



Directorate-General  
for Energy  
and Transport

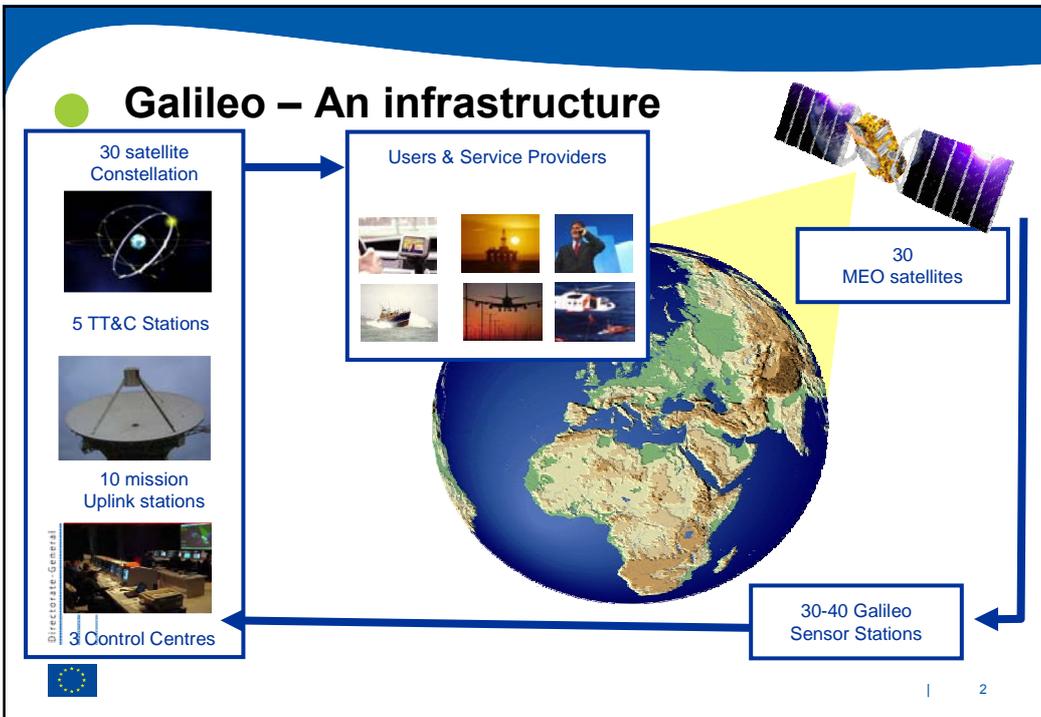
## Status of the European EGNOS and Galileo Programmes



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EC DG-TREN



June 2008



## Galileo – 5 services

<b>Open Access</b>	Free to air; Mass market; Simple positioning	
<b>Commercial</b>	Encrypted; High accuracy; Guaranteed service	
<b>Safety of Life</b>	Open Service + Integrity and Authentication of signal	
<b>Public Regulated</b>	Encrypted; Integrity; Continuous availability	
<b>Search and Rescue</b>	Near real-time; Precise; Return link feasible	

## Galileo: Open access

- Mass market applications
- Interoperability with other GNSS systems (dual receivers) and their evolutions
- Free of charge

	1 frequency	2 frequencies
Horizontal Positioning (95%)	15 [m]	4 [m]
Vertical Positioning (95%)	35 [m]	8 [m]
Velocity (95%)	0.5 [m/sec]	0.2 [m/sec]
Timing with respect to UTC	30 [nsec]	30 [nsec]
Global availability	99.8 %	99.8%

## ● Commercial Service



- Based on the open service standard Provisions
- Additional commercial encrypted data
- Added value services (higher accuracy, data broadcast, authentication) with respect to the open service
- Service guarantees
- Access through external Service Providers

## ● Applications

### Safety of Life

- Aviation
- Rail
- Maritime
- Inland waterways
- Ambulance
- Police / Fire
- Search and Rescue
- Personal Protection
- Traffic surveillance
- Dangerous goods trans.
- ADAS

### Mass Market

- Personal communication and navigation
- Cars / motorcycles
- Trucks & buses
- Light Commercial Vehicles
- Personal outdoor recreation
- Others...

### Professional

- Oil and Gas
- Mining
- Timing
- Environment
- Fleet Management
- Asset Management
- Geodesy
- Meteorological forecasting
- Land Survey / GIS
- Precision survey
- Precision Agriculture
- Fisheries / EEZ
- Vehicle control and robotics
- Construction / Civil Engineering
- Space

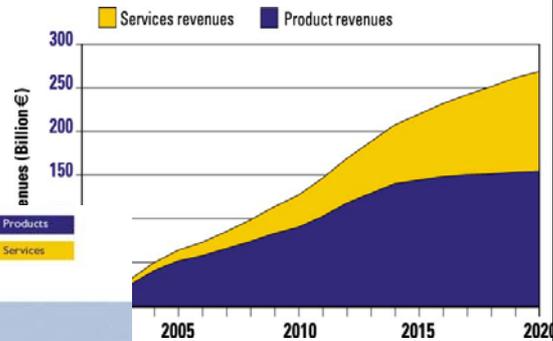
**Integrity (error-free),**  
Standards,  
Regulation,  
Continuity,  
Availability,  
Accuracy

