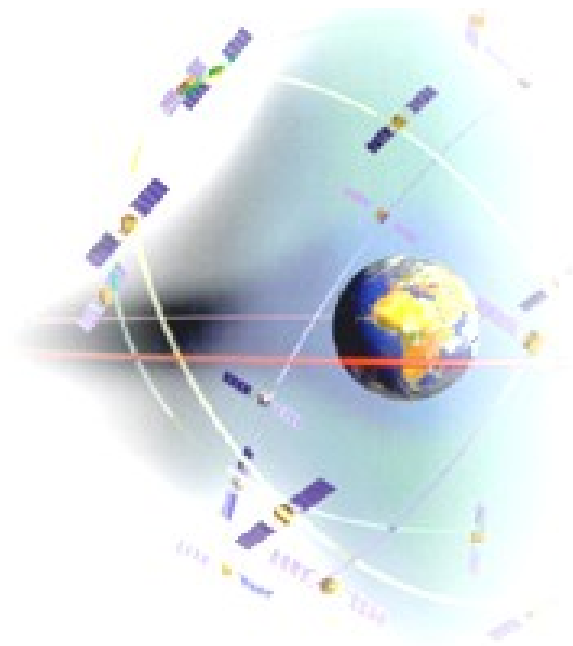




Galileo initiatives in Piedmont and Turin

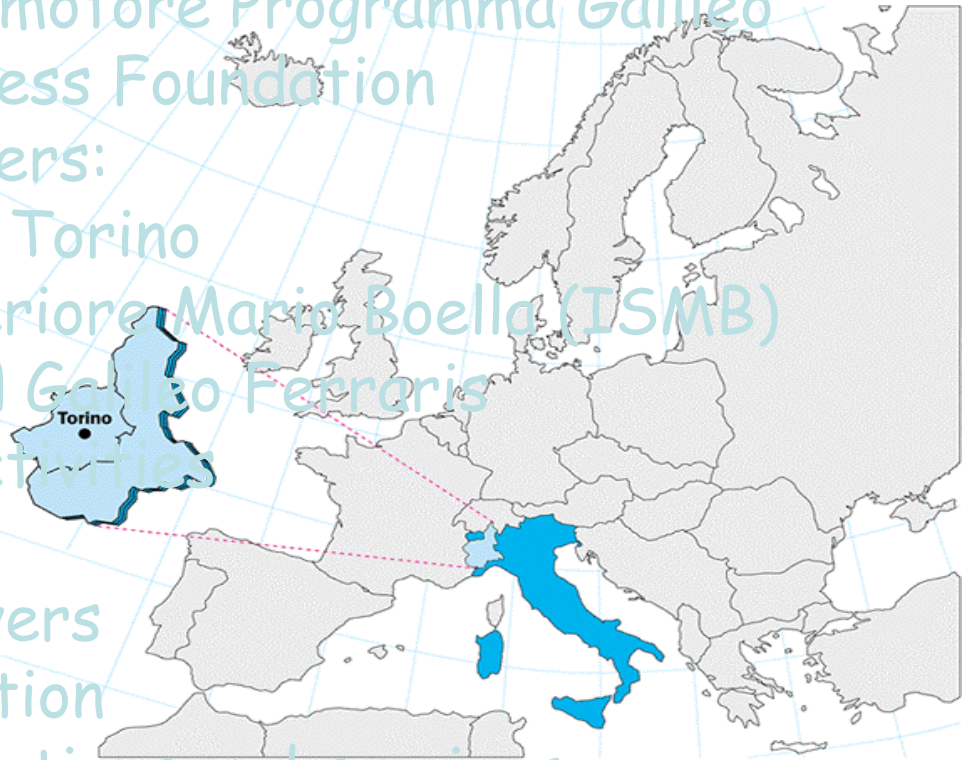


Luigi Bragagnini
Director Consorzio Torino Time



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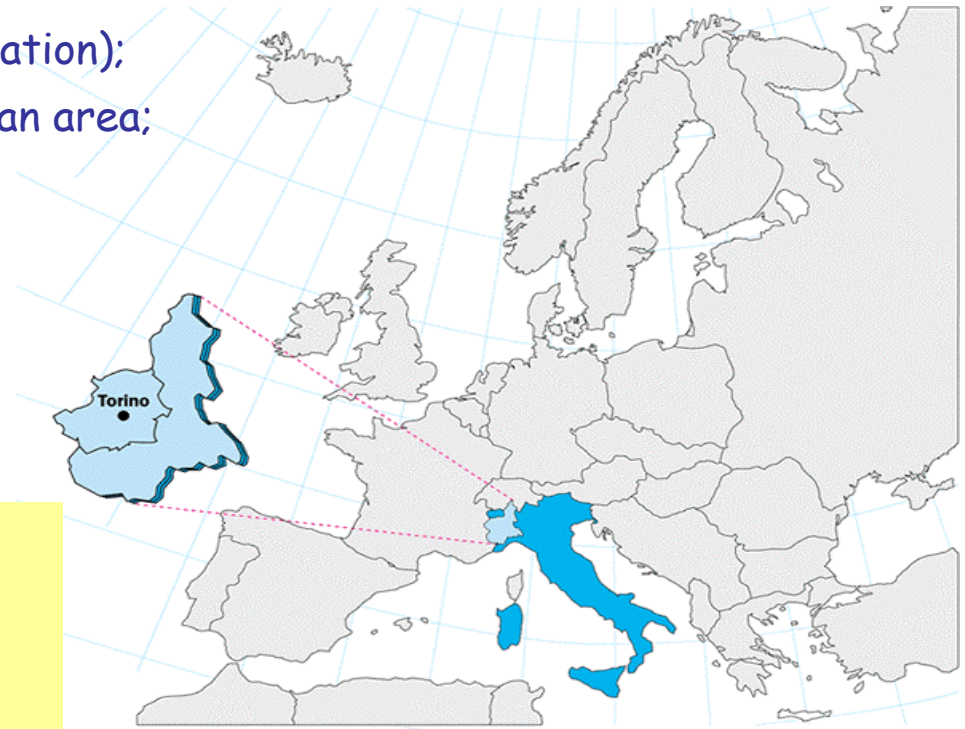


