two stages:
  - First stage : HGV and Long Distance Coaches for mid 2009
  - Second stage : all vehicles for mid 2011
- The Directive will not interfere with the pricing policies of the Member States, but the systems implemented should be capable to handle any charging policy decided at national levels



# EFC DIRECTIVE

## ■ 3. THE PRINCIPLES OF THE SERVICE

- basic principle : one single contract - one single onboard unit per vehicle
- Later on : one single invoice ? – but not mentioned in the text
- available on the whole tolled network
- used for whatever toll or fee or tax
- same quality of service in any country, non depending on the country where the contract is signed, the nationality of the vehicle or the driver



# EFC DIRECTIVE

## ■ 4. THE TECHNOLOGIES :

Two basic technologies :

- Strong recommendation for **GNSS / GPRS** as a future objective for all systems
- **Microwave 5.8 GHz (DSRC)**

Plus

- A link to the digital tachygraph
- Other technologies allowed as far as they do not discriminate non-equipped clients



# EFC DIRECTIVE

- Strong recommendation in favor of satellite based tolling system
  - Why ? :
    - The only solution to cope with the political requirements of the European Commission and of the Member States for new charging schemes
    - Wider applications than motorway tolling : area pricing or national charge scheme
    - When microwave technologies become obsolete, a common technology needs to be elected to ensure interoperability



# GALILEO for toll collection

- *The advantages :*
  - no need for large infrastructures (toll plazas)
  - no need for expensive roadside equipment
  - fits to all kind of zone : urban, motorway, countryside





# From EFC to ITS

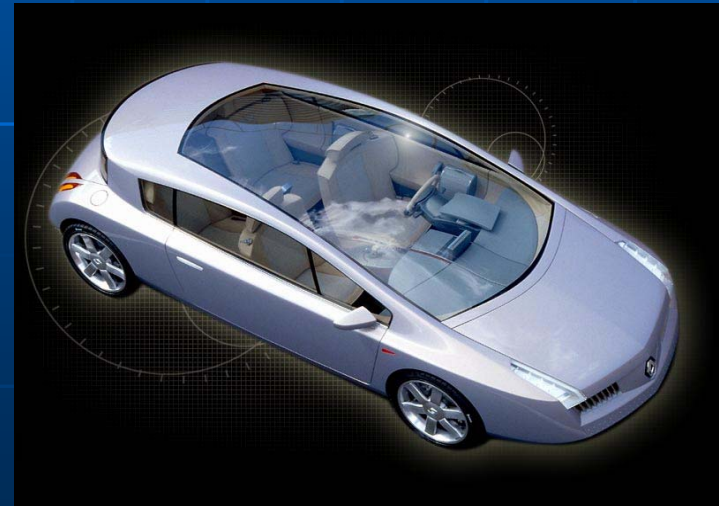
- EFC paves the way to ITS deployment in the vehicles
  - First market : trucks and coaches
  - Second target : all kinds of vehicles...





# GALILEO for ITS

- GALILEO can facilitate the development of all ITS services based on localization for the vehicle of tomorrow :
  - automatic emergency calls with location : possibility to know also the direction of the vehicle
  - Management of dangerous goods
  - road safety and ADAS systems
  - freight and fleet management
  - traffic surveillance
  - route guidance





# ITS Strategy

- GNSS needs to be complemented by long and short range communication media :  
GPRS – DSRC
- The onboard unit is very expensive,  
today : 300 €
- The EFC directive should lead to equip new vehicles when manufactured, from 2010 on.
- High quantities will make the price of the OBU cheaper : less than 100 €

## 2. COMITE TELEPEAGE AND ROAD PLATFORM





# COMITE TELEPEAGE

- is a Regulatory Committee
- The EFC Expert Group prepares the documents and resolutions proposed for vote in the Regulatory Committee



# COMITE TELEPEAGE

- Regulatory Committee limited to the 25 EU Member States
- Expert Group : 25 MS + candidate countries (HR – RO – BG – TR) + EFTA countries (NO – CH – Iceland) + associations (ASECAP – IRU – ERIC – IRF – ACEA)



# ROAD PLATFORM

- There is a need for a link with the private sector :

## ROAD PLATFORM

launched by the road operators association  
ASECAP and supported by the EC DG  
TREN

- Already 8 meetings
- Last meeting : 7 September 2005
- Each of them on a specific topic
- **Registration free at [asecap@skynet.be](mailto:asecap@skynet.be)**

