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Editorial
Future GNSS Signals

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This special issue of the International Journal of Navigation and Observation deals with future global navigation satellite system (GNSS) signals. It is a timely issue in view of the current US GPS modernization efforts, the deployment of the EU's Galileo, the replenishment of Russia's GLONASS, and China's plan to launch COMPASS. These systems, either individually or as a group, will provide tremendous availability, accuracy, and reliability enhancements to a consumer's market that is growing at an annual double-digit rate. Research is taking place not only to enhance the methods and algorithms to process the signals already in place but also to propose and optimize future signals and combinations thereof.

The seven papers presented in this issue cover a variety of topics, ranging from Galileo signal testing to signal multipath reduction, and represent a good cross-section of current activities in this area. A study of multipath performance of the initial Galileo signals transmitted by the GIOVE-A satellite using actual data is described by Simsky et al., and a new generic approach called multiple gate delay tracking structures to reduce GNSS signal multipath is proposed and evaluated with different software approaches by Heikki Hurskainen et al. Also, Borio et al. discuss two strategies for the joint acquisition of data and pilot channels that are available on emerging signals. Shanmugam et al. present a short synchronization code design for future GNSS based on the optimization of specific performance criteria. Joint L/C-band code and carrier phase linear combination methods for Galileo are discussed by Henkel et al. Moreover, Lentmaier et al. discuss Bayesian time delay estimation based on particle filters for use in dynamic multipath environments. Finally, a comparison between Galileo CBOC candidates and BOC(1,1) signals in terms of detection performance is presented by Dovis et al.

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International Journal of Navigation and Observation

Special Issue on

Selected Papers from Workshop on Synergies in Communications and Localization (SyCoLo 2009)

Call for Papers

In conjunction with the IEEE International Conference on Communications (ICC) 2009 in Dresden, Germany, the International Workshop on Synergies in Communications and Localization (SyCoLo 2009) will be held.

The main objective of this workshop is to show how wireless communications and navigation/localization techniques can benefit from each other. With respect to these synergies the workshop aims at the following fundamental questions:

- How can navigation systems benefit from existing communications systems?
- How can communication systems benefit from positioning information of mobile terminals?

This workshop, whose proposal was jointly generated by the EU Research Projects WHERE and NEWCOM++, aims at inspiring the development of new position-aware procedures to enhance the efficiency of communication networks, and of new positioning algorithms based both on (outdoor or indoor) wireless communications and on satellite navigation systems.

The SyCoLo 2009 is, therefore, well in agreement with the new IJNO journal aims at promoting and diffusing the aims of joint communications and navigation among universities, research institutions, and industries.

This proposed IJNO Special Issue focuses all the research themes related to the timing aspects of joint communications and navigation, and starts from the SyCoLo 2009 where the Guest Editors will attend the different sessions and directly invite the authors of the most promising papers to submit an extended version of their papers to the journal.

The proposed Guest Editors are also part of the Scientific Committees of the SyCoLo 2009, therefore, directly involved in the evaluation of submitted papers.

Topics of interest will include, but are not limited to:

- Hybrid positioning using both wireless communications and satellite navigation systems
- Resource management with positioning information
- Location-aware PHY/MAC algorithms/procedures
- Indoor positioning combined with short-range communications
- Signal processing techniques for (seamless) indoor/outdoor localization

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Manuscript Due	October 1, 2009
First Round of Reviews	January 1, 2010
Publication Date	April 1, 2010

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