



Pressinformation

20. Juni 2007

Institute members investigate the capability of receiving Galileo signals behind closed doors

Satellite navigation is still waiting for its breakthrough with respect to indoor application. Recently, receivers have become sufficiently sensitive for indoor signal tracking. However, due to multipath fading and other signal propagation phenomena the quality of the position solution is still leaving a lot to be desired. In order to understand indoor signal propagation in a better way, the Institute of Geodesy and Navigation intends to develop statistical propagation models that is part of the joint INDOOR research project funded by the German Aerospace Centre (DLR).

The Institute of Geodesy and Navigation has signed contracts with two companies possessing sophisticated hardware equipment in order to collect the necessary data for the models. The backbone of the investigation is the gathering of channel impulse responses from a so-called channel sounder. After pre-processing the raw data, one can derive a probable number of reflected signals and their power, both dependent on the location of the transmitting and receiving antenna. Some more efforts were spent in order to get information on the main directions of the signals.

The tests were being carried out at a residential building at the town of Bischofswiesen. This place was selected due to its location within the Galileo Test Environment (GATE) being established all



Equipment for the collection of Galileo signal spectra (Galileo antenna and spectrum analyser)

around Berchtesgaden in the Bavarian Alps. Thus, it is possible to verify the models by true Galileo signals without waiting for the spatial satellite constellation to be ready.

Furthermore, signal spectra of the true Galileo signal were being recorded after they had penetrated the walls. For a maximal geometrical flexibility a helicopter carrying a Galileo signal generator and a transmitting antenna was deployed additionally.

At first glance, the mission can already be considered as entire processing of the gigabytes of data will take time and to the researchers.



Installation of the Galileo transmit antenna at the left skid of the helicopter



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