The time has come for Europe to fully exploit the potential of applications based on EGNOS and Galileo, its own global satellite navigation systems!

Unimaginable some 10 years ago, global navigation by satellites (GNSS) today is a common tool for any road user. Countless applications have been developed in many areas of life and far more are yet to come. Europe’s own satellite navigation systems EGNOS and Galileo are the basis for such applications. EGNOS (European Geostationary Navigation Overlay Service) is already up and running and improves the GPS signal across Europe. Galileo’s first two operational satellites will be launched in late 2010. The initial constellation of 18 satellites will be in orbit by 2014. This will open up new and exciting prospects for economic growth. Innovative applications touching everybody’s professional and personal life are expected not only for transport and mobility or agriculture, but in many fields.

An EU push

To foster the development of cutting-edge GNSS applications and user services and devices the European Commission (EC) is drawing up an Action Plan. This includes, in particular, a major new cash injection into research and development, maximising research capacity in 2011, while the EC is also seeking to increase the annual research spend target through the revision of its Seventh Framework Programme for Research and Technological Development (FP7).

Among its other initiatives, the EC will set up a virtual information centre providing stakeholders with a tool to exchange on technical issues. To further ease the development of applications, the Commission will create a GNSS developers’ tool kit. In addition, the EC contributes to yearly awarded prizes by a special Galileo competition for best innovative application ideas or products.

Last but not least, the EC will further promote, towards end-users and decision makers alike, the use of EGNOS and Galileo primarily in the four main priority domains aviation, road transport, maritime and agriculture.

For more information visit: http://www.satellite-navigation.eu/
Europe takes off

With the launch of EGNOS in October 2009, Europe set new standards of precision in satellite navigation. EGNOS consists of three geostationary satellites and 40 ground stations located mainly across Europe. Its open signal is free and improves GPS's accuracy from about ten metres to one or two metres. Galileo is taking shape as its first satellites will be launched in 2010. It will eventually consist of 30 satellites forming three circular orbits at an altitude of 23,000 km covering the entire surface of the earth and will be supported by a global network of ground stations. With Galileo, Europe will have its own independent satellite navigation system conceived for civilian use. Users can then rely on enhanced accuracy and integrity.

Applications everywhere

GNSS in cars was only the beginning. A great variety of GNSS applications can today be found in transport and this is expected to significantly increase. Just to name two, traffic management is improved through GNSS road tolling and real-time travel information is provided directly to the driver to avoid congested areas.

In aviation, EGNOS and Galileo will increase safety en-route and during landings especially at small airports not fully equipped with radio navigation systems. Airports, in general, can benefit from low maintenance costs as the current costly ground radio navigation systems will not be necessary any more.

EGNOS serves in maritime transport, for the time being, to ease navigation in coastal areas, on inland waterways and in ports, e.g. with pilot assistance and automatic docking.

Another main area where EGNOS is already in use is agriculture. Specific applications combining EGNOS with a satellite image analysis help farmers to measure their land with high accuracy. With the exact image of their fields they can reduce the use of chemicals over the cultivated areas and have their tractors or harvesting machines driven automatically. Thus the environment and consumers' health are better respected.

Rich rewards for the European economy

By 2008, sales of GNSS products and services had amounted worldwide to €124 billion, but Europe only enjoyed a 20% portion of this attractive and rapidly growing market. This should increase to at least 33%, such as in other sectors of high technology. Therefore, the right steps are to be taken to maximise development. Estimates indicate that EU companies, users and society can make at least €55 billion benefits from Galileo over the next 20 years. GNSS is a key element in economic activities representing 6-7% of the EU's GDP.

Clearly, the rewards are not limited to corporate turnover alone; plenty of new jobs can be created, most of which would be in small and medium-sized enterprises. The EU is committed to act not to lose this major opportunity to create economic growth in a wide variety of fields through smart new technologies. It will encourage market development so that new applications and services can be developed to improve quality of life in ways not yet thought of.

GNSS in action – precision agriculture

A farmer wants to optimise the fertiliser's spray over his fields. He can either rely on his experience or on very expensive services and systems. Using a satellite image assessment he can define the areas to be sprayed. With an EGNOS enabled navigation device fitted to his tractor it will drive automatically and spray only the identified parts of the fields with the right amount. The farmer can monitor the route of his tractor and record its exact route for future occasions.

GNSS in action – split-second accident intelligence

It is a snowy winter's night and a van overturns on a deserted dual carriageway, knocking its driver unconscious. The vehicle fitted with a GNSS receiver sends its precise location, obtained by satellite positioning, via a communication network to an emergency centre. Because of their speedy reaction, the driver's life can be saved.