



RICKARD NILSSON

From Sweden to France



Project: **Space communications, signal processing, software radio and new 5G waveforms**

Research topic: **Engineering**

Swedish Institution: **Luleå University of Technology**

French Institution: **Eurecom**

Dates of mobility: **22/04/2017 to 30/04/2017**

Program: **SFVE-A (ex-FRÖ)**



PRESENTATION

[Rickard Nilsson](#) is an Associate Professor in [Signal Processing](#) at the [Signals and Systems Division](#) under the [Department of Computer Science, Electrical and Space Engineering](#) at Luleå University of Technology ([LTU](#)). He obtained his PhD in Signal Processing from LTU in 2001. With [Telia Research AB](#), Sweden, and [Stanford University](#), USA, he developed and researched a new broadband access technology for very-high bit rate digital subscriber lines (VDSL) and contributed to its international standardization. He also conducts research in the area of satellite and space communications, signal processing, software radio and 5G wireless duplexing and out-of-band emission mitigation.

ACTIVITIES IN FRANCE

During his mobility to the Graduate School and Research Center in Digital Science [Eurecom](#), Rickard Nilsson had the opportunity to exchange views with [Asst. Prof. Laura Cottatellucci](#), [Assc. Prof. Petros Elia](#), Prof. and Head of the [Communication Systems Department](#) [David Gesbert](#), [Prof. Dirk Slock](#), [Asst. Prof. Florian Kaltenberger](#), [Umer Salim](#) (Responsible for the project “5G Waveforms for Machine Type Communications and Ultra Long-Range Communications”) and two post-Master students, [Mohit Vyas](#) and [Salil Sharma](#), working on the same project. Cottatellucci and Nilsson discussed the possibilities of submitting a joint research proposal, solutions for telecommunications in rural areas based on satellite systems and massive MIMO systems, and the design of a physical and data link for Internet of Things. With Elias, he discussed the topic of caching. Gesbert and Nilsson recognized the need to establish closer relations between LTU and Eurecom. He discussed Cognitive Satellite Communications with Dirk Slock. He talked about new waveforms for 5G and Orthogonal Time Frequency Space with Umer Salim, who also introduced [TCL](#) and his post-Master co-workers, and floated an interest for joint projects between LTU, Eurecom and TCL. Furthermore, he discussed the Eurecom [OpenAirInterface 5G Laboratory](#) and software-defined radios with Kaltenberger.