

'Galileo All About Ambition and Political Willingness'

Interview with Peter Grogard, Director of Septentrio

Stations capable of receiving GPS, GLONASS and/or Galileo are steadily entering the market, and high above our heads more and more satellites are coming into orbit. All because highly accurate positioning data are essential, and because of the numerous possibilities of three satellite systems. Sceptics wonder if we need a third system, and if Galileo is worth the expenses. Geoinformatics had an interview on these and other topics with Peter Grogard, director of Septentrio, a young and successful Belgian company with a firm belief in Galileo.

By Sonja de Bruijn



Peter Grogard, Founder and Managing Director of Septentrio.

Integration

Now that there will be three systems in 2010/11, the American system GPS, the Russian system Glonass and the European Galileo, integration is the first topic of discussion at the Septentrio office in Leuven, Belgium. Does Grogard think we are moving towards an integration of the systems? "Yes

and no. Clearly there will be combined receivers capable of getting all types of signals, for both professional and private users. Especially this last type of user will not be aware of the fact that combined signals are entering his receiver."

When looking at system level there seems to be integration to the extent that agreements have been reached especially with the US June 2004 on standards regarding interoperability and compatibility. Exception is the GPS military signal which falls under the responsibility of the US government, as well as the European Public Related Service (PRS) which is a European-only aspect of the Galileo program. "We are working on the same kinds of agreements with Russia because these agreements obviously have an impact on trade and technical developments", says the director. Just to make clear: integration of the satellite systems themselves will not take place: these will transmit their own unique signals.

How does Grogard feel about the involvement of China in Galileo? "It is my belief that certain parts of Galileo should not be shared with any non-European country. Furthermore it is my opinion that a third party like China should only get involved if they can actually contribute to Galileo by means of opening up the market, cooperatively developing applications, or bringing in technological expertise. In its turn Galileo can make a robust contribution by covering local components that up till now are not covered in China."

Attitude

The attitude towards Galileo has changed drastically over the past five years. First there was scepticism, not only in the US but also in Europe. 'Galileo will never work', and 'Why do we need this system when there is GPS?' were commonly heard phrases. Furthermore security was a concern: what would be the impact of a new system on military operations? But now that the first satellite is up and running and receivers are being built that can receive Galileo signals

progressed there is more belief. Grognard: "The fact is that more satellites are needed and GPS and Galileo can complement one another perfectly. This is not to say that there is no negative talk about Galileo anymore. One should not forget that GPS has existed for thirty years now, with the first plans appearing in 1960. The experts involved in this are still very influential. However the world is changing, and so are satellite systems."

Glomass

Clearly GPS is quite important with respect to the new satellite system, but what are Grognard's thoughts about the Russian equivalent? "GLONASS is coming into the picture again since the Russian government has got plans to rebuild the system. Every year around Christmas three satellites are launched and there is more and more demand for receivers that can deal with combined signals. When we started Septentrio in the year 2000 we developed a combined GPS-GLONASS receiver with which we were able to receive signals of more than 20 satellites during the time these systems were connected, a phenomenal accuracy

that could never be achieved with just one system. For us this was a clear sign of what Galileo could bring in future."

Grognard admits GPS is more important to him than GLONASS for technical and programmatic reasons. "First of all GPS satellites have an extremely long life cycle, in contrary to the GLONASS satellites. Next to this the US expertise in electronics and in operating the system are reasons for me to regard GPS as a very robust system." However, Russia has a tremendous experience in space system and I am confident that with a little luck, Russia will make GLONASS fully operational again.

Search & Rescue

What extras will Galileo offer in comparison to GPS? "Information on the integrity of the signal will be delivered with the signal so a user knows he can rely on his position. Then there is 'Search & Rescue', which makes an accurate positioning of people in need possible. Instead of having to combine different signals with several receivers all this is now combined. So we are utilizing the strength of GPS and improving what needs to be better." Though prices for these extra Galileo services

are not known yet, these will have to be lower than those of existing providers. Grognard is not really informed on this but does share the opinion that existing service providers offering commercial services should not be put aside. "Besides having a good position in the market they also have the technical know-how so this will make it hard but moreover unwise to push them out of the market."

Negative Advice

Grognard's reaction to the statement 'Galileo means a lot of expenses for an extra system that we don't really need' is fierce. "First let me say that at the end of the nineties several EU member states gave a negative advice regarding Galileo. This was due to bad information provision by their own industries, because of political reasons or due to ignorance. An example is Germany where the automobile industry stated it didn't need Galileo. Although this industry now realizes the importance of the new system, the bad tone had been set. This movement has created the feeling that Galileo is an expensive system that Europe does not really need."



The PolaRx2e, versatile dual-frequency GNSS receiver developed by Septentrio.

“Now let’s have a closer look at the expenses. The total costs of Galileo are € 4 billion. There are 450 billion European citizens at the moment. Projects started in 2002 and Galileo will be operational in 2010/11. This means 8-9 years of development and tests, which boils down to € 1 per year per European citizen. To compare: a European citizen yearly has to pay roughly 100 euros on agriculture. If we want to be the most important economy in the world, we need to take action instead of sitting and waiting for the US and Japan to come up with new innovations. So it is not about costs but about ambition and political willingness.” He continues: “Concerning the costs of the combined receivers: prices may go up a bit, but a manufacturer needs to regularly update its hardware and software anyway. A combined receiver simply is a modernization that has to be done.”

Interference

The advent of Galileo won’t really make a difference in the vulnerability of each separate system. Grognard: “Interference is a potential threat. The signals are weak and quite easy to jam on purpose. However the

system is distributed in such a way that it is impossible to disturb all receivers simultaneously. Still Septentrio and other manufacturers are working on techniques to make receivers less sensitive.”

Especially in aviation (safety reasons) or in segments where GPS is used for the automation of certain processes this is crucial. Higher frequencies are hardly possible because of the insufficient power of the satellites and certain rules laid down in international agreements regarding the frequencies that are allowed. “The solution lies in combining the systems that are transmitting signals at different frequencies and making the receivers less vulnerable”, says Grognard.

Positive Dynamics

According to Grognard Galileo definitely has created a lot of positive momentum and attention. “But we have to make a lot of effort to make use of satellite systems in an economical way like the US and Japan already do. Possibilities are only limited by people’s imagination. And there is a huge growth potential, especially in the automobile industry and the consumer market space. Currently the GPS market is worth

about \$ 12 biljon which is relatively small.” Grognard also mentions quality in agriculture and stricter worldwide regulations in shipping which will cause these markets to grow. “Especially in shipping where mistakes occur quite easily which makes accurate determination of your position important.” Grognard stresses the importance of a proper maintenance of the Galileo satellite system and a simple and transparent institutional framework, similar to the United States framework. Grognard: “Possible bottlenecks can be too many regulations for use and user fees not agreed on by manufacturers in non-European countries that do apply to manufacturers in Europe. This is why a simple and transparent framework like I just mentioned is crucial.”

Sonja de Bruijn (sdebruijn@geoinformatics.com) is editorial manager of GeoInformatics.

Visit www.septentrio.com to learn more about this Belgian company.