



Galileo
Opportunities and Challenges
by
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Secure World Foundation Conference
The Brussels Space Policy Round Table - Galileo

November 22, 2011, Brussels



Galileo Launch



Galileo Services Association is delighted about the successful launch of the two first Galileo IOV satellites.

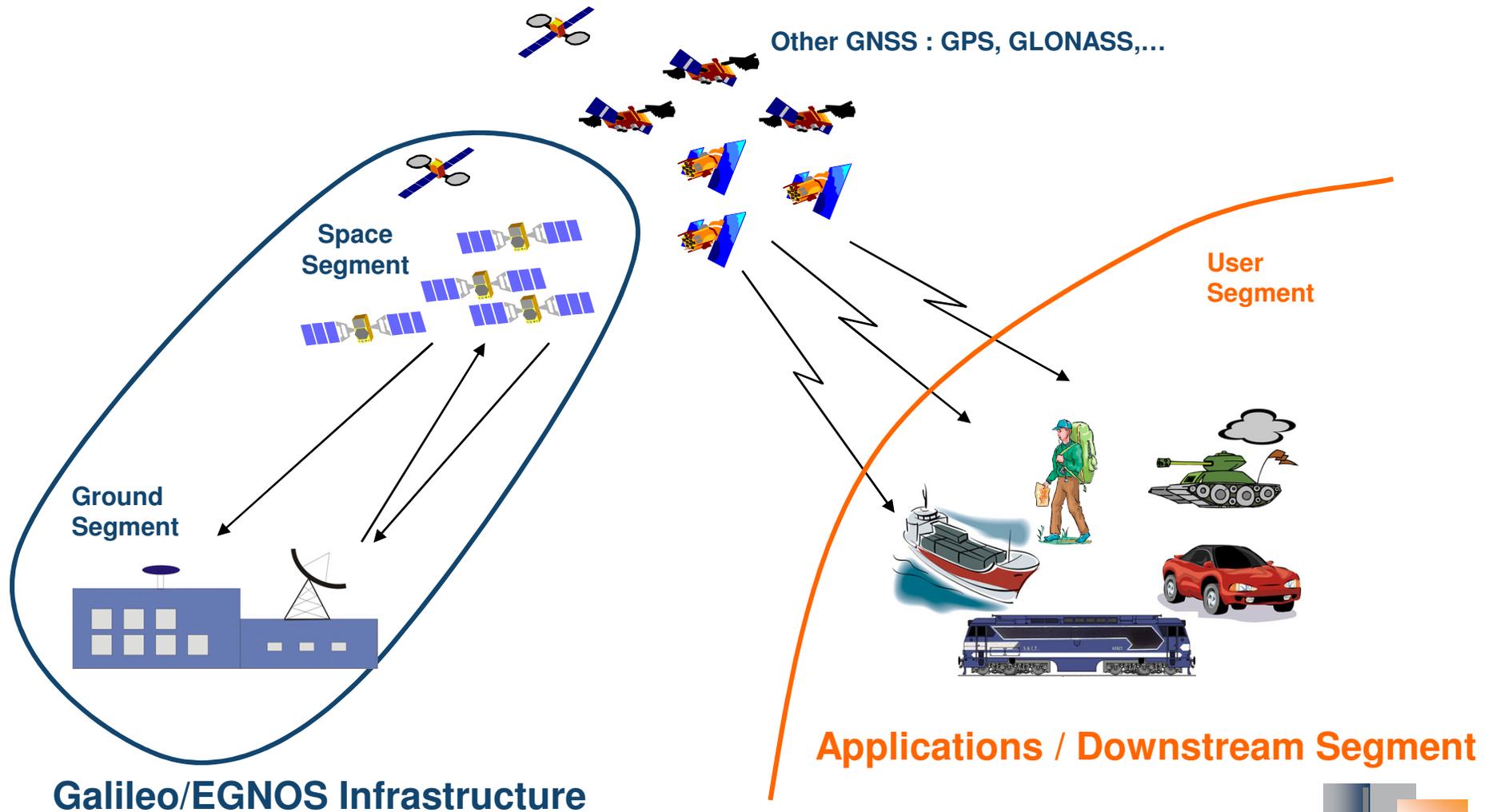
As stressed in a letter to Mr. Antonio Tajani, Vice-President of the European Commission,

“- the start of the realization of this wonderful European project marks a new era for Europe and its citizens on one hand and for the downstream segment with GNSS applications and services on the other”.

