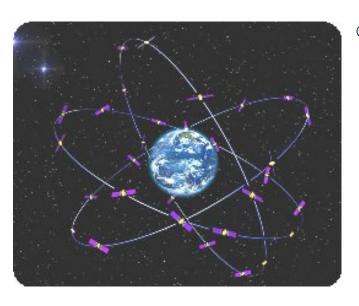


# GNSS Introduction in the ROAD Sector

# Brendan Halleman European Union Road Federation (ERF)



## GALILEO, an enabler of European Transport Policy (1/6)



- The GALILEO system:
  - 30 satellites in three planes over Medium Earth Orbit
  - 4 levels of navigation services:
    - > Open Service
    - > Safety of Life Service
    - > Commercial Service
    - Public Regulated Service
- The GALILEO programme is quickly becoming a reality
  - EGNOS signal available since mid-2005
  - First test satellite (GIOVE-A) launched in December 2005
  - Concession awarded to joint EURELY-INAVSAT consortium (contract negotiations through 2006)
  - Partnership agreements signed with China, India, South Korea, Latin America, etc.



# GALILEO, an enabler of European Transport Policy (2/6)

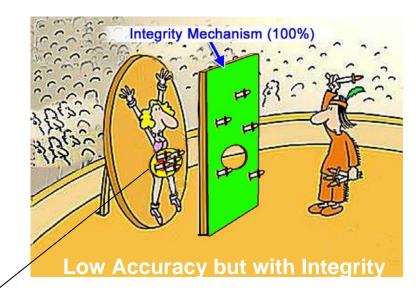
- Shortcomings of GPS:
  - Not designed as a civilian system
  - No contractual operator
  - Only 1 signal for civil users
  - Performance levels that make it unsuitable for numerous commercial and safety of life applications
  - No service warranty
  - No signal integrity
- GPS and GALILEO are not designed as competing systems. The combined GPS-GALILEO coverage will ensure <u>better positioning accuracy</u> for dual receivers.

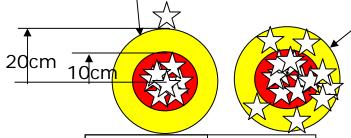


# GALILEO, an enabler of European Transport Policy (3/6)

#### o Integrity & accuracy:







8 cm	18 cm
99 %	100 %

Accuracy (e.g. error at 95%)
Integrity (percentage inside the yellow circle)



## GALILEO, an enabler of European Transport Policy (4/6)

- EGNOS and GALILEO are recognised by many specialists as an important component of the global answer to the challenges raised by increased private and freight transport demand:
  - Achieving a significant and lasting decrease in road injuries & fatalities
  - Identifying stable mechanisms of funding for road improvement
  - Eradicating congestion & curbing pollution
- Europe's satellite programme offers integrity and accuracy improvements allowing the development of new applications to optimise personal mobility.
- GALILEO has the potential to become a key enabler of European and national transport policies.



## GALILEO, an enabler of European Transport Policy (5/6)

- The key challenge for GALILEO is to bridge the gap between technological pilot services and mass-market take-up by road transport users.
- This can be achieved by:
  - Extending message outside usual arena of specialists
  - Going back to the basics:
    - understand user requirements and doubts
    - © recognise that there are competing technologies: If GPS or licence plate recognition work, why do you need more?
    - If it did not work with GPS, why should it work with GALILEO?
  - Concentrating on key GALILEO differentiators



### GALILEO, an enabler of European Transport Policy (6/6)

- Some figures to bear in mind:
  - Passenger car fleet in 2004
    - > 650 million vehicles worldwide
    - > 160 million in EU-25
  - Penetration rate of GNSS units in new cars in Europe:

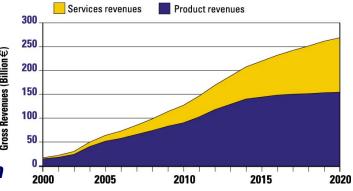
> 2004: 10%

> 2010: 50%

 Global market for GNSS products & services could be worth EUR 275 bn annually by 2020 contributing to 140,000 jobs

Source: European Commission







#### GIROADS in a Nutshell (1/6)

- 24-month project co-funded by Galileo Joint Undertaking (GJU) beginning September 2005
- GIROADS aims to facilitate the introduction of GNSS (EGNOS&GALILEO) in the road sector by:
  - identifying all potential GNSS applications in the road sector,
  - evaluating their market potential and proposing a successful commercial model,
  - assessing their impact on existing European norms & legislation
  - establishing a technical platform providing support to all planned services,
  - field-testing the platform on high-potential applications:
    - > Electronic fee collection & Congestion charging,
    - > Traffic information services,
    - Pay-per-use insurance
  - raising awareness of the tangible benefits of GNSS,
  - establishing recommendations facilitating take-up of GNSS applications in the road sector.



#### GIROADS in a Nutshell (2/6)



- All major segments of the road/GNSS value chains represented
- > 8 countries (including China) with agreements extending worldwide

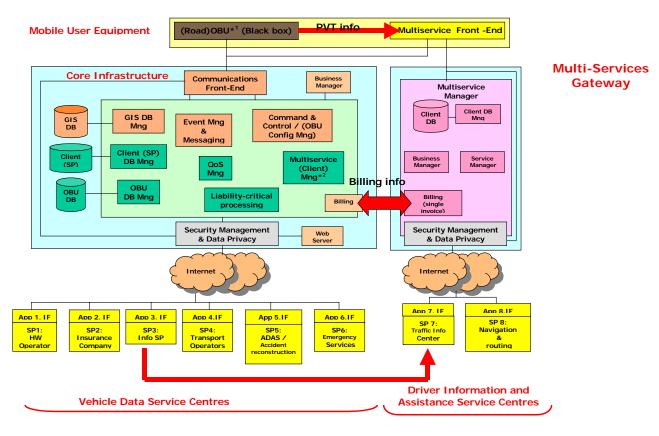


#### GIROADS in a Nutshell (3/6)

- An objective shared by all 31 consortium members: to achieve a shared understanding of the relevance of GALILEO to the everyday needs of the road transport sector
- GIROADS will establish a platform that is
  - Independent
  - Open
  - Market-oriented
  - Global
- « Not another ITS project »:
  - focus on the most differentiating aspect of GNSS application
  - optimal re-use of technological heritage
  - One OBU Multiple services concept



#### GIROADS in a Nutshell (4/6)



- Common platform providing support to all planned services
- ➤ Huge technological heritage (VeRT, ADVANTIS, SCORE)



#### GIROADS in a Nutshell (5/6)

#### Interfacing with the road community:

- GIROADS must promote a permanent dialogue with all GNSS & road sector stakeholders
- GIROADS needs to confront and adapt its assumptions and results face to the reality of each group of potential users
- GIROADS must reach out well beyond existing ITS communities: the GIROADS Club





#### GIROADS in a Nutshell (6/6)

#### **Dedicated services:**

- Dedicated e-newsletter: « Intelligent Roads »
- Regular Executive Briefings
- Online information portal: <u>www.intelligentroads.org</u>
- Extranet : www.intelligentroads.org + login
- Workshops & infodays
- Opportunity to contribute to project output (surveys, etc.)

#### How to join?

- Open to all via on-line registration (possible at GIROADS stand)
- Regulated by terms of Reference (available from GIROADS web site)
- > 60 Members have already joined the Club representing a wide diversity of end-users



#### **Thank You for Your Attention!**