Piedmont and Torino key figures

- 4.3 millions inhabitants (7% of Italian population);
- 1.5 millions inhabitants in Torino metropolitan area;
- 74.6 B€ GDP (9% of Italian GDP);
- 17400 € per capita income;
- 10% of national industrial production;
- 25.3 B€ export (13.3% of Italian export);
- 27% export in high-tech sector.

Key Figures in High Tech

- **1st Italian region in terms of employees in the High Tech sector;**
- 53.688 employees in the ICT sector;
- 6.805 companies;
- 20% of national patents;
- 30% of national R&D expenditures





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Comitato Promotore Programma Galileo

Mission:

to support the participation of the local community in the Galileo Program activities



The Institutional Partners of

Government local bodies

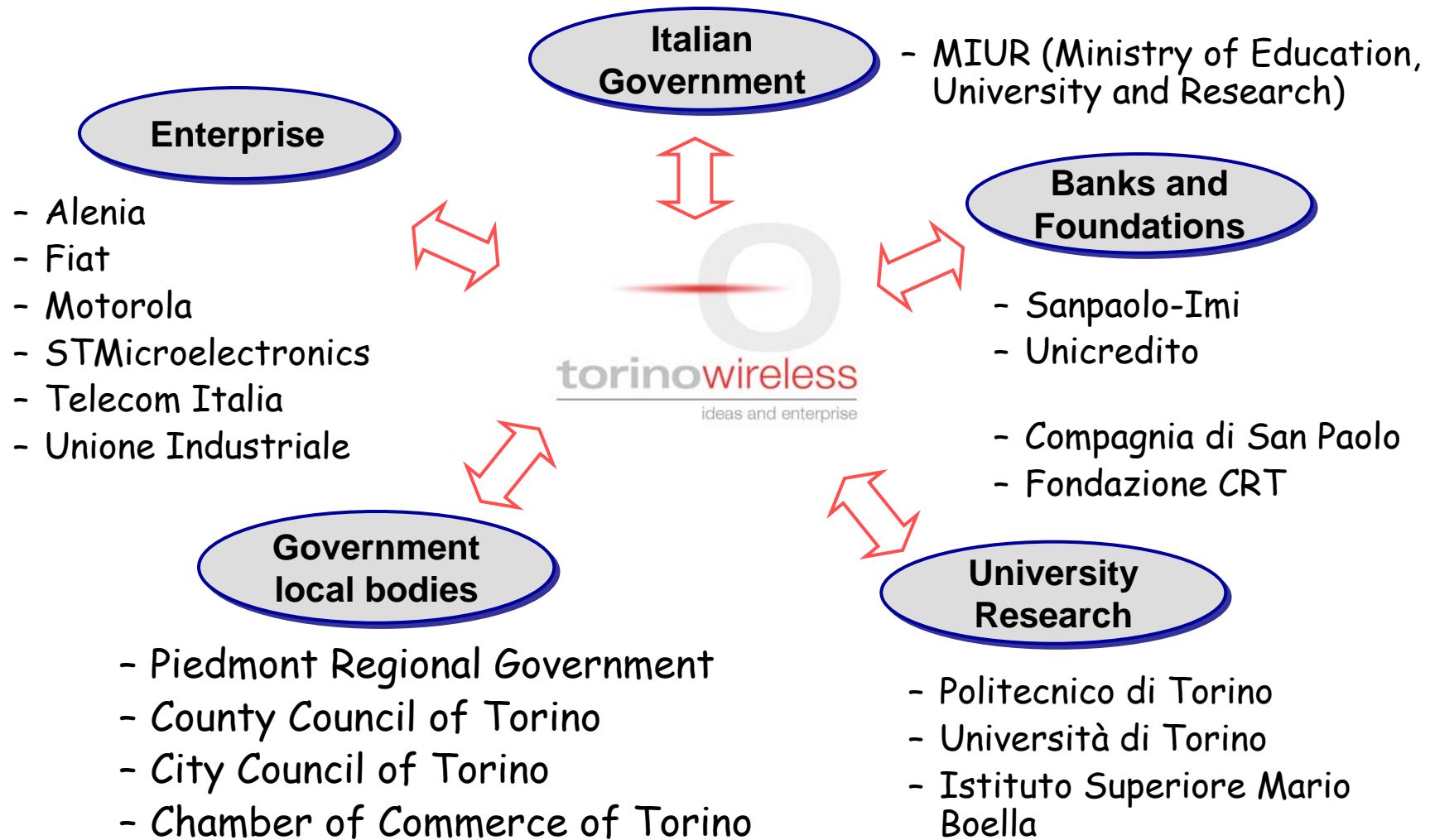


Scientific Working group





Torino Wireless: the Piedmont ICT Technology district





Torino Wireless: the district goals

Indicator	today...	...in 10 years
ICT incidence on GDP	5%	10%
Number of R&D professionals	over 2.000	4.000- 6.000
Self- sustaining of the cluster	Public funding	Fully self-sustaining cluster

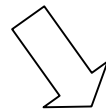
At least 50 new ICT start- ups with good performance



The Galileo initiative objective

Create a **Galileo pole of excellence** in Torino based on:

- Local existing competences (scientific and industrial)
- Wide communication strategy
- **Eu and International level cooperation and alliances**
- **SMEs cooperation and growth.**



The Galileo Pole of Excellence in Torino



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Istituto Superiore Mario Boella (ISMB) - History



- **April 1998** Strategic Agreement between **Politecnico** and **Compagnia di San Paolo** to support ICT R&D and education
