

**Institut für Signalverarbeitung
und Sprachkommunikation (4420)**

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DVR: 008 1833 UID: ATU 574 77 929

Invitation for a Guest Lecture

Dear colleagues,

I'd like to cordially invite you for a guest lecture by

Prof. Henk Wymeersch
Department of Electrical Engineering
Chalmers University of Technology
Gothenburg, Sweden

”On the convergence of radar, positioning, and communications”

Wednesday, March 20, 2019 at 14.00 hrs
Seminar Room ID02104, Inffeldgasse 16c/second floor

Please feel free to forward this invitation to colleagues and friends.

Looking forward to seeing you there,

Klaus Witrisal

On the convergence of radar, positioning, and communications

Prof. Henk Wymeersch

Abstract: Positioning of devices using radio-frequency signals has been realized in a variety of dedicated systems, including LORAN-C and GPS for outdoor positioning, as well as ultra-wide band and WiFi for indoor positioning. A cheaper solution is offered through cellular radio signals, but suffer from low accuracy. Consequently, their main application has been limited to the (mandatory) localization of emergency calls. Thanks to the technological components of 5G (i.e., the use of large carrier frequencies, large bandwidths, large antenna arrays, network densification, and device-to-device communication) 5G systems can be the first generation offering high-accuracy localization, together with high coverage while maintaining low cost. This talk will describe the main benefits of 5G from a positioning perspective, and show it can lead to radically new designs for localization and map building. In a sense, 5G will behave very much like radar, beckoning the question “will radar behave like 5G” and “will 5G be used for radar”? To this end will address the question of how radar could be used as a communication technology and highlight several challenges.

Biography: Henk Wymeersch is a Professor in Communication Systems with the Department of Electrical Engineering at Chalmers University of Technology, Sweden. He is also affiliated with the FORCE research center on fiber-optic communication. Prior to joining Chalmers, he was a Postdoctoral Associate during 2006-2009 with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. Henk Wymeersch obtained the Ph.D. degree in Electrical Engineering/Applied sciences in 2005 from Ghent University, Belgium. He served as Associate Editor for IEEE Transactions on Communications (2016-2018), IEEE Transactions on Wireless Communications (2013-present), and IEEE Communication Letters (2009-2013). He served as Guest Editor for several special issues on radio localization and as General Chair of the 2015 International Conference on Localization and GNSS. His research interests include cooperative networks, radio-based localization and mapping, and intelligent transportation.