Industry players can now hopefully rely on Galileo actually becoming a reality and make their plans accordingly. It is therefore crucial that EU is following up its intentions and completes a full constellation of 30 satellites according to plan.



Focus: GNSS Downstream Segment Applications, Services, Equipment



Galileo Services Overview (1/3)



- >• Non-profit Association
 - Aimed at developing, promoting and maximizing the potential of the GNSS applications' market
- >• Comprising key GNSS Downstream Industry Players
- >• Representing all elements of the value chain
 - Covering all major application sectors (aviation, maritime, road, rail, telecom...)
- >• Missions:
 - Voice Industry concerns & expectations toward the institutions
 - Share market experience and knowledge of user needs
 - Support the implementation of the European GNSS Programmes

Galileo Services Overview (2/3)



- Members Profile:
 - Chip producers, equipment manufacturers, software developers, data content and map providers, service providers, integrators, etc.
 - Experienced in all kinds of applications
 - ➔ Safety of Life, Governmental, Professional, Mass Markets
 - ➔ Aviation, Maritime, Rail, Road, Intermodal, Leisure, Scientific, Agriculture, etc.

Galileo Services Overview (3/3)



Galileo Members:



Backing on 

Network (160 Members – 20 countries)

Galileo Programme Main Objectives



- > • **Independence/Autonomy** with regard to other GNSS
- > • To get a **significant share** of the huge and continuously growing **worldwide GNSS market**

Market applications and consumer services



Navigation Applications

Systems and applications dedicated to car navigation

- Includes: PND, integrated equipment (OE) and applications for car navigation - Smartphone

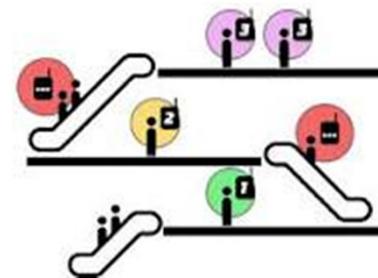
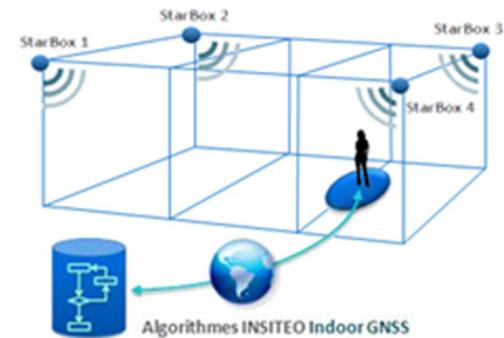


Integration, Hybridation, Indoor Navigation



The main players within indoor navigation

- Development of Internet and mobile guides for airports, malls, museums, downtown ...
- Navizon (Navimote): GPS, Wi-Fi, Cellular
- Insiteo: Wi-Fi, Pseudolites GPS
- Point Inside
- Micello
- FastMall
- TeleAtlas
- Navteq



Cartography



The main players

- TomTom/TeleAtlas

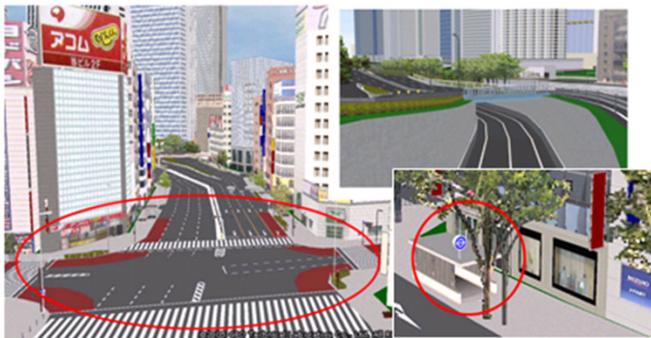


- Navteq

- Market leading supplier of maps
- Acquired by Nokia



- Zenrin



- Google

- New entrant to the market for LBS



GNSS Application Examples (1/5)



- Transport: Safety and efficiency increase for aviation, maritime and inland waterways, rail, road transport...