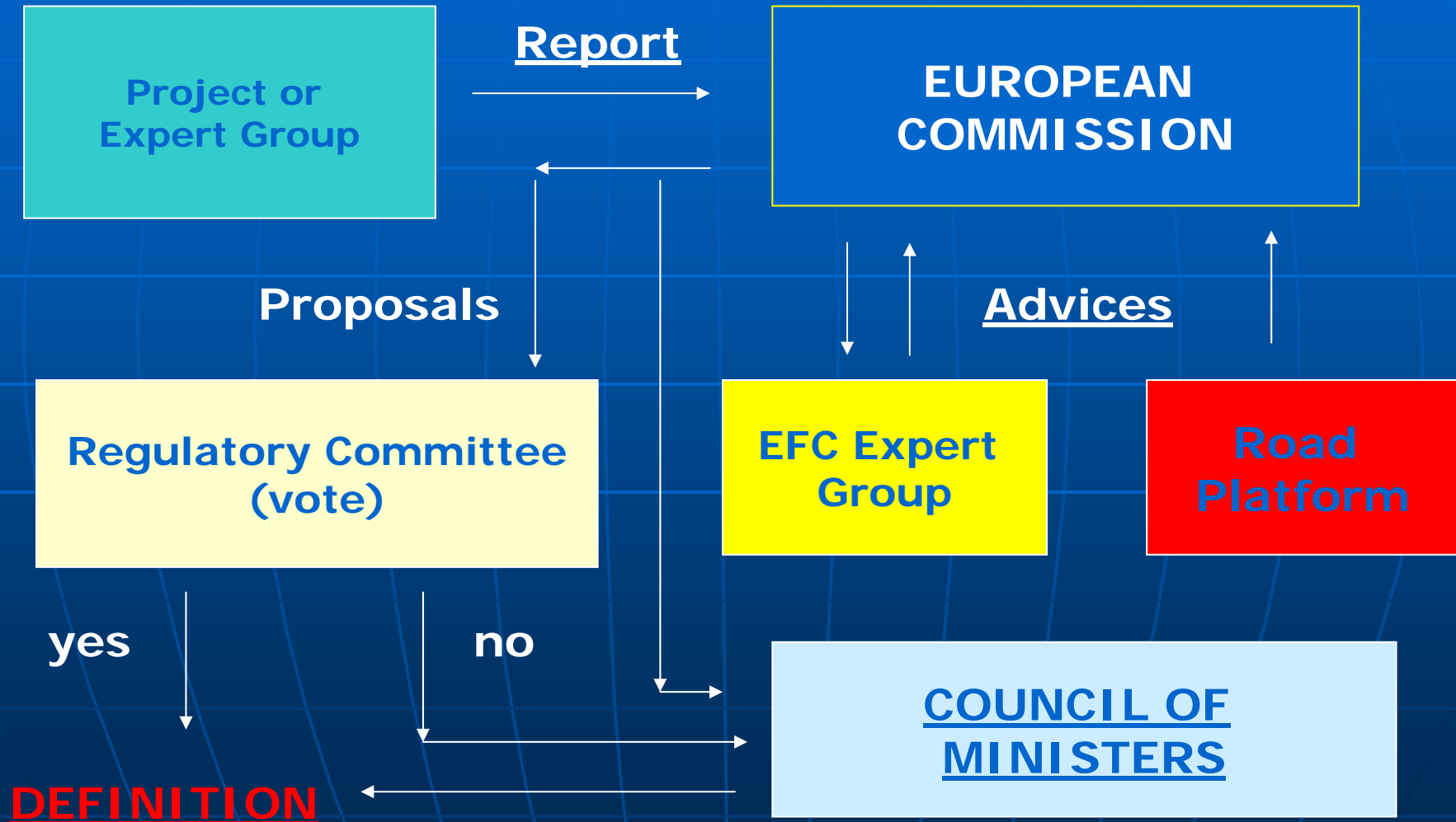


# ROAD PLATFORM

- Open platform
- informal structure
- gathers road operators, service operators, car manufacturers, equipment providers and the EC
- aims to discuss specific ITS issues and eventually launch joint actions
- managed by ASECAP and EC jointly



# EFC Definition process



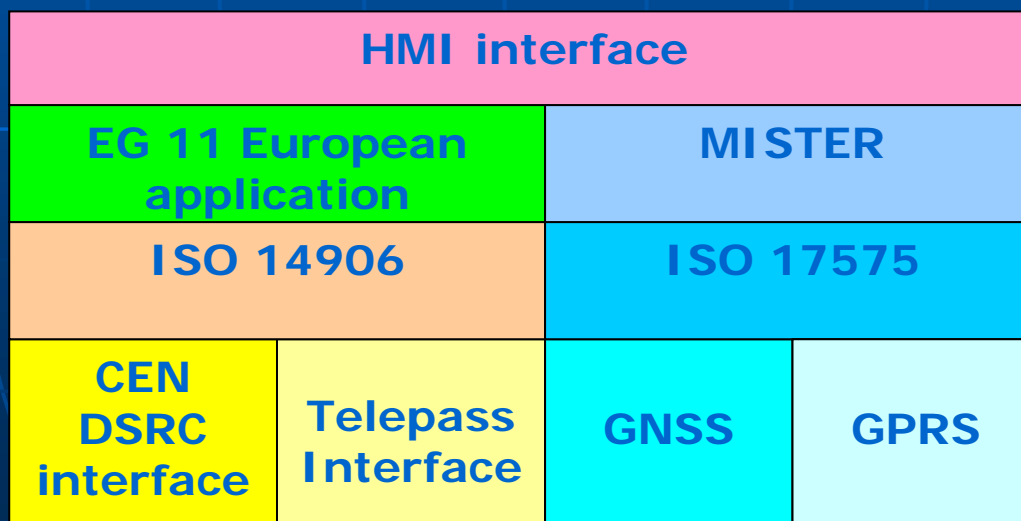
# 3. WORK ACHIEVED UNTIL 2006





# Work Program

- 1. definition of the European EFC Service
- 2. technical architecture and specifications for the components





