



Munich Satellite Navigation Summit 2007 \*Institute of Geodesy and Navigation \*University FAF Munich \*85577 Neubiberg / Germany

## MUNICH SATELLITE NAVIGATION SUMMIT 2007:

### Opening Plenary

Prof. Hein was very pleased to welcome more than 400 participants from 28 countries to the Munich Satellite Navigation Summit (MSNS) Opening Plenary in a new location within the "Residenz München": The Allerheiligen Hofkirche.

"We are living in very exciting times." Prof Hein describes the current situation. Galileo has its first test satellite (GIOVE-A) in orbit, GIOVE-B should be launched soon. It seems that the financial problems that Galileo went through in the past years will be solved. Meanwhile, the GPS modernization is being continued and Russia goes on to set up the full operational worldwide constellation again. An increasing number of nations is building up its own navigation system:

India has also recently announced its intentions of developing a regional augmentation, known as IRNSS.

China is building up NIGCOMSAT for Nigeria which is considered to be the first step towards the fourth global navigation system: Compass.

The world of navigation is getting more and more complex and it's time to talk about a GNSS of GNSS. Professor Hein is looking forward to fruitful discussions during next two days.

Erwin Huber, the Bavarian Minister of Economic Affairs, Infrastructure, Transport and Technology gave his welcome address to the participants of the Summit. He mentioned that the MSNS has already become a traditional event for the satellite navigation community. He pointed out that the global changes yield a lot of opportunities: "Countries that were underdeveloped yesterday are today the

strong competitors of tomorrow. We do not have to complain about it. We have to act. We have to see the global changes as an opportunity and not as a threat." Europe's future is to be a centre of innovation, of new products and services. In order to achieve the objectives, cooperation is necessary. As clearly stated by Huber "This is my appeal to all people responsible, use this meeting to make progress together." Generally, satellite navigation and Galileo are already good examples for this way of cooperation. He emphasised that any further delay has to be avoided and that the negotiation with respect to the GSA has to come to an end.



Hein, Pedreira, Huber, Ruete, Braibanti and Viriglio (left to right)

Huber focused also on the applications of satellite navigation: "Transport, water and air are fields of great opportunities for satellite navigation. Only, if we make the right steps today we will be ready to face the challenges of tomorrow." New opportunities are given to SME in order to solve very specific problems in deep interaction with potential users of satellite navigation.

Huber invited to participate in the framework of the Galileo Masters, looking for innovative

[info@munich-satellite-navigation-summit.org](mailto:info@munich-satellite-navigation-summit.org)  
[www.munich-satellite-navigation-summit.org](http://www.munich-satellite-navigation-summit.org)

\*Communication: \*Munich Satellite Navigation Summit 2007 \*Institute of Geodesy and Navigation \*University FAF Munich \*D-85577 Neubiberg \*Chairman: Univ.-Prof. Dr.-Ing. G. Hein \*Phone: +49-(0)89 - 6004 - 3425 \*Fax: +49-(0)89 - 6004 - 3019 \*Invoicing Party: Gesellschaft zur Förderung der Weiterbildung an der Universität der Bundeswehr München e.V. \*Werner-Heisenberg-Weg 39 \*85579 Neubiberg \*Bankaccount: gfw Gesellschaft für Weiterbildung - "munich summit", Deutsche Bank Ottobrunn \*Bankcode: 700 700 24 \*Account No. 4745717 \*BIC: DEUTDE33 \*IBAN: DE39700700240474571700

applications in the field of satellite navigation. He mentioned especially the Galileo test and development environment (GATE) in the Bavarian mountains and invited the satellite navigation community to make use of this sophisticated test area which will be validated in May 2007. More than 160 institutions are already expected to take advantage of the GATE platform. Good news from Germany is that the operation centre of Galileo in Oberpfaffenhofen will be finished on time. The objective of Bavarian politics is to link industry and science even closer than before, of course under participation of foreign partners.

Finally, Huber was thanking Prof. Hein for his hard work and contribution to the fact that Munich and Bavaria play a vital role in satellite navigation.



Participants of the Munich Satellite Navigation Summit

Ralph Braibanti, Director of Space and Advanced Technology from the U.S. State Department attended the Munich Satellite Navigation Summit for the first time.

