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SEMINAR

Innovative Radio Systems and Antennas for Space Telecommunication Applications

Speaker: **Dr. Hervé Legay**
(Thales Alenia Space, France)

Date: 14 December 2016 @ 11:00 AM

Location: Room Ofek – Polo Scientifico F. Ferrari – Povo

Note: The seminar will be held in English

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We stand at the dawn of a new era for the space telecommunication ecosystem, marked by a consistent exponential growth in throughput as well as the irruption of new systems based on constellation of satellites. For these challenges, new models for disruptive innovation are imagined for the future generation of payloads :

- Developing new antennas and RF subsystems concepts inspired by optics, or based on metamaterials (composite media with an internal periodic structure that provides specific characteristics such as filtering, phase-shifting, absorbing, …).
- Integrating of smart and agile RF systems with signal processing capability that exploit mechanically actuated RF components, smart RF surfaces as well as innovative deployment schemes.
- Introducing into space cost efficient manufacturing techniques, based on additive and subtractive processes, metallised plastics, thin organic large area electronics, … .

Recent achievements in these innovative concepts developed at Thales Alenia Space will be presented, identifying their perspectives and their limitations.

- **About the Speaker**

Hervé Legay was born in 1965. He received the electrical engineering and Ph.D. degrees from the National Institute of Applied Sciences (INSA), Rennes, France, in 1988 and 1991, respectively. For two years, he was a Postdoctoral Fellow with the University of Manitoba, Winnipeg, MB, Canada, where he developed innovating planar antennas. He joined Alcatel Space, Toulouse, France, in 1994, which is now Thales Alenia Space. He initially conducted studies in the areas of telecommunication satellite antennas and antenna processing. He designed the architecture and the antijamming process of the Syracuse 3 active antenna. He is the author of 27 patents. He is currently responsible for the R&T studies on space antennas, director of the joint laboratory MERLIN involving Thales Alenia Space and IETR (Institut d'electronique et de Télécommunication de Rennes). He coordinates the collaborations with academic and research partners. He was appointed Antenna Expert in Thales. Dr. Legay is a co-prize-winner of the 2007 Schelkunoff prize paper award. He received the Gold Thales Awards in 2008, a reward for the best innovations in the group Thales.