# Work Program

- Working Groups :
  - 1. **DSRC technologies** led by Jesper Engdahl (RAPP AG - CH)
  - 2. **Classification of vehicles** led by Ken Perrett (RAPP UK)
  - 3. **enforcement of offenses** led by Jean Mesqui (ASFA - FR)
  - 4. **certification centers** (led by Fransisco Soriano – LISITT - ES)
  - 5. **GNSS/CN technologies for EFC** led by Wolfgang Beier (Toll Collect - DE)
  - 6. **integration of OBU in vehicles** to be defined, led by Mike Hollingsworth ACEA



# Work Program

- 7. **the role of the financial institutions in the system**, led by Klaus Philipp (AGES – DE)
- 8. **Verification of the Telepass Specification**, follow-up of EG 1 , led by Jesper Engdahl
- 9. **Specifications for a pan-European satellite EFC system**, led by Ian Catling (ICC – UK)
- 10. **Technologies and specification for enforcement** : led by Joao Pecegueiro (Via Verde – PT)
- 11. **specifications for a pan-European EFC application on microwaves** led by Bernhard Oerhy (RAPP AG - CH)
- 12. **security of the transactions** to be launched
- 13. **Synthesis on enforcement** after VERA, EG3 and EG 10 : to be defined



# Work Program

## ■ 1st Commission Decision (technical issues)

- Drafted from the reports of EG 1 – 2 – 4 – 5 – 6 – 8 – 9 – 11
- Submitted to **EFC Expert Group** for discussion on 3 May 2006
- Submitted to **Interservice Consultation** in the European Commission May/June 2006
- Submitted to the **College of Commissioners** : June 2006
- Submitted to the **Comité Télépage** : September 2006



# 1st EC Decision

## ■ Contains :

- List of DSRC – UNI standards to be used
- Recommendations regarding the use of satellite technology
- List of classification parameters for vehicles
- Definition of DSRC software application
- Architecture for GNSS tolling application
- Definitions of the European Network of Certification Centers
- Requirements for the integration of the OBU in the trucks



# Work Program

## ■ RCI

- Demonstration Project : 6th RTD FP
- Launched in July 2005 for 36 months
- Led by ERTICO and involves most of motorway and toll operators in Europe
- Demonstration of transactions by DSRC as well as GNSS / CN with the same onboard unit
- Call for tenders to choose two electronic integrators for the OBU : May/June 2006
- 5 bids received



# Work Program

- 3. Procedural interoperability
- 4. Memorandum of Understanding and exchange of data between all contract issuers (operators, financial institutions...)



# CESARE III

- Projet between ASECAP (PT – AT - DK - ES – FR – IT – NO – SLO - EL – HR – HU) and the Stockholm group (UK – NL – DE – SV – FI – CH – SLO)
- Follow-up of CESARE I and II
- Cesare II has provided important results for cooperation between road concessionnaires levying tolls
- Results applied in PISTA inside ES and between ES and FR
- CESARE III aims to adapt CESARE II to the needs of the Stockholm group organizations



# CESARE III

- Structure of the project :
  - WP 1 and 2 : revise business model and provide service definition
  - WP 3 and 4 : organisational arrangements and documents for contractual interoperability between operators of all kinds
  - WP 5 : procedural interoperability
  - WP 6 : liaison with external bodies like the Comité Télépéage
  - Duration 18 months starting April 2005
  - Contact : Claude Bidaud (ASF – France)
    - Tel : +33.1.72.71.90.20
    - [claudio.bidaud@asf.fr](mailto:claudio.bidaud@asf.fr)



# Work Program

## ■ 2nd Commission Decision (contractual issues) :

- On the results of CESARE III, dealing with contractual and legal issues
- Elements from EG 7 could be included
- Expected at the end of 2006

## ■ 3rd Commission Decision (enforcement issues)

- On the results of VERA 2 - EG 3 – 10 – 12 – 13
- Expected first half of 2007



# Work Program

- 5. Implementation of a pan-European network for Certification procedures and label for equipment,
  - From the results of EG 4
  - EC Call for tender in 2006 on a feasibility study
  - Deadline 25 April 2006



# Work Program

- 6. Exception handling
  - Draft Directive on cross-border enforcement of offenses related to Road code violations (2006)
  - Data transmission network between police authorities deployment of a first version with AT – ES – FR – NL : **VERA 3**
  - Relations between police authorities and toll operators : **Expert Group 3**
  - Technologies for enforcement : **Expert Group 10**



*Thanks for your attention*

Commission Européenne  
Direction Générale de l'Énergie et des Transports