



KOLLOQUIUM

Institut für Elektrotechnik, Elektronik und Informationstechnik

RF-MEMS based circuits for future microwave communication and radar systems in aeronautic platforms

Dr. Volker Ziegler
EADS, Corporate Research

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Diskussionsleitung: Prof. Dr.-Ing. G. Fischer

Two main drivers for microwave components with advanced or even new functionalities in the aeronautic and space domain are nowadays geometrically thin antenna architectures and multi-band communication and radar systems. The aforementioned ones are becoming a necessity on manned and unmanned airplanes to replace bulky dish antennas for communication links or to enable new functionalities like side-looking radars. The multi-band architectures of communication systems or radars replace more and more several individual systems by one integrated approach and inherit therefore the need for reconfigurable subsystems and components for multi-use. Some of these challenges could be met on the device level by using conventional technologies like diodes and field-effect-transistors. But, if the focus of the application is on very high RF-performance, low-cost and /or multi-functionality, RF-MEMS based devices and circuits can offer superior properties.

Within this presentation, some next-generation aeronautical communication and radar systems are presented with some of their key challenges on the device level and proper solutions using RF-MEMS based technologies are discussed. The EADS Innovation Works in-house RF-MEMS devices will be shown in detail from the processing to the circuit design and characterization. Finally, reliability issues under real operational conditions (e.g. elevated temperature or high power handling) will sum up the talk.