- Agriculture : Livestock Management, Precision Agriculture (steering guidance, farm logistics)...

GNSS Application Examples (2/5)

- Health : Tracking & Tracing on medical goods (organs, blood...), Assistance to elderly and disabled people...
- Mobility: Navigation, Road tolling, Location Based Services, multi-modal transport services...



GNSS Application Examples (3/5)



- Security and Safety: protection of IPRs, secure asset and person tracking, Customs and Freight monitoring, coordination of emergency team, Lone worker protection...
- Environment protection: low cost sensors for landscape monitoring, Land monitoring and Land Administration through Surveying and Mapping, support to Ecologic Driving...

GNSS Application Examples (4/5)

- Asset tracking: Inventory control, efficient utilization of equipment, fleet management...
- Pet, Gadget and Toy tracking: 😊
Track all kinds of consumer items – service already provided by Apple for their phones...



GNSS Application Examples (5/5)



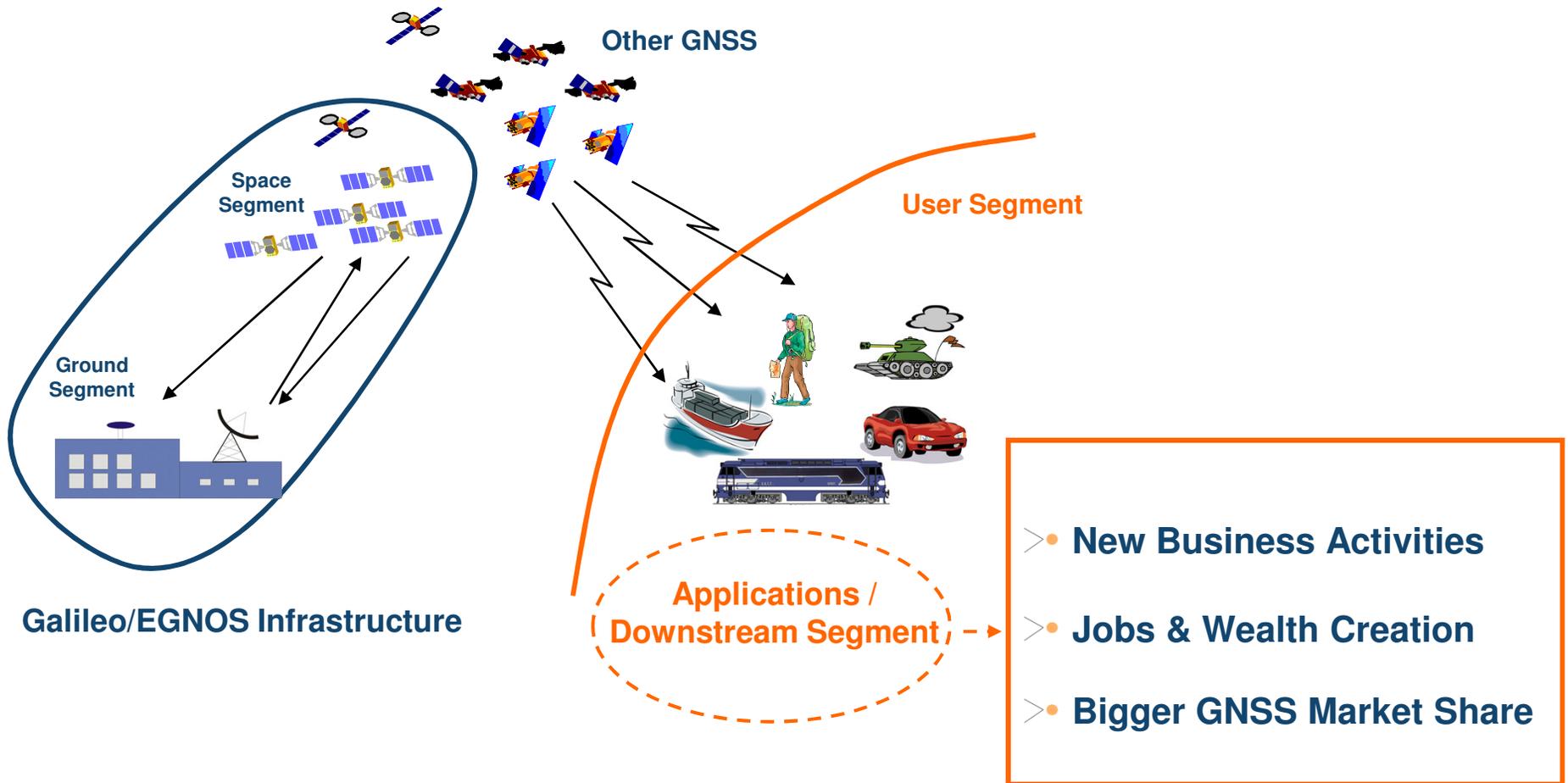
- Telecom Systems: Timing, synchronisation, transactions, tagging, maintenance...



