



MUNICH SATELLITE NAVIGATION SUMMIT 2008

Session 8:

Chairman: Hank Skalski

Michael Shaw, Director of the U.S. National Coordination Office for Space-Based Positioning, Navigation and Timing (PNT) has given today a short overview of the prospects of GPS and the importance of progress through partnership in satellite navigation. As Mr. Shaw clearly indicated, positive results of a decade of joint bilateral and multilateral diplomatic efforts are emerging already today. In his presentation, he underlined the importance of cooperation for the good of all navigation systems existing today or planned in the future. After quickly informing on the recent GPS activities and the next planned launch of March 2008, Mr. Shaw stressed the desire of GPS in continuing to improve its global service and modernization plans. Again the interoperability with other GNSS systems and the developments of GPS III played an important role. After that, the presentation concentrated on the GPS-Galileo cooperation highlighting the recent achievement of the improved new civil signal (MBOC) adopted in Jul 2007. Furthermore, the different activities on international cooperation where the USA is participating in the framework of the International Committee on GNSS (ICG) were equally summarized. To conclude and given the importance that the newly created provider's forum of the ICG has played in the past months, a short overview of its activities was also provided, underlining the potential synergies and benefits that can result from international cooperation.

J. Van Dierendonck, Director of AJ Systems and US ION Satellite Division Chair gave a brief overview on his own thoughts on the benefits, challenges and the future of satellite navigation in aviation from the perspective of the combined use of GPS and Galileo. Different aspects have been covered in his presentation, from the benefits of combining GPS and Galileo in aviation equipment, to GPS/Galileo interoperability for aviation equipment, passing through GNSS integrity also for aviation to the GNSS Evolutionary Architecture Study (GEAS). Dr. Van Dierendonck mainly underlined the

different view of aviation of interoperability. Among many other topics of interest, the wide bandwidth issue, the concept of worldwide integrity, with special focus on aviation, potential integrity channels and different RAIM concepts were also covered in his presentation, underlining the potential effect that the combined use of different GNSS could provide.



Shaw, Dierendonck, Skalski, Neilan, Turetsky (left to right)

Ruth E. Neilan, from the International GNSS Service (IGS) Central Bureau and Jet Propulsion Laboratory/California Institute of Technology presented her views on GPS and Galileo "from across the Atlantic". Her perspective basically relies on the belief that the synergies resulting from the cooperation between GPS and Galileo in particular or between any two systems in general may lead to benefits for everyone. As she clearly stated, early lessons with GPS have shown that in-depth GPS/GNSS studies in any region require a global infrastructure. She criticized that too often science is "continent" blind without referring to any continent in particular. This reinforces the need of the International GNSS Service (IGS) Mission in service to society all over the world. The International GNSS Service (IGS, formerly the International GPS Service) is a voluntary federation of more than 200 worldwide agencies that pool resources and permanent GNSS station data to generate precise GNSS products. Currently the IGS supports two GNSS: GPS and the Russian GLONASS. It provides the highest-quality GNSS data, products, and services in support of the Earth observations and research,



positioning, navigation and timing, the terrestrial reference frame, Earth rotation, and other applications that benefit society. To conclude Mrs. Neilan underlined the use of the IGS as useful means from which society can and should benefit changing our planet positively. As a proof of further cooperation, she mentioned the International Committee on GNSS.



Documentation Team and Michael Shaw

involving the receiver community. To conclude, Mr. Turetzky emphasized the need of Galileo to translate its "mindshare" lead of GNSS into actuality by improving the communication with the users and making the marketing plans based on predictability

Greg Turetzky, Director of Marketing of SiRF, gave the audience his views on consumer product landscape. According to SiRF, the GNSS market can be divided into 4 segments: namely wireless, PND, automotive and consumer. In his view, the shipment volumes are dominated today by PND devices, being GPS the de-facto location standard today. In addition, Mr. Turetzky mentioned the importance of the growth of the navigation market as a means of improving the experience in the sector. Indeed, consumers only care about what they can see on the screen, and not what is inside the device, as he graphically explained. According to his presentation, the performance for automotive and PND applications is nearly sufficient already today. On the other hand, the performance for wireless and consumer still needs improvement and the market should further grow. In his opinion, GPS should be used as an anchor given the great success that this has experienced in the past. GNSS in general has already provided clear improvements and from the point of Mr. Turetzky, Galileo has done a good job marketing the need for a second satellite system. Nevertheless, Galileo still needs to ensure that it is the best second choice competing against GLONASS and Compass and beating the GLONASS schedule. From his point of view, it would also be desirable that Galileo would stay ahead of Compass by publishing ICDs and



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