- **July 2000** ISMB is established by founding members, **Compagnia di San Paolo** and **Politecnico di Torino**
- **June 2001** **Motorola, STMicroelectronics** and **Telecom Italia** become industrial partners
- **Dec. 2001** ISMB signs **Torino Wireless District MoU**
- **Jan. 2003** ISMB “Stable Structure” of **Compagnia di San Paolo**
- **Sept. 2003** ISMB in the new 4.000 m² **via Boggio** building
- **March 2005** **SKF** new industrial partner of ISMB





ISMB: an applied research excellence Centre where Politecnico and Industries work together

1. Cluster of ISMB/Politecnico/ industrial partners joint labs

- Antennas and Electromagnetic Compatibility
- **e-Security**
- Photonics
- **Networks and Protocols**
- Systems & Applications
- Wireless Technology for Multimedia
- Nanotechnologies and Microelectronics
- **Galileo and Satellite Navigation**



200 researchers

120 ISMB

80 Politecnico / industrial partners

2. Cluster of ISMB/industrial partners joint labs

- Accent: design center for microelectronics
- **Alcatel Alenia Space (Laben): GNSS receivers**
- Sendia: applications of sales and work force management on mobile nets
- STMicroelectronics: sensor networks and wireless IP


I S M B
Istituto Superiore Mario Boella



INRIM - IEN Galileo Ferraris

- A public research institution in the **Metrology** field
- The Italian **Primary** Metrological Institute
- **WW** recognized for its **competences** in the **Time&Frequency** metrology and **'Time scales'**
- **Involved** since the beginning of **Galileo** in the **GST** (**Galileo System Time**) related activities
- **Key player** of the **GSTB V1 E-PTS** as **Alenia Spazio** subco
- **Key role** in ensuring **continuity** from **GSTB V1** to **IOV** **PTF**
- **Hosting** the **E-PTS** site