- Power Grids: Synchronisation, maintenance, Smart Grids...



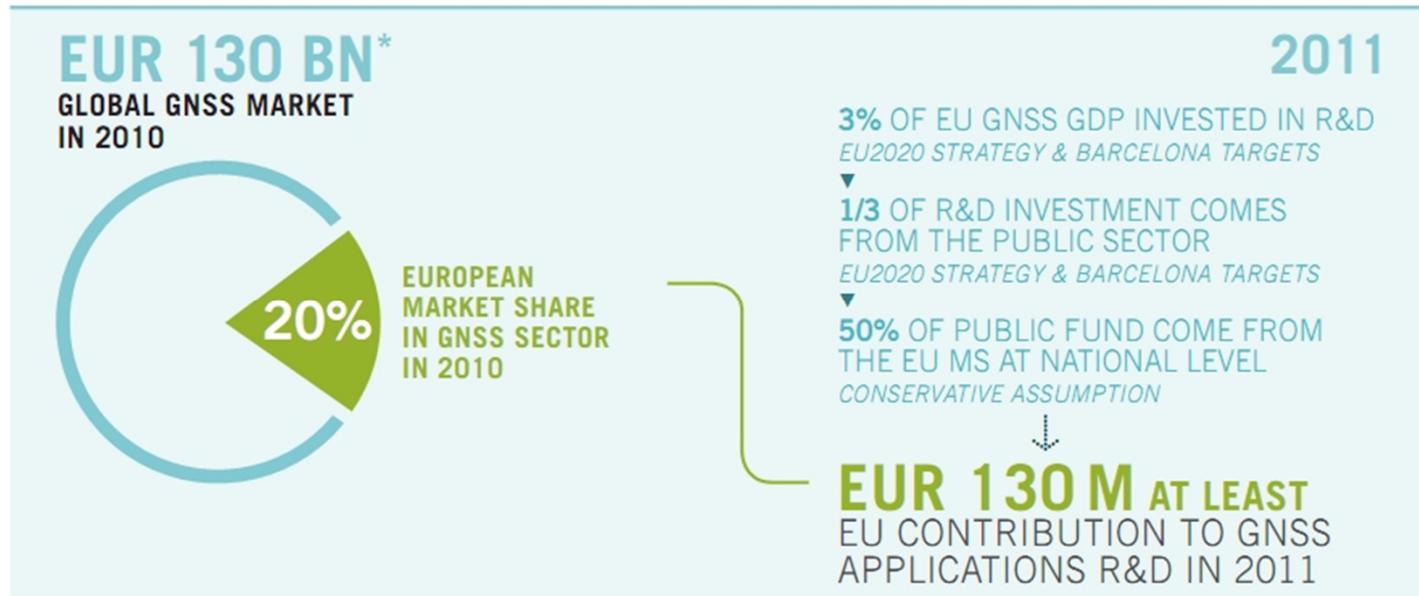
GNSS Downstream Segment Opportunities



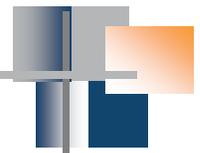
R&D Funding – Public Contribution



