

GALILEO – A EUROPEAN INITIATIVE

GALILEO is a joint initiative by the European Union and the European Space Agency.

The **European Union**, represented by the European Commission, is responsible for the political dimension of GALILEO and for setting objectives.

http://europa.eu.int/comm/dgs/energy_transport/galileo

The **European Space Agency** is responsible for the technical definition, development and the validation of GALILEO.

<http://www.esa.int/export/esaSA/navigation.html>

The **GALILEO Joint Undertaking** will be responsible for the development of the GALILEO programme and the selection of a commercial operator, who will make a significant contribution to the funding of the establishment of GALILEO from 2006 and will provide the GALILEO services from 2008.

<http://www.galileoju.com>

The Directorate-General for Energy and Transport at the European Commission formulates and implements EU policy in these two closely linked sectors. The 2001 White Paper **European transport policy until 2010: time to choose** sets out 60 practical measures designed to bring about a considerable improvement in the quality and efficiency of transport in Europe by 2010. GALILEO is a key instrument in achieving the main objectives of the White Paper.

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http://europa.eu.int/comm/dgs/energy_transport/index_en.html

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A SYSTEM THAT IS SIMPLE BUT ...

Since time immemorial, people have looked to the heavens to find their way. Today, satellite navigation is continuing this tradition, while offering, thanks to leading-edge technology, an accuracy far beyond that possible from simply observing the sun and the stars. This technology, which has been developed over the last 30 years or so, originally essentially for military purposes, enables anyone with a receiver capable of picking up signals emitted by a constellation of satellites to instantly determine their position in time and space very accurately.

The operating principle is simple: the satellites in the constellation are fitted with an atomic clock measuring time very accurately. The satellites emit personalised signals indicating the precise time the signal leaves the satellite. The ground receiver, incorporated for example into a mobile phone, has in its memory the precise details of the orbits of all the satellites in the constellation. By reading the incoming signal, it can thus recognise the particular satellite, determine the time taken by the signal to arrive and calculate the distance from the satellite. Once the ground receiver receives the signals from at least four satellites simultaneously, it can calculate the exact position.

... REVOLUTIONARY

The role of global positioning systems via satellite in everyday life will increase considerably, in the same way as the microcomputer 20 years ago and the Internet 10 years ago; it is likely that at present we are not even aware of all the potential. With GALILEO, Europe is establishing a first global satellite navigation system designed for civilian needs, open to international cooperation and operated commercially.

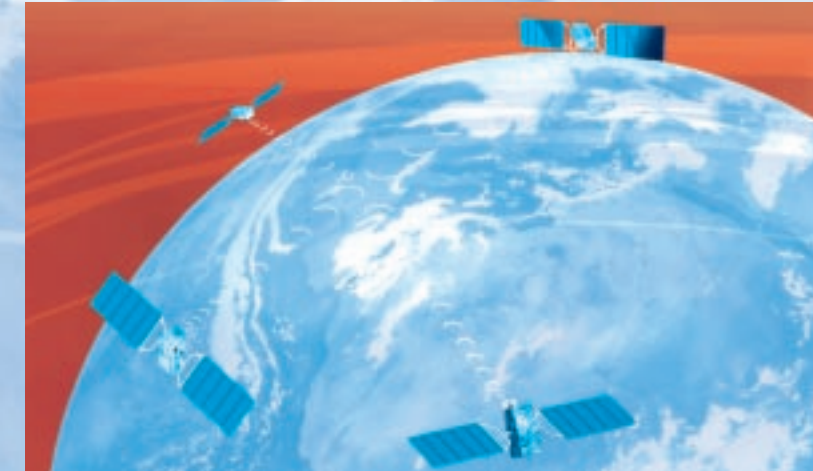
GALILEO will comprise a constellation of 30 satellites orbiting at an altitude of nearly 24 000 kilometres. Ground stations will be responsible for management and control. GALILEO will be operational from 2008, and will, in particular, help to resolve the mobility and transport problems facing many areas of the world at present.

In addition, thanks to the compatibility and interoperability of GALILEO and GPS, users throughout the world will have easier access to signals emitted by navigation satellites and will benefit from much greater efficiency. GALILEO will also offer greater accuracy than GPS.

The services offered by GALILEO will be covered by a guarantee of continuity which can even be laid down in a contract: this is a very important innovation when human life is involved, as with air or rail traffic control.

GALILEO will ensure Europe's strategic independence and enable European companies to be involved in a growing sector of industry whose annual market could be over EUR 200 billion in 2020 with 3 billion receivers in service.

GALILEO



Europe shows the way



EUROPEAN COMMISSION



Satellite radionavigation is a kind of space compass which allows people to determine their location very accurately. In short, satellite positioning equipment will become as essential as watches are today. Five years from now, every mobile phone will be able to receive signals emitted by satellites and will make it possible to pinpoint the location of people, vehicles, ships, planes, goods and animals at any time, anywhere in the world. This technology will considerably improve guidance systems, accident prevention, the efficiency of civil protection, such as emergency or distress calls, and environmental protection.

Locate

Reliable and accurate positioning services for hikers, sailors and motorists

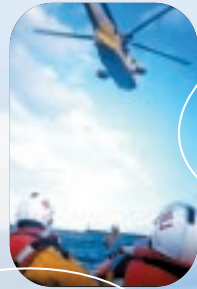


rescue

Guidance for firefighters, ambulance workers and the police services, who will benefit from being able to intervene more rapidly



Safer transport: fewer accidents, fewer road accident victims



More efficiency in rescue operations

study

Environmental research, surveillance of volcanoes, study of earthquakes

manage

Contribution to environmental protection: it will make it possible to locate those who cause pollution, and to monitor the atmosphere and the movement of wild animals in order to preserve their habitats



Better public transport management



Provision of an extremely accurate time clock, for financial transactions



assist

Assistance to farmers in the management of their production



Easier and more reliable prospecting for new natural resources



guide

Help for the blind to find their way



GALILEO will offer everybody everywhere satellite positioning services with guaranteed reliability. Individuals, companies and administrations will all be able to benefit, whether on the road, railways, in the sky or at sea: hikers will be able to find their way, tourists will be able to find the museum or restaurant they are looking for, and taxi drivers will arrive at the right destination. This new global public service has many professional applications.