

Munich Satellite Navigation Summit
8-10 March 2005
Munich, Germany

This was the 4th in the series of Munich SatNav Summits organised by the Institute of Geodesy & Navigation, Federal Armed Forces University. The convenor of the summits is Prof. Günter Hein.



This conference was not a technical GNSS symposium organised in the standard way. Rather the conference was intended to provide mainly information on the status and policies of Galileo (although information on other GNSS & augmentation systems was also provided). The speakers were drawn mainly from industry and government agencies, with few academics attending. Hence the conference was an excellent opportunity for participants to mix and network with each other. The maximum number of conference participants was approximately 350 (constrained by the size of the venue, in Der Residenz – the Munich city palace).

Australia was represented by the following: Chris Rizos (AGCC, UNSW), Keith McPherson (AGCC, AirServices Australia), Matt Higgins (DNRME, FIG) and Werner Enderle (QUT, CRCSS).

Each session consisted of invited speakers that were part of a “panel”. The panel chairman moderated the session. The speakers made their presentations, and questions were asked of the panelist by the chairman and by the audience. Details of the program, with session summaries and presentations, can be found at <http://www.munich-satellite-navigation-summit.org/Documentation.htm>. Both Keith McPherson and I were invited to be presenters at this conference. Keith made a presentation on GRAS, a GNSS ground-based augmentation system for aviation users (see “GRAS Developments”). My presentation was in the Panel “Galileo & Friends”, and I spoke as a member of the Australian GNSS Coordination Committee (AGCC), asked to give an overview of GNSS activity in Australia and Australia’s “attitude to or interest in” Galileo.

There is no doubt that the Europeans are a little bewildered as to Australia's apparent lack of interest in Galileo (at least at the governmental level). We were continually asked why this was so. Fortunately there appears to have been some recent progress towards an engagement by Australia with the European Commission (EC) at the federal level (see "Australia's Position"). There is also some interest at state and industry level.

The most important news at the conference was that the Concessionnaire, the organisation that will be responsible for operating Galileo, had not yet been selected. There are two consortia, and various reasons were given for the delay in selecting the successful contender. It appears that the decision will be made by mid-year (although that date may slip), and the final Concessionnaire may well be a consortium that includes organisations from BOTH the current contenders. Once that is settled then we can expect to see vigorous activity to "sign up" partners that will help run the Commercial Service in regions and local areas.

Galileo will offer five services, but it is the Commercial Service (CS) (and to a lesser extent the Safety of Life service) that will require the engagement of non-European partners, including Australia. Given the strong feeling that the Aviation community will only support services that are endorsed by The International Civil Aviation Organisation (ICAO), it seems that only the CS will be of interest to Australia in the short term. (There was some, in my opinion, muddled panel discussions on the Public Regulated Service, but that is still a "hot potato".) The CS will require CORS networks, hence it is certainly feasible that an Australian state or national agency, or a private company, could become interested in partnering with Galileo. Although it is not necessary that Australia sign a Memorandum of Understanding with the EC or the Galileo Joint Undertaking (GJU) in order to have a commercial interest in Galileo, it would certainly make negotiations easier if Australia were seen to be a "friend" of Galileo. (Currently we are perceived as being too closely aligned with the U.S. and GPS to make an unbiased assessment of the merits of Galileo.)

Several countries have "signed up" to Galileo, and will invest varying amounts of cash and in-kind. The largest non-European investor is China, but mention was also made of India, Israel, and Korea. (It seems the minimum buy-in is of the order of \$5M Euros – something that even Australian investors could raise!) It will be interesting to see how things will develop by the time of the 2006 Munich Satellite Navigation Summit. Will Australia have an MoU with the GJU? What commercial interest would there be to provide services in Australia, and by whom? Will we be considered to be "friends" of Galileo?

For information on Galileo, seek out the following web sites:

http://europa.eu.int/comm/dgs/energy_transport/galileo/index_en.htm

<http://www.galileoju.com/>

<http://www.esa.int/export/esaNA/galileo.html>

GRAS Developments

AirServices Australia has been developing over many years an innovative augmentation system (to improve accuracy and integrity, though not availability) for aviation users that combines the best of SBAS (Space-Based Augmentation System) and GBAS (Ground-Based Augmentation System). This is known as the Ground-based Regional Augmentation System (GRAS). Keith McPherson's presentation gave an update on GRAS. (See also http://www.airservicesaustralia.com/pilotcentre/projects/gnss/gnss_gras_ion2000_paper.pdf.) ICAO has recently adopted GRAS as another augmentation system (on par with SBAS,

GBAS, etc.). Australia is in the process of developing a plan to implement GRAS both in Australia and up to 35 other countries! The decision as to who will be the Prime Contractor for GRAS in Australia will be made known by mid-April. As GRAS will have the requirement for a nationwide CORS network similar to a SBAS such as the Wide Area Augmentation System (WAAS), the implication is that the company selected to manage the GRAS infrastructure will operate the largest CORS network in Australia. The challenge is to negotiate access to these GPS (and subsequently Galileo) data streams for the benefit of all high accuracy users in Australia.

Australia's Position

For some time the AGCC has been trying to facilitate the development of an "official position" by the Australian federal government as far as Galileo is concerned. The preferred outcome is a MoU between Australia (which agency is not clear, perhaps the Dept. of Foreign Affairs & Trade) and the GJU or EC. (A draft MoU was sent to Australia over a year ago.) The current situation is that an Inter-Departmental Committee (IDC) was formed late in 2004 and has met several times. At its last meeting on 15 February 2005, the chairman of the AGCC Don Sinnott* was invited to give a briefing. On the basis of what transpired at that meeting, Don was able to provide me with the following statement that I could share with others at the conference:

"The IDC has been considering the role of the Australian Government in connection with the Galileo program and recognises the benefits to Australia that will flow from having another provider of independent positioning, location and timing services when Galileo becomes operational. It sees the further development of GNSS as an enabling and underpinning technology for value-added services important to Australia in a very positive light. While it sees a number of issues to be resolved it recognises that major benefits will flow to Australia through access to Galileo services. The IDC will promote a response to the EC initiative of providing a draft skeleton MoU as a vehicle for an Australian relationship with the EC on Galileo. Action on this response is expected to proceed through diplomatic processes. This is aimed at paving the way for further discussions between Australian and EC officials. The IDC encourages cooperation between Australian and EU industry targeting Australia's projected use of Galileo."

It is anticipated that one of the actions will be to invite representatives of the GJU to Australia in mid-2005.

* Don Sinnott's briefing notes to the IDC can be found at:
http://www.gmat.unsw.edu.au/snap/new/pdf/agcc_sinnot02-05.pdf

Chris Rizos
20 March 1005