MINIMUM LEVEL OF EU PUBLIC FUND REQUIRED FOR GNSS APPLICATIONS R&D FROM 2011 TO 2021

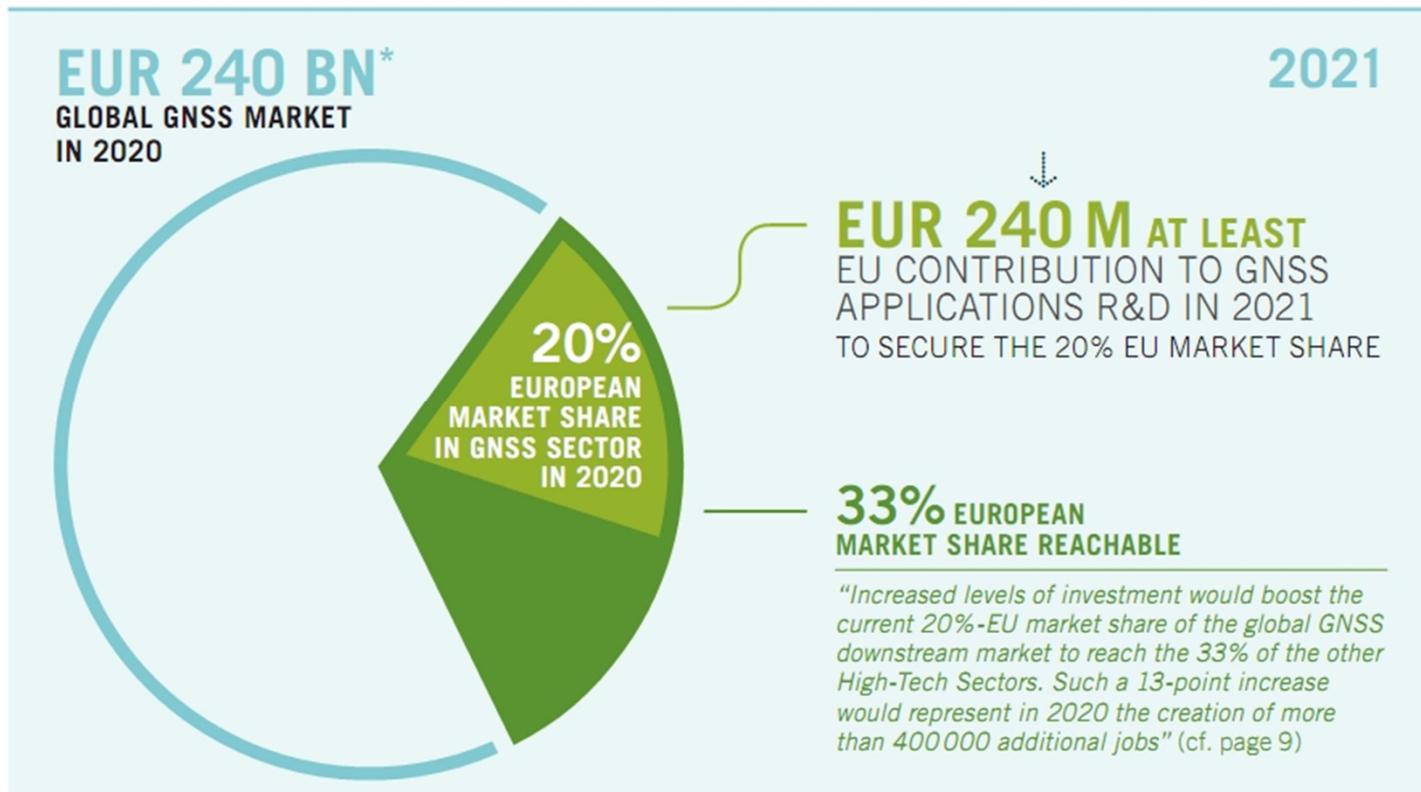


* GSA estimates

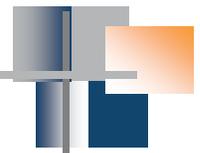


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European GNSS Research in Danger !



