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Short Communication

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Emerging Trends in Communication Satellites & Related Test Solutions

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Abstract:

With an increasing demand on high data rates, capacities and wireless connectivity requirements in both personal and business/enterprise level (for mobile/wireless communications/connectivity) in almost all geographic regions and industrial sectors, the wireless communication landscape in general is undergoing a major transition. Aiming at an interoperable and unified solution to all these demands in a long run, transitions at both the technology as well as the infrastructure and service levels are expected. 5G and IoT are some of the major industry initiatives in these directions. To support this transition as an important complement, traditional communication satellites are also going through major technology level changes across their GEO (geostationary earth orbit) and NGSO (non-geostationary orbits) launches. In this presentation, a look into communication satellites that form a major subset of the global operational satellites, related emerging industry trends, technology drivers and Rohde & Schwarz test solutions addressing them will be summarized. As major emerging trends, high throughput systems (HTS) to very high throughput systems (VHTS), large-scale NGSO satellite constellations are considered. Among the technology drivers, topics such as phased array systems and their potential advantages across the satellite industry eco-system will be covered. To address these trends and technology level test challenges from component, assembly level testing to payload subsystem and satellite manufacturer level testing, a wide range of test solutions from Rohde & Schwarz will be presented. System level tools such as satellite link planner, satellite communication system interference monitoring/detection and state-of-the-art Ku-band uplink solutions will also be covered.

Biography:

Viswanathan Subramanian completed his PhD Degree in High Frequency Engineering in 2009 in Berlin, Germany He has authored or co-authored more than 50 technical papers in peer reviewed conferences, journals and also holds an international patent. He has been an official Reviewer for the journals "IEEE Microwave and Wireless Components Letters" and IEEE Transactions on Circuits and Systems". Since 2012, he is working at Rohde & Schwarz, Munich in various positions focusing diverse test solutions for aerospace and Defense and high frequency applications. His research interests are in design, testing and characterization of systems to mm-Waves and above.