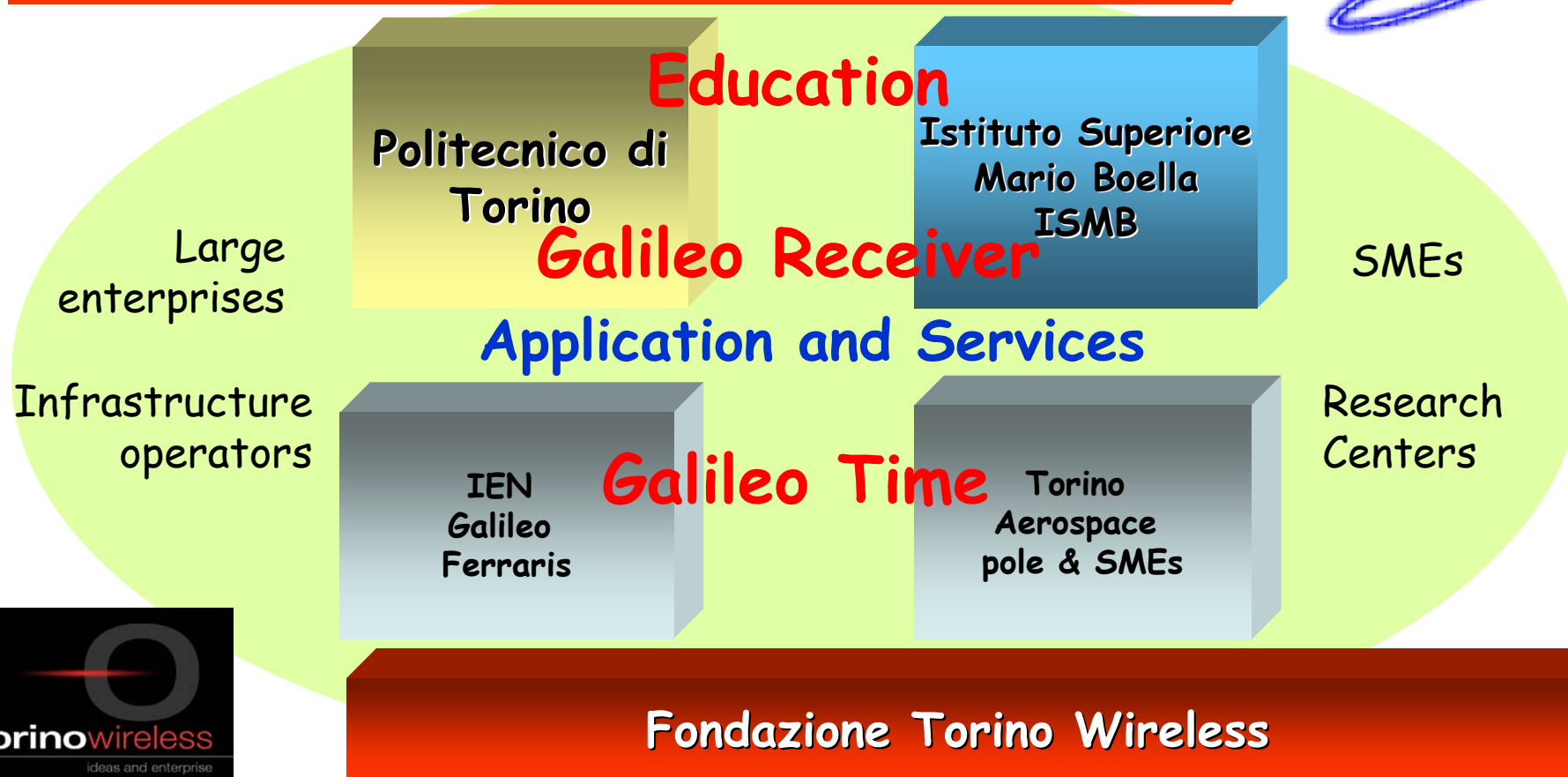
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The Galileo program scenario in Torino

Comitato Promotore Programma Galileo a Torino





THE GALILEO TIME

TORINO is in the ideal position to be a competence center in the Galileo Time and related applications thanks to available local expertise

Galileo System Test Bed V1 (started in 2003)



- The IEN Galileo Ferraris, subco of Alenia Spazio, hosts the E-PTS (Experimental Precision Timing Facility)
- The E-PTS:
 - includes the experimental GST (Galileo System Time) generation
 - tests the algorithms for GST generation and steering to UTC/TAI



The Consorzio Torino Time



Established in Torino
April 2nd 2004

Partners:

- Finpiemonte
- Fondazione Torinowireless
- IEN Galileo Ferraris
- Politecnico di Torino
- SEPA
- SIA
- Alenia Spazio
- Altec

Technology Partner:
• ISMB





The CTT mission



Put in place all the initiatives and resources required to:

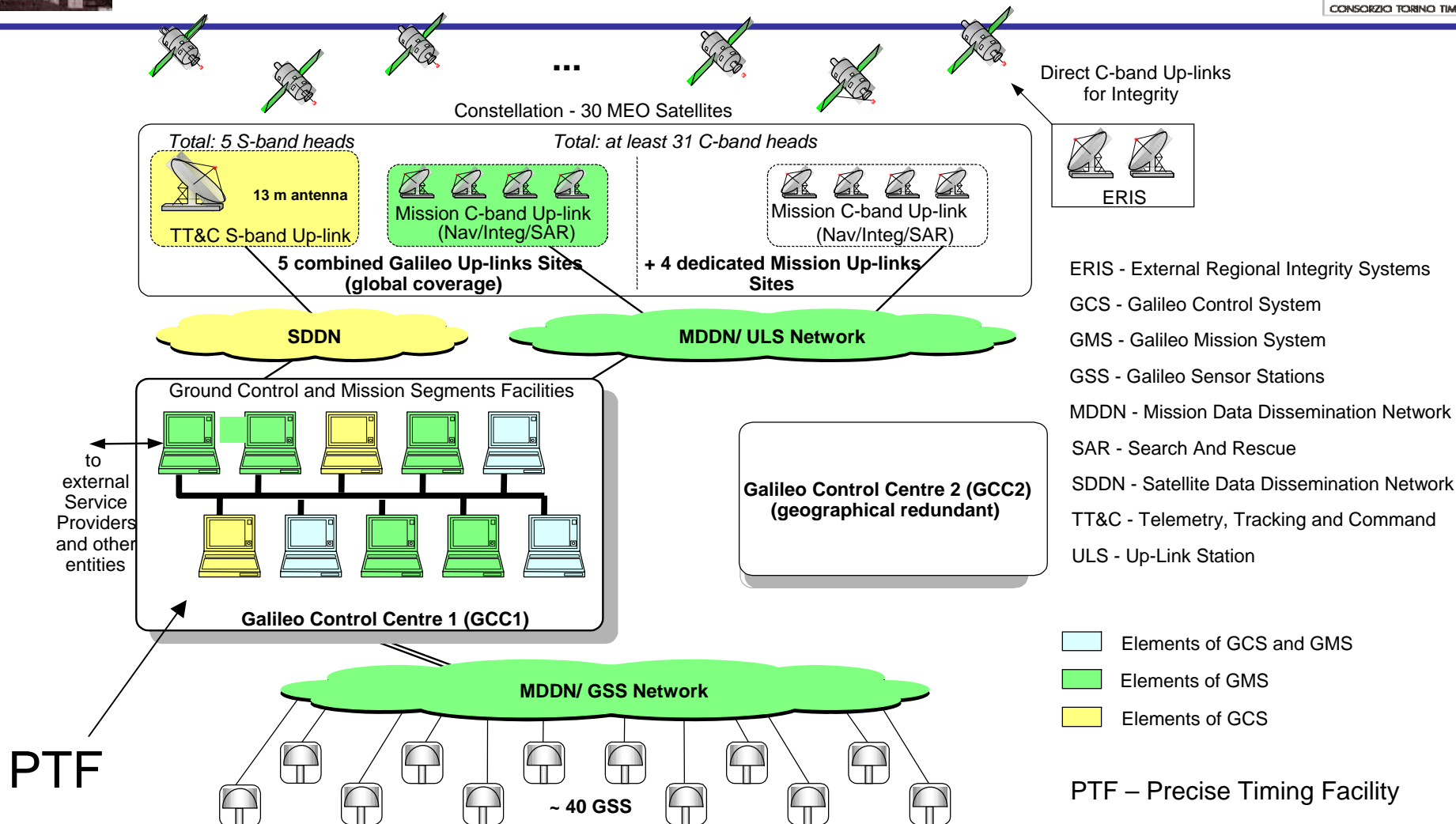
- bid for the **Galileo PTF** (Precision Timing Facility):
successfully acquired by end of July 2005
- **develop and deploy** the PTF in Turin meeting the **schedule, cost and performance** requirements, as negotiated with ESA and Galileo Industries by end of 2005

by leveraging the **local and national scientific, industrial and institutional** competences.