- >• **European GNSS Research is in Danger – Why?**
 - Major support for R&D is to be expected at European Level through Framework Programme
 - Very limited support at National Level
 - 350M€ initially allocated to GNSS R&D within FP7
 - Around 100M€ was left after the cut to fund the Galileo Infrastructure
 - And thereafter..... **No further support!** Budget being exhausted

What are the Challenges and Risks?



- The importance of Galileo for Europe and the strong need to complete the infrastructure deployment as fast as possible are indisputable!
- The support to GNSS applications development in Europe can not be delayed until Galileo early services are operational.
- The challenge is at the worldwide GNSS market level.
 - GNSS Technology : Under rapid development and out of reach in a few years
 - Current market boom
 - Immediate benefits from GNSS applications and services development
 - USA, Russia and China all have **programs at national strategic level** to take advantage of the growing GNSS market

The present context of economic crisis gives a strong additional incentive, not to lose the opportunity to develop new industrial activities in Europe

What is Urgently Required ?



- • Until 2013 (very short term)
 - To restore the initial GNSS R&D budget within FP7
 - to reallocate 250M€ to GNSS R&D to restore the 350M€

- • After 2013 (medium term)
 - To increase the level of EU's GNSS R&D funding through FP8 to match other continents public R&D investments

EU should provide the European GNSS downstream Industry with the means to be and to remain competitive

EU GNSS Industry and Universities Lobby Campaign



- Lobby campaign launched March 2010 and jointly conducted by EU GNSS Industry and Universities
- **Manifesto** advocating the EC, the Council, the EP and the EU MS to consider increasing Community funding for GNSS applications R&D

**MANIFESTO FOR A MORE COMMITTED EUROPE
TOWARDS THE DEVELOPMENT OF GNSS APPLICATIONS**

2008 and 2010 are very important years for EU GNSS programmes with the official launch of the EGNOS Open service on 1st October 2008, the award of several contracts on Galileo's infrastructure, such as the production of 14 satellites of the constellation, and the first 2 GIOV satellites to be launched by end 2010.

Many new applications related to positioning, navigation and timing may now effectively emerge and use the infrastructure. Air transport, modern, precision agriculture, environment protection, assistance to people on the move, to disabled and elderly citizens, synchronisation of complex networks are some examples of the very wide domain of applications concerned. The GNSS global market of products and services, which was worth €204 bn in 2008, is expected to double by 2020.

Nevertheless, Europe's GNSS market share is currently rather low (20%) compared to its usual share in other high-technology sectors (25%). There is thus an inherent risk that Europe's industry misses a huge opportunity to develop, unless a substantial public funded support program is fostered, innovation, development and new business opportunities to its citizens. Being the owner of the Galileo and EGNOS assets, the European Union has a great responsibility in facilitating the utilisation of this opportunity to the best for Europe and Europe's citizens.

Research is proven to be the most favourable way to stimulate innovation and to develop cutting-edge applications and user segments. It is the key to success for European industry in a competitive world. In some countries like the US, China and Russia, public funding support is driven largely by military and strategic aspects. EU public funded programs are estimated to reach between 200 M€ and 500 M€ per year. In Europe though, EU GNSS programmes are driven by civilian purposes only and effectively the EU budget now is of around 10 M€ a year for both years, after that, there is no allocated funding at all.

EC estimate

Such a tiny EU research budget will have huge consequences for EU industry in the short term. Neither will it allow for sufficient support of the SMEs which have been recognised as one of the main forces of innovation. Foreign industries benefiting from ample public funding, a strong R&D advantage and established market positions will overtake EU's market. Moreover, EU's effort to gain its independence as regards GNSS, by building its own infrastructure, will be pointless if it is dependent on foreign applications, receivers and devices.