**Low costs,**  
Low power cons.,  
Small size,  
Friendly use,  
Best perf.  
accordingly

**High precision,**  
High accuracy,  
High reliability

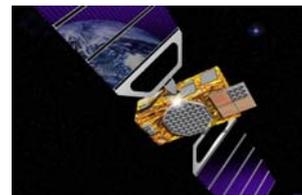
## Products & Services

- In 2020, Worldwide Market :**
- €275 - €300 billions
  - at least 3 billion users

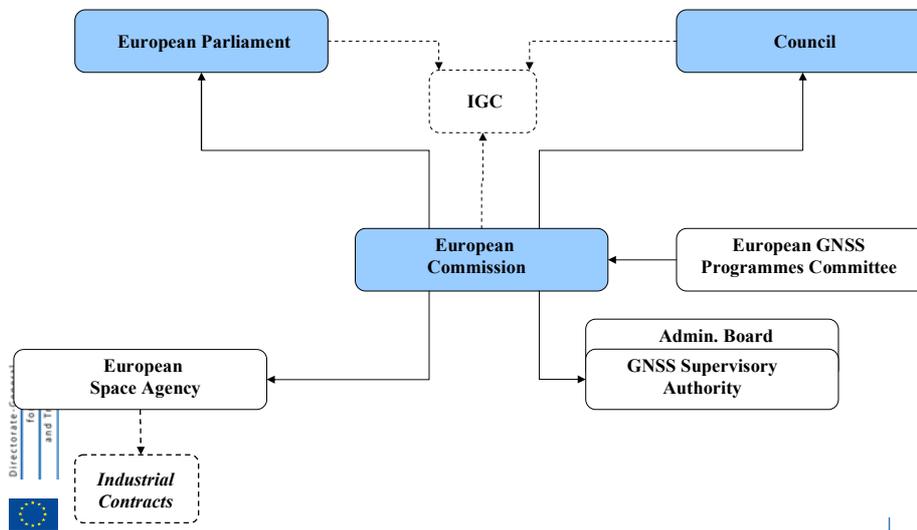


## 2007 – a reprofiling year

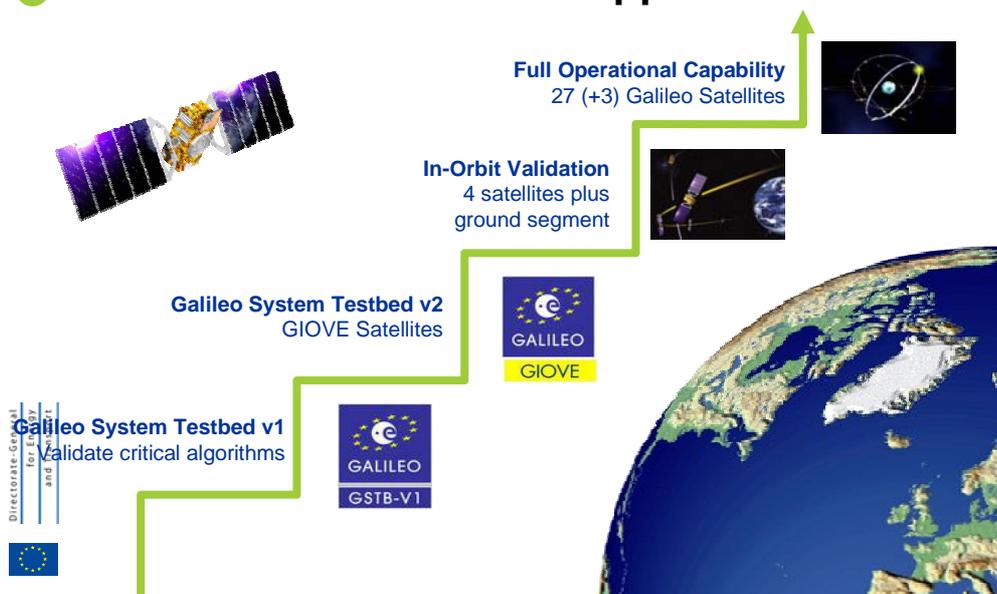
- PPP / Concession weaknesses
  - ⇒ design risk
  - ⇒ market risk
- Council Conclusions 8 June 2007
  - ⇒ stop concession negotiations
- Council Conclusions 30 November 2007
  - ⇒ go ahead + Financing
- April 2008: Consensus on GNSS Regulation
- 3 Q 2008: start deployment procurement



## Governance



## Galileo – an incremental approach



## Galileo International Activities

### Perspectives

- New worldwide infrastructure
- Regional & Local components
- Research & technology
- Industrial cooperation
- Market development and Trade
- Global Standards and certification