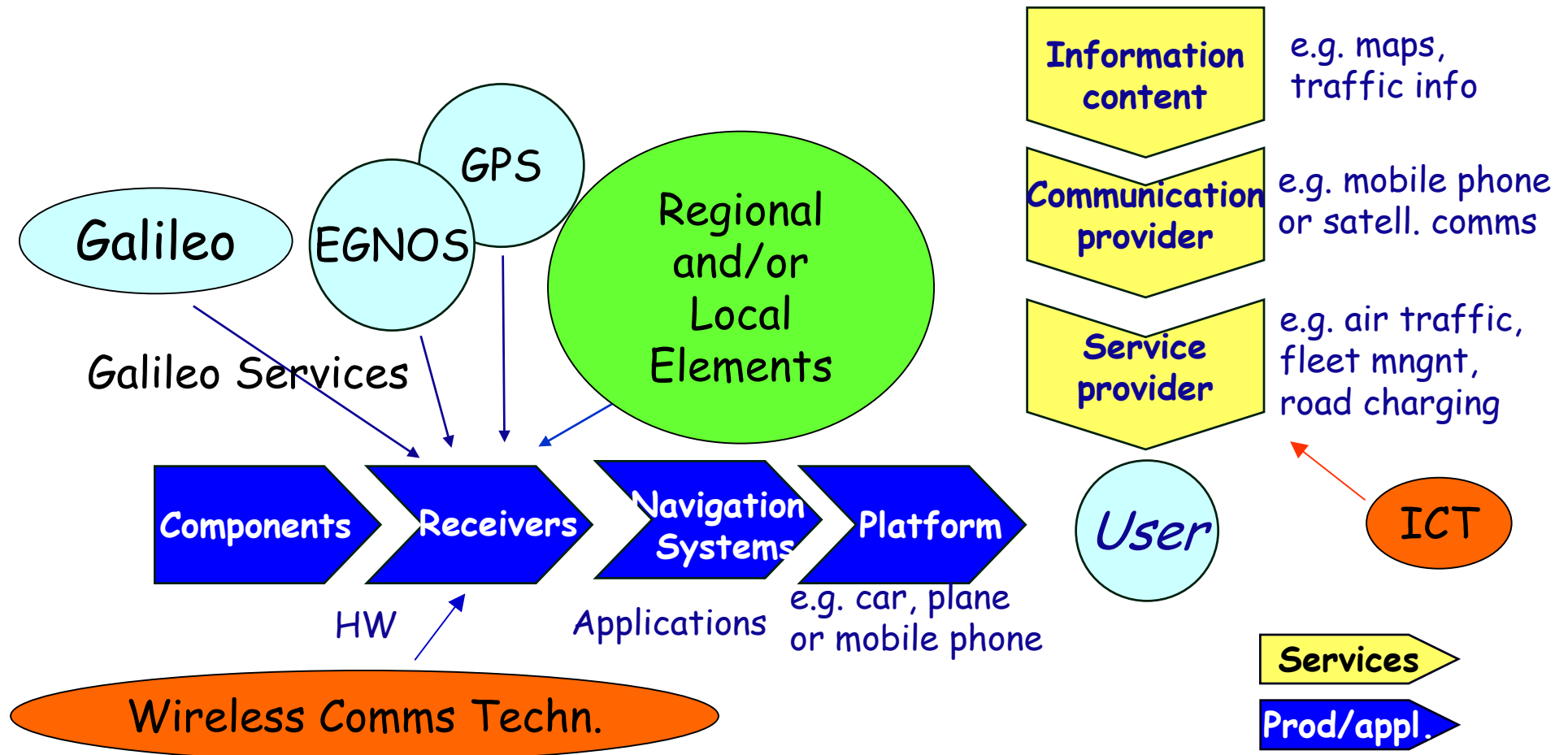
The PTF in the Galileo infrastructure





The Galileo Receivers

✿ The PVT receiver: the User Segment 'core' element





The Galileo receivers



Navigation Signal Analysis and Simulation



A Joint Research group focused on Galileo receivers



A leading research center

Technology transfer

Galileo Signal Task Force

**Participation to committee
and working groups**

GJU VI FP projects
GARDA, GILT, ARTUS
GIRASOLE, GR-POSTER
GREHDA, POP-ART



Education: Master On Navigation and Related Applications



A joint initiative of



Politecnico di Torino and Istituto Superiore Mario Boella
with the cooperation of IEN Galileo Ferraris and UN OOSA



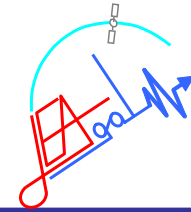
United Nations
Office for Outer
Space Affairs

The objective is to disseminate knowledge, a key element for the future exploitation of Galileo

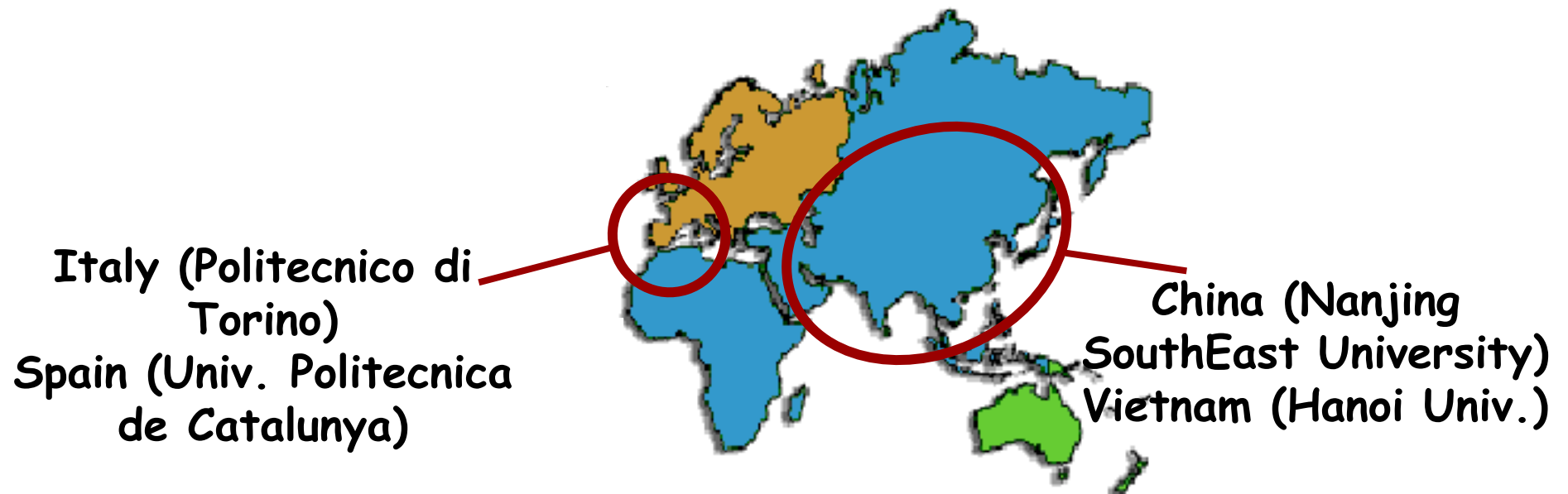
First edition in 2004 - 2005 academic year with 16 participants from 8 countries



Education: JEAGAL project (2005-2007)



