



The 14th European Radar Conference

Duration: 08:30 - 12:30

Room: Oslo

WF-04

Active Electronically Scanned Array (AESA) Systems – Status and Trends

Organisers:

Helmut Wilden, Fraunhofer FHR, Germany

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Abstract

The technology of active electronically scanned arrays (AESA) has proven indispensable for advanced defence and space application. Its importance is also increasing for communication systems, in particular for future 5G cellular networks. The outstanding antenna performance, flexible scan strategies and adaptive pattern control are prerequisites for highest situational awareness as well as for tomorrow's communication requirements. The integration of GaN RF power technology, mixed-signal devices based on SiGe/BiCMOS, and continuous increase of processing power will foster the use of wideband and multi-band antenna systems for multi-functional systems.

This workshop will present a mix of defence, space and communication array systems by leading international industries and research laboratories, providing technological cross-fertilisation over these different application domains.

The different contributions will present a mix between technological possibilities (including GaN, SiGe and processing solutions), architectural aspects (including super resolution with element-based receive signals, CW-radar operation, shared apertures ultrahigh bandwidth and adaptive beamforming) as well as cost (including development, manufacturing and life-cycle cost).

Programme

08:30 - 09:00 Space-Borne AESA Systems: Architectures, Technologies and Applications

Grzegorz Adamiuk, Martin Stangl, Airbus DS, Germany

09:00 - 09:30 All Silicon Phased Arrays: The Convergence of Technology, Applications and Architecture

Ian Gresham, Dave Corman, Anokiwave, USA

09:30 - 10:00 The German Experimental Space Surveillance and Tracking Radar

Helmut Wilden, Fraunhofer FHR, Germany

10:00 – 10:10 Discussion

10:10 - 10:50 Break

10:50 - 11:20 Recent Advances in AESA Radar

Simon van den Berg, Thales, The Netherlands

11:20 - 11:50 Active Antennas and Array Systems in 5G Mobile Communication Services

Florian Pivit, Nokia Bell Labs, Ireland

11:50 - 12:20 Broadband Multi-Functional AESA Front-Ends

M. Brandfass, Airbus DS Electronics and Border Security, Germany

12:20 – 12:30 Conclusions