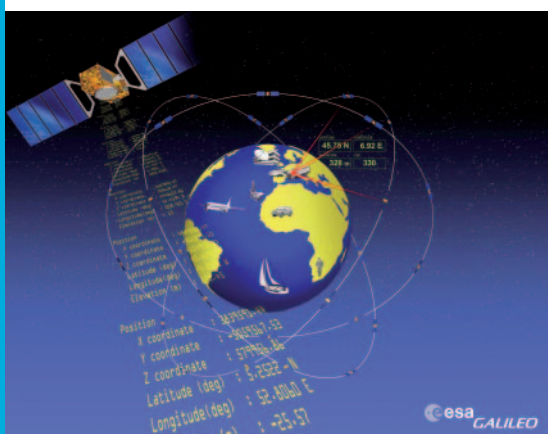


## What is GALILEO?

### A permanent reference in time and space

GALILEO is a global navigation infrastructure under civil control. It will broadcast a set of very high quality timing signals used by a receiver to determine precisely its position, velocity and time.

Compared to the U.S. Global Positioning System (GPS), GALILEO will provide more accurate positioning and timing services worldwide for civil applications. It will also be more reliable since it includes a signal informing the users of any errors ("integrity message"). It will not depend on other States' military authorities, which reserve the right to withdraw service from civil users at any time.



## Who can benefit from GALILEO?

Applications span a large range of sectors, not only in transport and communications but also in other markets such as land survey, agriculture, scientific research, tourism, energy distribution networks and banking systems. Individuals, companies and administrations will all be able to benefit, whether on the roads, railways, in the skies or at sea. To cite just a few examples: finding your way around a large building; monitoring animal transport or landing an aircraft with an accuracy of within 2 metres of the centre line of the runway – all this will soon be possible thanks to GALILEO.

By allowing near real-time reception of distress messages from anywhere on earth with precise location information and contact from rescue centres to people in distress, it will facilitate operations and reduce the rate of false alerts, hence saving more human lives.

Important macro-economic benefits will also be derived from GALILEO<sup>(1)</sup>, in particular through achieving a European share in the equipment market, efficiency savings for industry as well as social benefits e.g. through cheaper transport, reduced congestion and less pollution.

## How will GALILEO work?

GALILEO will consist of a constellation of 30 satellites and associated ground infrastructure. The set of very high quality timing signals will be processed by receivers in order to determine positions. All other functions, such as pinpointing position on a digital map or transmission of position information for other purposes, will be performed in the user device. The satellite navigation infrastructure itself is 'passive' by design, i.e. it is unaware of the user's location therefore safeguarding citizen privacy.

In addition, the European Union is building a global navigation satellite system (GNSS), comprising GALILEO and EGNOS (the European Geostationary Navigation Overlay Service), which will provide a set of positioning, navigation and timing services. Already operational, EGNOS is the European Satellite-Based Augmentation System that complements the United States' GPS and Russian GLONASS systems.

<sup>(1)</sup> The global market in products and services is estimated to grow at an annual rate of 25%. It has been forecast to reach €400 billion by 2025. Some 3 billion satellite navigation receivers should be in service by 2020.





## Technology evolution

New technologies such as radio frequency identification devices, geographical information systems, receiver miniaturisation, receiver power consumption reduction and synergies with telecommunications will create the conditions for the emergence of a spectrum of new developments exploiting satellite positioning in the coming years. Even 'indoor' positioning solutions are being developed to overcome current limitations and will become particularly relevant, for guiding blind people.

## Infrastructure

The development and validation phase of this major European programme is jointly financed by the European Community and the European Space Agency (ESA). The launch of the first GALILEO test satellite took place in 2005. The second test satellite is planned for the end of 2007/beginning of 2008, whilst the first four satellites of the operational constellation will be launched in the course of 2008.

A private consortium should then deploy the full constellation through a Public-Private Partnership contract, and full service availability should be provided as of 2011/2012.

GALILEO has a strong international dimension with global ambitions. As other nations in the world show interest, cooperation agreements have been established in order to promote and develop the use of GALILEO worldwide. Compatibility with the American GPS is also ensured, allowing combined use of the two systems.



More information on Galileo at:  
[http://europa.eu.int/comm/dgs/energy\\_transport/galileo/](http://europa.eu.int/comm/dgs/energy_transport/galileo/)