EU-Asia Information Technology & Communication Program



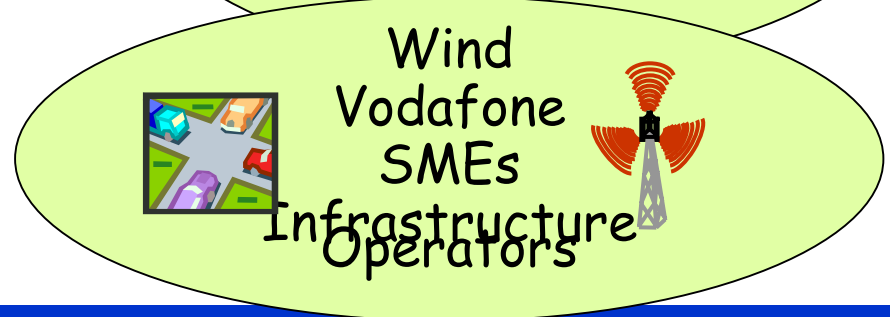
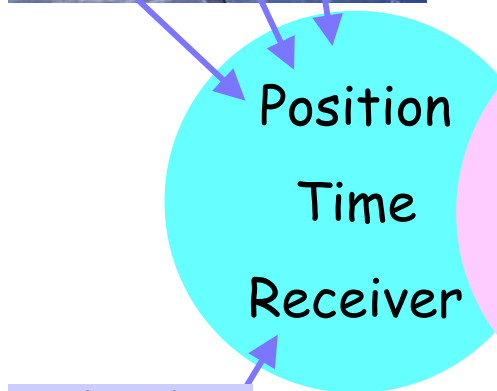
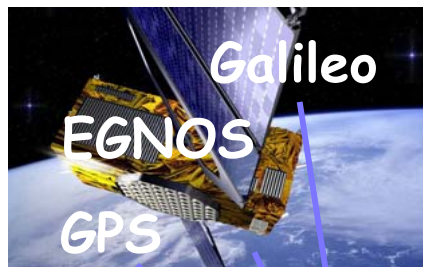
A Galileo 'train-the-trainer' program for China and Vietnam



Galileo Application and Services

The Application & Services Model

The major Piedmont players





Torino Wireless Call for Tender on Galileo (1/2)

- Objective: to stimulate SMEs to invest in term of R&D projects in Galileo technology developing products/services and applications
 - ✓ Total amount of call for tender **1.500.000€**, funded up to 70% by Torino Wireless Foundation
 - ✓ Innovation speed: 18 months of duration for R&D project to be compliant with Galileo time-frame program
 - ✓ To facilitate SMEs clustering: per project budget forecast **in the range from 200K€ up to 400K€**
 - ✓ Focus on **services and applications** (info-mobility, security, monitoring, emergency)
 - ✓ To include also educational activities on technical and economical aspects.



Torino Wireless Call for Tender on Galileo (2/2)

- The call for tender closed on 20th Dec. 2005
- 25 proposals received involving 65 SMEs, and 7.5M€ total request
- 5 high innovative projects awarded on 2nd Feb. 2006
 - 17 SMEs involved (with 2 Start-ups)
 - The projects refer to:
 - Localization service in mountain area,
 - Railway surveillance system,
 - Satellite navigation service for automatic aircraft drive system,
 - Rent a car Fleet Management
 - Dangerous Goods transport traceability