The present context of the economic crisis also gives a strong incentive not to lose this opportunity to develop new industrial activities in Europe. Galileo applications have the potential of creating some tens of thousands of new jobs in Europe in the ten coming years.

The EU and its Member States are therefore

Bureau 1st level 2010

European Authorities urged to boost GNSS Research!

EU, European industry and university representatives need today for a decision in Brussels to stress their deep concern with regard to the future of GNSS Research in Europe and to reiterate the launch of a Manifesto for "a More Committed Europe towards the Development of GNSS Applications".

During originally allocated within the EU 6th and 7th Framework Programmes (FP6 and FP7) to support GNSS applications development the spent money in 2007-2010 is a part of the GNSS infrastructure in several Member States. There is no more budget during the remaining time left to have GNSS R&D within FP7. Such a situation will cause as it may put at risk many European Universities, Research organisations and industries and in particular small companies to reduce their research and development activities towards GNSS and GNSS applications. The manifestos are intended not only for the consideration of European governments, research institutions and research communities, but it might also impact on the attention of users, communities and associations in member states for European GNSS services a desire to be cooperative soon.

European Research Partners have decided to join together to send the alarm and require national and European decision makers at a time when they are seeking Community Research funding for the coming years.

It is essential not to miss FP7. Europe can't afford to lose the momentum created by the FP6 and 7th GNSS infrastructure and thus to miss a unique opportunity to boost Europe's competitiveness through joint efforts to develop new business in Europe (small and big) and to attract new funding sources and Member States' resources.

An ambitious European GNSS R&D Programme is required now as the GNSS technology is growing fast and new business applications will be needed for the next decade. FP7 is last opportunity for Research, Technological universities of Europe.

10th of October, CEO of PSC and Co-ordinator of EGNOS will address the FP7-08 Research Council and the Commission in regard of the situation concerning Galileo and EGNOS. Considering the competition Galileo needs an more R&D support to become a success for European industry.

The Manifesto, endorsed today, urges the European Commission, the European Council, the European Parliament and the Member States of the European Union to consider increasing the financial Community funding for GNSS Applications R&D to:

- To foster the development of GNSS and GNSS applications,
- To leverage European Industry and Research organisations' activities in the GNSS global environment,
- And thus to guarantee the application for Europe to participate on public investment that will be made for the Europe's GNSS infrastructure.

ALREADY SIGNED BY MORE THAN 100 EUROPEAN EUROPEAN RESEARCH PARTNERS THE FOLLOWING RESEARCH INSTITUTES IS OPEN TO FURTHER SIGNATURES.

For further information please contact the Galileo
Industry and Universities Research Partners
EUROPEAN GALILEO INDUSTRY AND UNIVERSITIES RESEARCH PARTNERS

➤ Manifesto Supporters:



➤ + 100s of individual signatories from Industry and Academia

... Equivalent to more than 350 supporters

Galileo Services - Position Paper



REALIZING THE AMBITIONS OF EU2020

The present Position Paper is consecutive to the European Parliament Resolution of 7 June 2011 on Transport applications of Global Navigation Satellite Systems, and coincides with the preparation of the Common Strategic Framework and future “Horizon 2020” programme for research and innovation.

This paper will detail how GNSS¹ applications can act to take up EU challenges and to reach EU2020 ambitions.

Line to take

- >• To enforce the European Parliament resolution of 7 June 2011 on Transport Applications of Global Navigation Satellite Systems
- >• To foster European knowledge and know-how to reach excellence in the GNSS field
- >• To **guarantee the use** of Galileo and EGNOS by securing substantial EU public investments now in their applications development
- >• To **dramatically and quickly increase the level of EU public funding** in GNSS applications R&D to a **minimum of EUR 100-200 M per year** to optimize EU benefits and not miss the window of opportunity for Europe
- >• To support the European industry in investing and developing critical GNSS technologies, applications and services

Available at: www.galileo-services.org



Thank you for your attention

For further information about Galileo Services:

www.galileo-services.org

or

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