He stated that there is rapid expansion of GNSS use, especially in civil applications. Until 2020 he expects six satellite navigation systems available.

Braibanti who was in charge of the EU-US negotiations on interoperability, emphasised the significance of interoperability. He briefly reviewed the issues of international cooperation comprising the first EU-US discussions

held in 1997. The efforts of these discussions have first success now. Although GNSS and augmentation systems are independently owned and operated, they are designed in a way allowing interoperable use.

The EU-US agreement signed in 2004 has just been a starting point for continuing discussions. There are also cooperation efforts with Japan, Russia and India. In his opinion all these issues could be handled under the International Committee on GNSS (ICG) globally. Main focus of the ICG is to address providers' and users' concerns with respect to the challenges of the emerging number of GNSS. These challenges can be summarised by two key aspects. At first the interference between systems has to be minimised in order to benefit from the full capability of each individual system. Secondly, the interoperability has to be maximised in order to enable clear receiver architectures and to generate high acceptance in the manufacturer's community.

Finally, Braibanti strengthened that China needs to go the same paths of consultations as other parties have done it in the past years. Only then a real interoperable world will be insured.

The next speaker was a representative of the European Commission, Matthias Ruete, Director General, Energy and Transport. He said that the European Union has become a global player in satellite navigation and mentioned that "Munich has become a very particular rendezvous in the world of satellite navigation. Munich is one of the places to be for any experts in the world of navigation."

Ruete reviewed the eight-year history and development processes of the decision to launch a European satellite navigation system. Regarding the last year he pointed out the significance to establish the GSA which is now in charge of the negotiations with the concessionaire. Further negotiations with third countries have also been undertaken.

The 7<sup>th</sup> framework program of the EU encompasses potential applications of Galileo

and its possible funding. On March, 22<sup>nd</sup> the EU ministers of transport are going to meet and discuss new ways of interaction and co-operation. He called it a “victim of success” that there are several different GNSS in operation and development. They have to be organised in terms of interferences and serving a global user community in an optimal way.

The negotiations with the concessionaire are in a critical phase, they are much more complicated than anticipated. He mentioned financial, technical and risk issues as the main reasons for the current delay. However, he confirmed that political patience is exhausted and deadlines will be set to solve these problems. He stressed that “Galileo has already seen crisis in the past and the way forward has always been found. We need this crisis to find the way to move forward.” In his opinion Galileo should be carried out as a public private partnership (PPP) as it was consensus of the EU member states. A fundamental discussion on the PPP will probably cause an even larger delay. Matthias Ruete does not support the installation of a coordinator for the negotiations between GSA and the concessionaire.

The Executive Director of the GNSS Supervisory Authority, Pedro Pedreira, started with a brief introduction of the GSA in which the member states and the commission are represented. The GSA was established in June 2006 and took over business from the GJU. The main task was and will be the coordination of the different Galileo activities, like the concession contract, IOV and the integration of EGNOS into the concession contract. EGNOS should be qualified for full service in 2008, thus becoming the first operational European GNSS system, providing regional augmentation to safety-of-life applications. With respect to the 7<sup>th</sup> framework programme Pedreira stated that GSA tries hard to get proposals for future applications of GNSS. He mentioned that the negotiations with the Galileo concessionaire have absolute priority.

Despite the current stagnation of the Galileo concession contract Pedreira said that “the GSA will continue to strive for an arrangement with the merged consortium”, as Galileo is important for the European economy. He is “very confident that if the will is strong enough” we will be able to move forward and learn from the past.”



The members of the Opening Plenary Panel

The last speaker of the Opening Plenary Panel, Giuseppe Viriglio, Director of Telecommunication and Navigation, ESA, started his presentation with the development on EGNOS. There will be the need for an operator when it is finally finished.

After the launch of GIOVE-A in December 2005 GIOVE-B is expected to be launched by the end of this year. The delay of GIOVE-B is caused by necessary technical modifications. Nevertheless, he pointed out that there is no urgent need for the launch of the second GIOVE since GIOVE-A is working successfully.

He presented a visualization of the locations of the ground stations for the Galileo In-Orbit-Validation (IOV) phase, which are selected in order to get knowledge on important effects like the influence of the ionosphere and to provide precise ephemerides to users. Viriglio closed with an overview of technical issues to be solved in the forthcoming months.