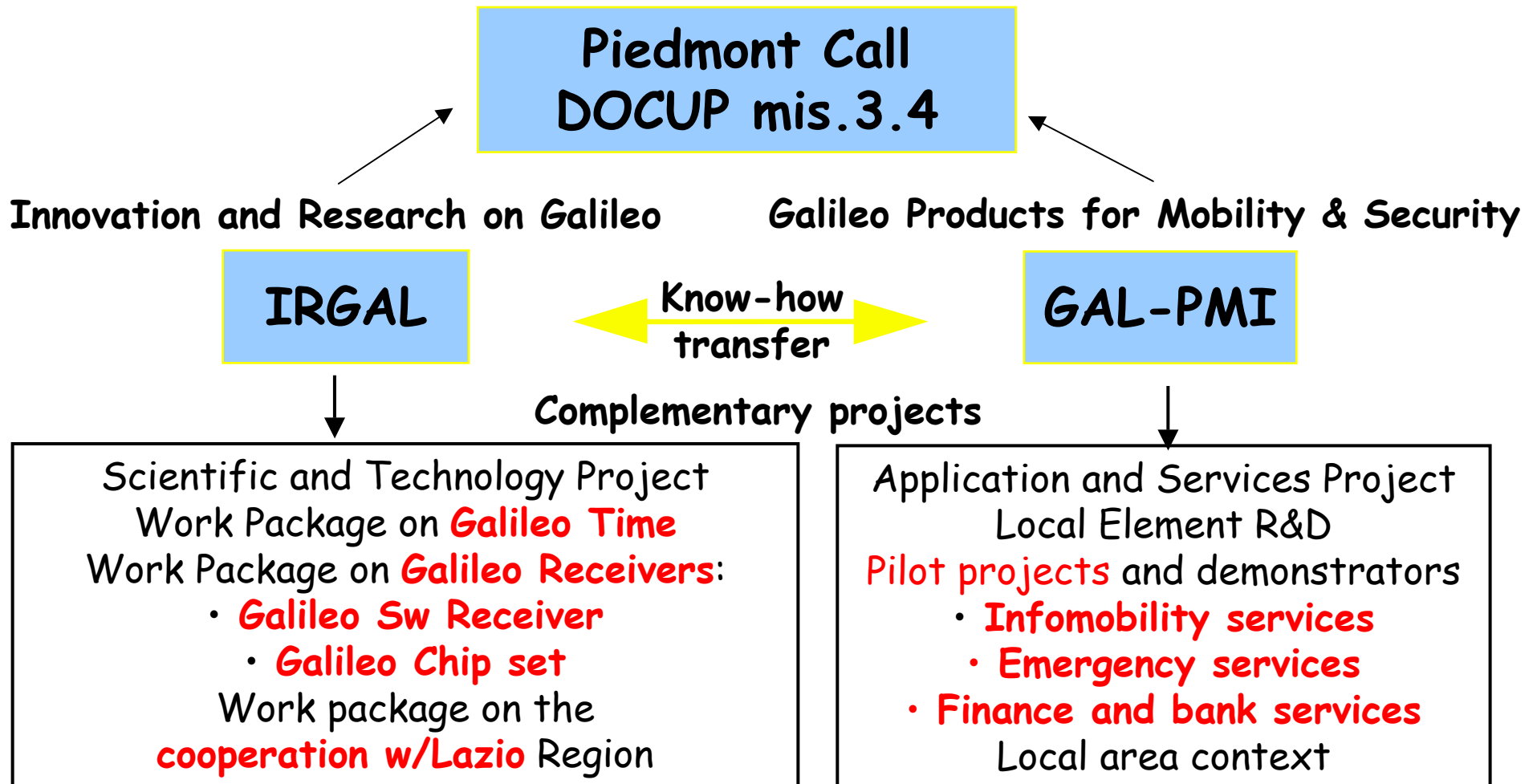


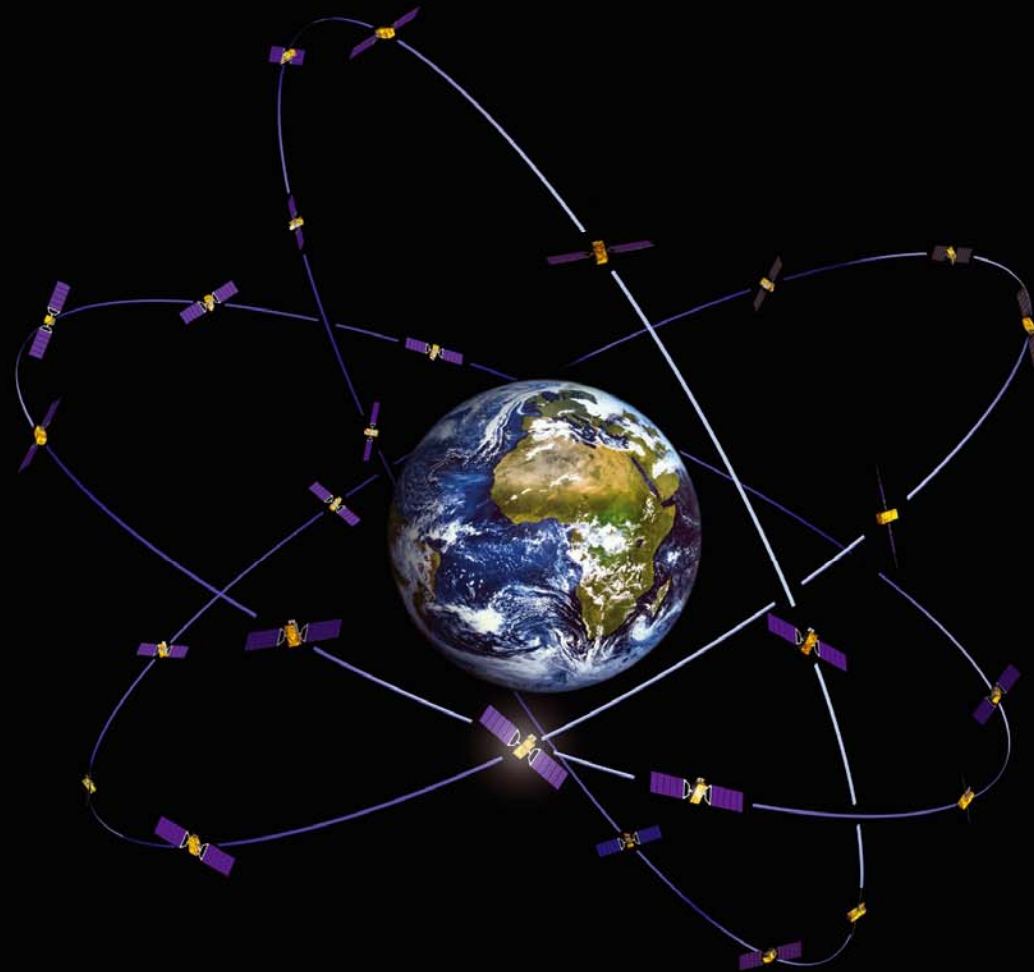
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Regional proposed projects on Galileo





Thank you!