OREGIN WORKSHOP
February 27, 2001
Pilot Projects
EC FPV Organisation for GNSS / Galileo

EC 5th Framework Programme

Competitive and Sustainable Growth

KA2: Sustainable Mobility and Intermodality
- First call: Thematic Network on GNSS-2 (15th March 1999)
- Dedicated call on GNSS-2 (30th June 1999)

KA3: Land Transport and Marine Technologies

KA4: New Perspectives in Aeronautics
- Dedicated call on GNSS-2 (December 2000)

EC Direct Actions / JRC

Underpinning EU Competitiveness
- ASTRON

Information Society Technology

KA1: Systems and Services for the Citizens

Galileo Technical Support

ASTRON ITT (June 2000)

CPA: GeoInformation and Infomobility

= GENESIS, GALA, GEMINUS, SAGA, INTEG
Other calls are relevant to GNSS applications and services
GALA Pilot Projects

8.1.1/2 Fleet Management. - Precision agriculture
Specified with EC, developed by Racal (UK)

8.2.1 Road Safety and Mobility
Specified with EC, developed by Centro Ricerche Fiat (I)

8.2.2 Intermodal Freight Transport
Specified with EC, developed by Telespazio (I)

8.2.3 Train Protection and warning system
Specified with EC, developed by Indra (E)

8.2.4 Road Traffic Monitoring
Specified with EC, developed by OHB (D)

8.2.5 Crisis Management System
Specified with EC, developed by Thales (ex Thompson-CSF) (F)

8.2.6 Maritime application
Specified with EC, developed by KTI (GR)
EC FPV Organisation for GNSS / Galileo

EC 5th Framework Programme

- Competitive and Sustainable Growth
  - KA2: Sustainable Mobility and Intermodality
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  - KA3: Land Transport and Marine Technologies
  - KA4: New Perspectives in Aeronautics
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- EC Direct Actions / JRC
  - Underpinning EU Competitiveness
    - ASTRON
    - Galileo Technical Support

- Information Society Technology
  - KA1: Systems and Services for the Citizens
    - ASTRON ITT (June 2000)
  - CPA: GeoInformation and Infomobility
Dedicated Call Galileo (5 May 2001)

1. Local Elements Definition

2. Impact of Interoperability on system definition

3. Frequencies allocation and protection, Certification and Standardisation

4. Development and optimal use of satellite navigation for all modes of transport

5. Detailed Service Analysis

6. Legal, Institutional and Regulatory framework
4. Development and optimal use of satellite navigation for all modes of transport

- Capitalise on year 2000 results
- Early mobility applications (Pilot projects)
- Prove commercial viability
- Use existing testbeds (EGNOS)
- Sea, urban, air, rail, road, safety-of-life, intermodal
1. Local Elements Definition
   AM, 18 months, mid-2001

2. Impact of Interoperability on system definition
   AM, 18 months, end-2001

3. Frequencies allocation and protection, Certification and Standardisation
   AM, 36 months, end-2001

4. Development and optimal use of satellite navigation for all modes of transport
   SC, 36 months, end-2001

5. Detailed Service Analysis
   Sub-Task 1: AM, 36 months, mid-2001
   Sub-Task 2: SC, 36 months, mid-2001

6. Legal, Institutional and Regulatory framework
   AM, 24 months, end-2001

AM: Accompanying Measure
SC: Shared Costs

European Commission
Fifth Framework Program: Roadmap Logic

Mission System

GALILEO

1- Local elements
2- Interoperability
3- Freq., Std, Certif.
4- Pilot projects
5- Services
6- Framework

Consolidation Development and validation
Objectives

To build on results of Definition Phase
  GALA pilot projects
  GEMINUS case studies

To set up navigation applications before Galileo becomes operational
  To accelerate its use by the transport sector
  To evaluate benefits and analyse economic viability from synergies with ‘typical local components’ (ground infrastructure/services that can improve the performances at a local, urban or in-door level); terrestrial mobile communication / positioning; inertial sensors

To exploit the GNSS test beds
  To use the readily available EGNOS signal
  To feed into the planning of the Galileo System Test Bed
  To feed into standardisation efforts

