EGNOS

GALILEO

FOR MARITIME USE

TRUSTED PRECISION, EXTENSIVE AVAILABILITY

European GNSS Agency

Global maritime traffic is increasing and Europe's ports and inland waterways are becoming ever more congested. This growth requires new solutions to improve efficiency, safety and minimise the impact of maritime traffic on the environment.

Accurate and reliable positioning are key elements for a range of satellite systems capable of streamlining port operations, improving safety and protecting maritime environments. New satellite based systems that can substantially reduce response times in case of an emergency are also being deployed.

Two European programmes, EGNOS and Galileo, serve as the backbone for a wide-range of solutions tailored to **navigation at sea and in inland waterways of commercial and leisure vessels, search and rescue activities, port operations and environmental protection.**

" Be it for fisheries, yachting, passenger or freight, **maritime transport relies on satellite technology.**

By contributing to a safer, more efficient and more sustainable maritime sector, EGNOS and, in the near future, Galileo, are making a real difference. "

How can EGNOS and Galileo make a difference?

Navigation

Satellite-based systems have fundamentally changed maritime navigation. Vessels ranging from small sailing boats to super tankers now have systems on board that rely on satellites for positioning. EGNOS, and soon Galileo, can make navigation more **accurate, reliable** and **available.**

Many systems installed on leisure craft already integrate EGNOS corrections. The resulting precise positioning, especially in tight waters, makes navigation easier and safer. On rivers and other inland waterways, EGNOS already compliments existing ground-based systems.

The deployment of Galileo will further enhance positioning accuracy by adding additional satellites to the currently available constellations.

Search and Rescue

In case of an emergency at sea, **time is of the essence** and **first response is critical.**

Galileo, in combination with other GNSS systems, will make a meaningful difference by offering:

- Faster alert localisation and message detection
- A more precise localisation of the distress beacon
- Higher availability
- Global multi-satellite coverage

Galileo will complement the existing network of satellites tasked to receive and transmit distress signals. This will greatly increase response times, which now can take over an hour as one waits for a satellite to be in line of sight and able to pick up the distress signal. Galileo will also offer a return link confirming the distress signal was received – which has proven to drastically improve the chances of survival.

Port Operations

Many ports are congested and require systems to ensure efficient operations whilst guaranteeing safety. Furthermore, the increase in the size of cargo ships has led to the need for extremely accurate manoeuvring.