### Galileo Centres

- China
- Egypt (Mediterranean Region)
- Latin America

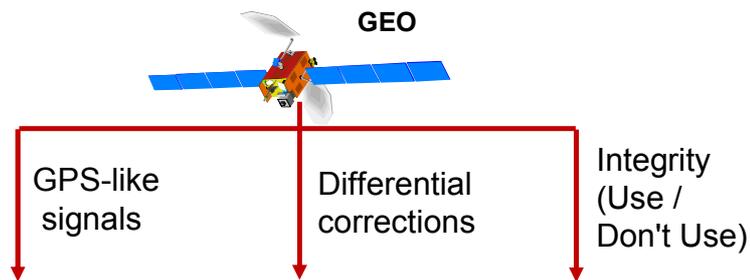
Agreement EU-MS and..	Signed / Initialed
U.S.A.	✓
China	✓
Israel	✓
India	✓
Morocco	✓
South Korea	✓
Ukraine	✓

*\*Exploratory talks on going with other countries, including Russian Federation and Japan*

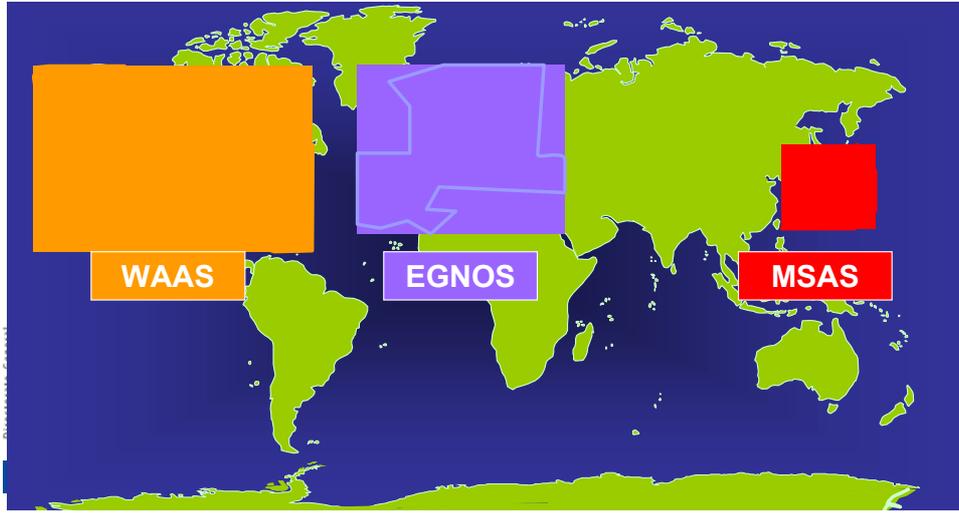
### Galileo International Board

To be set up in order to associate non EU partner countries in the management structures of the Galileo programme

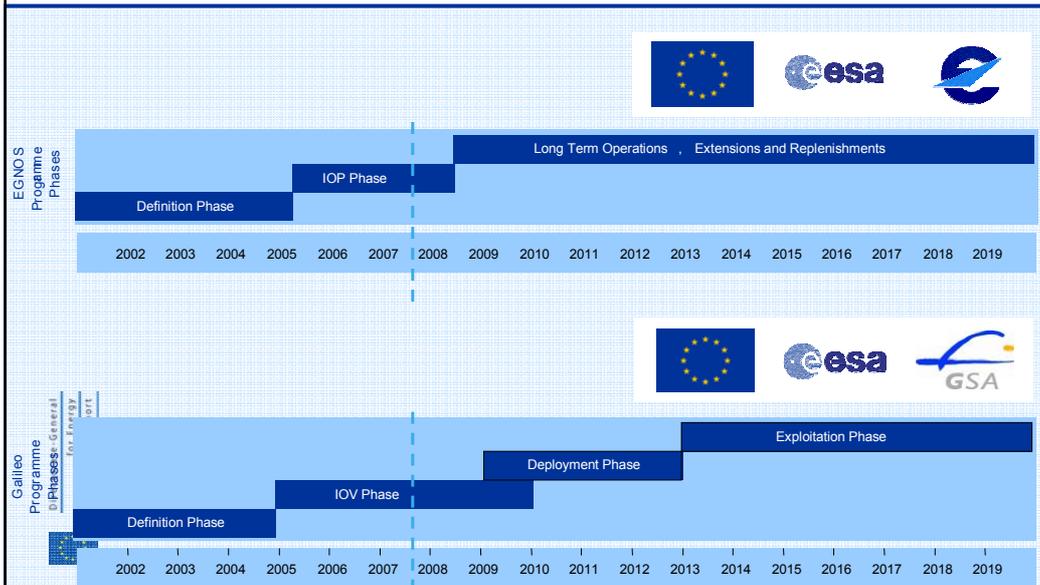
## EGNOS



- EGNOS is fully interoperable with other existing systems..



## ● The Schedule



## ● Conclusions



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EGNOS is in its Operational Validation Phase

- Open Service in 2008
- Safety of Life Service in 2009

Galileo is in its Development Phase

- GIOVE-A mission on-going
- GIOVE-B was launched in April 2008
- Initial 4 satellites by 2010
- Full Operational Capability by 2013

International Cooperation is an important feature within both the EGNOS and Galileo programmes:

- Infrastructure & Services
- Research & Development
- Market Development