To follow the following aspects
  To validate the mission concept through simulation and participation of users
  To assess opportunities for Galileo from requirements for certification, legislation
  To demonstrate EGNOS / Galileo through addressing mobility needs for specific context of high visibility (e.g. the 2004 Olympic Games in Athens)
Expected Results and Links

Expected Results include:

- Demonstration of improved performance in different environments (cities, tunnels, in-door)
- Creation of Awareness in Europe and beyond
- User involvement
- Evidence of opportunities from synergies with terrestrial mobile communication / positioning networks
- Demonstration of the added value of Integrity Information
- For local components: validation of the design definition, creation of awareness for the improved performances and promotion / support measures for market acceptance

Links with other Galileo work:

- EC past Galileo programme activities: GALA, INTEG, GEMINUS, etc
- ESA projects: Detailed Definition, Development and Validation; EGNOS Test Bed Activities
- EC parallel Galileo programme activities: Tasks 2.3.3/6 (Local Component), /7 (Interoperability), /8 (Standardisation, Certification and Frequencies)

Links with relevant activities

- Other thematic programmes of FPV with particular emphasis on the developments made under key action ‘Systems and Services for the Citizen’ of the IST programme
- The ASTRON project of the Joint Research Centre
Application areas

Including (but not be restricted to):

- **Mobility at sea** (e.g. maritime monitoring, harbour entrance)
- **Urban** mobility modes
- **Air** mobility (e.g. civil aviation, private flight air safety, etc.)
- **Rail** Mobility (e.g. train control, train supervision, etc.)
- **Road** mobility (e.g. dynamic route guidance, electronic tolling / cost recovery mechanisms, emergency and breakdown call and stolen vehicle services, travel and traffic information, road regulatory support and enforcement, etc.)
- **Safety of Life**-related transport
- **Intermodal** mobility (e.g. freight transport between all modes, inland waterways, transport of nuclear waste, etc.)
Example (a Policy Priority: Oil Spills)
Example (a market opportunity: Olympic Games)
EGNOS System Test Bed
The Satellite Navigation Supply chain

Key questions for a successful proposal:
Which level of the supply chain does the pilot project address?
Example of a Value Chain: Car Navigation

**Key questions for a successful proposal:**
How will the relevant market segment develop in the future?
What kind of impact will the pilot project have in the value chain?

European GNSS Market

Key questions for a successful proposal:
Which market segment does the project address?
Is it growing or saturated?

And announcing…

EC/ESA Workshop on GNSS Applications

EC and ESA plan to organise Workshop on GNSS Applications and Services in May 2001, in Sevilla. With this workshop they aim to:

- provide an initial forum for all parties interested in GNSS services, applications and user equipment;
- present the ongoing activities in GNSS receivers, terminals, applications and services demonstrating the strong interest and support for innovative satellite navigation solutions;
- create awareness on current and planned European programmes;
- publicise opportunities arising from the readiness for use of the EGNOS System Test Bed;
- pave the way to the preparation of the Galileo System Test Bed;
- discuss with service providers, terminal manufacturers and other stakeholders the priorities, challenges and obstacles for future work in this area.

The exact dates and venues will be announced at the web-sites: www.galileo-pgm.org and www.esa.int/navigation
ESA ARTES Organisation for GNSS applications (1999 – 2001)

ESA ARTES Programme
- ARTES-5 (ASTE)
- ARTES-9

GalileoSat Programme
- GSTB
- GALILEO System Simulator Facility

EGNOS Maritime, Land Mobile And System Test Terminals – EGNOS Receiver

Signal Validation Facility
ESA ARTES Organisation for GNSS applications (1999 – 2001)

ESA ARTES Programme

ARTES-5 (ASTE)
- EGNOS terrestrial regional augmentation networks
- Low-cost navigator for road and air traffic
- Receiver Processing Techniques
- Integrated GNSS and Mobile Coms Receiver
- GNSS-1 Rail User Navigation Equipment
- Integrated Navigation Sensor for Train and Cargo
- Ship and Navigation Sensor
- REMSAT

ARTES-9
- EGNOS Maritime, Land Mobile And System Test Terminals – EGNOS Receiver

GalileoSat Programme

GSTB
- GALILEO System Simulator Facility

Signal Validation Facility