

Galileo

The European Programme for
Global Navigation Services

Civil Protection



Crisis and emergency situations require a joint, coordinated effort by several teams, sometimes in particularly severe environments. In major disasters like earthquakes, floods, landslides and forest fires, the transport and communications infrastructures are probably unavailable, while roads, power lines and water distribution may be damaged or even destroyed. The basic infrastructure itself often has to be restored before aid can be brought to the victims. Successful relief operations rely on the coordination of real-time information on topography, hazard maps, and alternative sources of power, water and any other urgent need. This coordination would be provided by a relief organisation control centre, based on pre-disaster information, integrated with updates from position data and satellite images. Galileo will be a valuable tool in such situations. Its high reliability, even under difficult conditions, and independence from a substantial ground infrastructure are of paramount importance to the civil protection authorities in managing disasters.

Some examples of practical uses of Galileo

*** Disaster monitoring and prediction**

A major objective of civil protection is to provide better protection for people, the environment and property against disasters. This includes supporting disaster monitoring. Galileo can help to monitor precursor events of some types of disasters, thereby optimising reaction time. For instance, in areas prone to flooding, the water level and dyke movements are usually monitored. Galileo's accuracy, enhanced locally, will improve this monitoring. Earthquake prediction and volcano monitoring will be improved through timely information and warning.

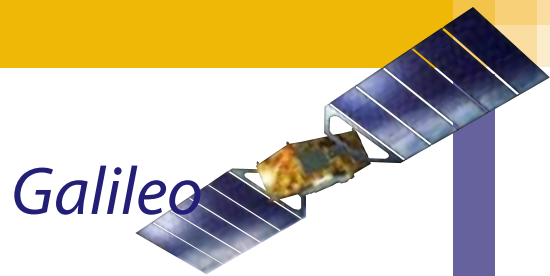
*** Optimising disaster relief operations**

Fire brigades will be supported by Galileo in their fleet management. In urban environments, providing navigation and knowledge of the traffic situation can significantly improve fleet efficiency. Monitoring the positions of the various vehicles involved in relief activities will allow better coordination of operations,

especially when – in large-scale disasters – several different services are in place. Appropriate management of resources and personnel during emergency operations will increase their effectiveness and the safety of rescue teams. Each operator's position could be monitored, and tailored instructions remotely formulated and communicated. The planned extended availability of Galileo in difficult environments – including indoors – makes it suitable for this important application.

Cutting response times is a key factor for maximising success. This is more difficult in major disasters, where real-time resource monitoring is essential, including continuous tracking of resources. Galileo provides the required accuracy and reliability.

Flying helicopters in emergency operations usually involves very specific and accurate flight operation procedures, which require very demanding navigation capabilities. The high accuracy and reliability of Galileo is particularly beneficial, making it an essential element. Helicopter landings in difficult environments, remote areas or on the roof of a hospital could be ably assisted by Galileo, at the same providing information to a coordination centre for optimising the operations.



*** Emergency calls and incident management**

Mobile phones with an integrated Galileo receiver will make it possible to precisely and immediately locate callers who have only a vague idea – or none whatsoever – of their locations. Responses to distress calls can be much quicker. This concept is part of Europe’s development of the E-112 emergency call programme.

Location-based services and communications enhanced by Galileo will play a major role in civil protection operations in all fields. For instance, they can facilitate the work of special coordination teams in charge of incident management. These teams, already introduced in The Netherlands, contain members from the police, fire, ambulance and breakdown services, and are responsible for traffic management at accidents.

The socio-economic benefits of incident management are estimated at about €50 million a year, arising from faster medical assistance and reduced traffic jams. Unambiguous information from Galileo on the location of accident sites together with fast communication links will reduce the reaction time and increase the efficiency of incident management teams.

*** Facilitating humanitarian aid operations**

Every year, armed conflicts and natural disasters affect millions of people. In 2000, the European Union provided €492 million for humanitarian actions, including emergency aid, food and support for refugees and displaced people. Whatever form the aid takes, human resources and supplies need to be mobilised quickly and efficiently to meet the immediate need and prevent further suffering. Action should begin within hours of the sudden onset of a crisis; immediate despatch of assistance is crucial in the early stages. Characterised by complex logistics and often carried out in remote areas with poor local infrastructure, most of these operations could be helped by Galileo. Aid material can be tracked, thus helping recovery if it is stolen or lost. Localisation and management of aid teams can also be assisted.

Galileo Benefits

By integrating Galileo with other technologies, the civil protection community can benefit from:

- a space-based system with global coverage and round-the-clock availability
- reliable positioning, even in difficult environments
- optimisation of rescue operations and resources even when local infrastructures and services may be temporarily unavailable

The use of Galileo technology in this area will undoubtedly contribute to the saving of additional lives.

How is Galileo different from other systems?

- ✓ Galileo is specifically designed for civil and commercial purposes
- ✓ increased accuracy, service guarantees, certification and liability of the service operator
- ✓ traceability of past performance and operation transparency
- ✓ increased availability of signals in demanding environments

Galileo: The European Satellite Navigation Programme is a joint initiative of the European Commission and the European Space Agency. Galileo will offer positioning and timing services worldwide.



For additional information, please contact the Galileo Joint Undertaking: JU@galileo-pgm.org or visit the websites http://www.europa.eu.int/comm/dgs/energy_transport/galileo/ <http://www.esa.int/navigation/galileo/>