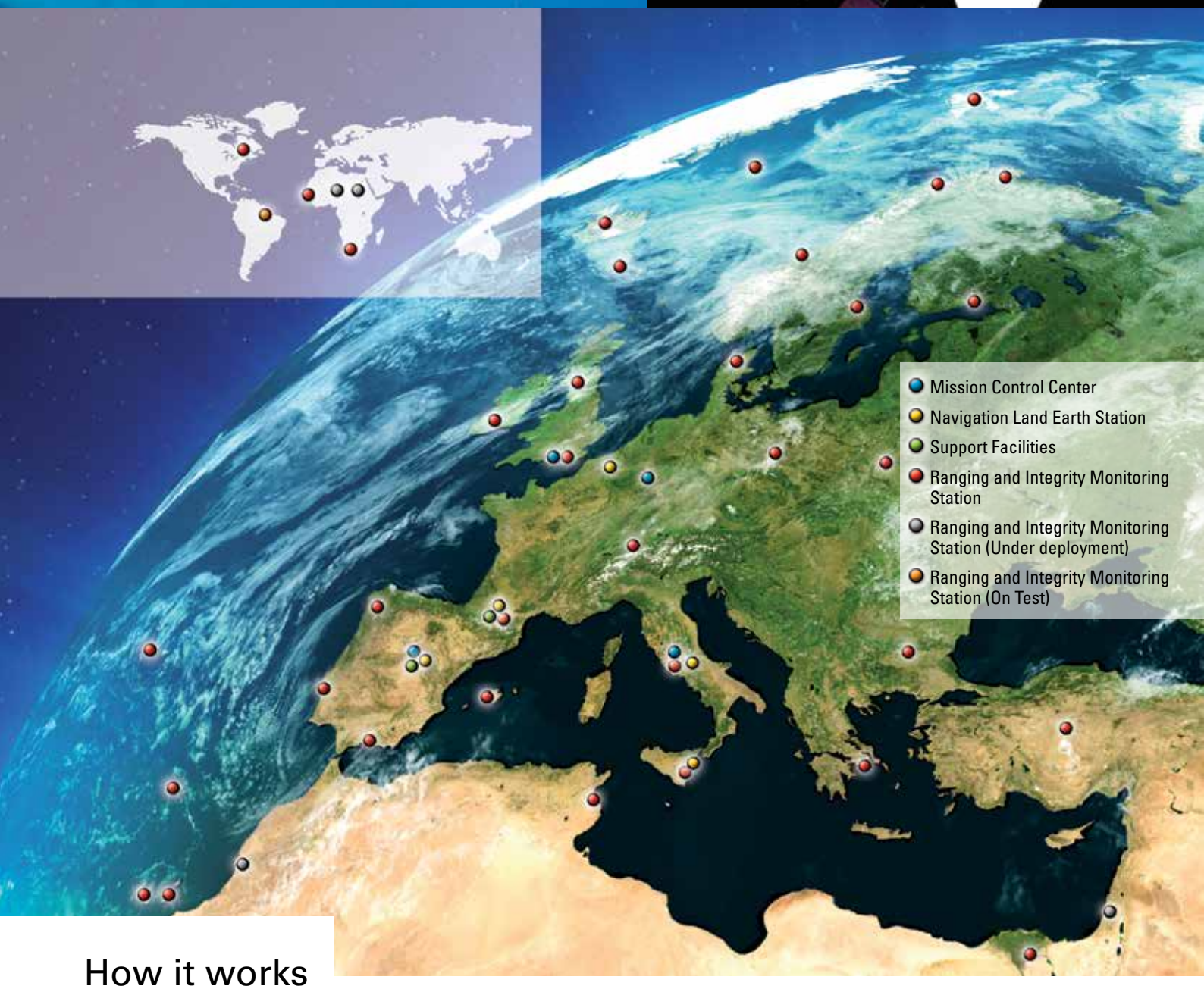
One solution is EGNOS-based portable pilot units that provide increased confidence and accuracy in the vessel's positioning. Accurate positioning enhances the precision of Vessel Traffic Monitoring and Information Systems (VTMIS), which manage vessel movements and increase both efficiency and safety.

Once deployed, Galileo will further improve both availability and accuracy.

Environmental Protections

Maritime environments are often vulnerable and require protection. Galileo is the foundation for a range of new solutions designed to protect delicate marine environments, reduce fuel consumption and enable more efficient enforcement of environmental protection measures.

Improved accuracy can facilitate the development of tools that promote sustainable fishery, and the guaranteed positioning offered by Galileo will enable more efficient enforcement. This guaranteed position can also serve as the basis for systems designed to protect vulnerable maritime areas such as marine parks. More so, research is currently underway to combine accurate positioning and meteorological data that has the potential to turn all vessels into small weather stations.



How it works

EGNOS, the European Geostationary Navigation Overlay Service, is Europe's first concrete venture into satellite navigation. EGNOS uses geostationary satellites and a network of ground stations to increase the accuracy of existing satellite positioning signals while providing a crucial 'integrity message' that informs users in the event of signal problems.

The EGNOS network includes about 40 reference stations in more than 20 countries. These reference stations pick up signals from GPS satellites, which are processed in Master Control Centres (MCC). The accuracy of the original signals is determined and confounding factors, such as electrical disturbances in the atmosphere, are corrected.

This data is then incorporated into EGNOS signals and sent to its three geostationary satellites. The satellites then relay the signals back to users on the ground, thus providing far greater positioning accuracy than would be achieved through GPS alone.

Galileo is the European Satellite-Based Navigation System that will provide a highly accurate, guaranteed global positioning service under civilian control.

EGNOS GALILEO

EGNOS, it's there. Use it.

For more information, please visit:
www.egnos-portal.eu

Precise navigation, powered by Europe

European GNSS Agency