Seat selection

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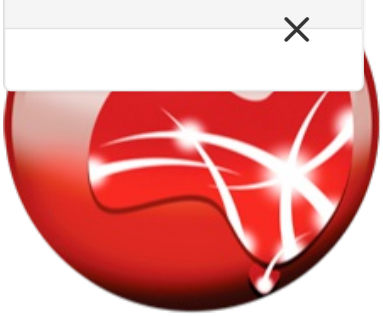

TelSoc

Telecommunications & the Digital Economy

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Radio Frequency Interference to Radars

Tuesday, 21st September 2021

EA and TelSoc members: No charge

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Book a Seat

[3]

This presentation is hosted by Engineers Australia, and provided by the Joint Technical Program of TelSoc's South Australian group. Registration is via the EA website: https://www.engineersaustralia.org.au/event/2021/07/radio-frequency-interferences-radars-38456 [3]

The event is at 17:00 Adelaide Time, 17:30 AEST.

Any radar system, be it microwave, or HF radars, operating on a surveillance mode or track modes, are relatively easy to design to the desired end specifications, under ideal conditions, without taking into account any external interferences or internally generated noise factors.

However, the radar data collected in the open-air range are often subjected to Radio Frequency Interferences (RFI). These spurious signals are electromagnetic noise generated by electronic devices external to the measurement radar system such as satellites, communication channels, or other radar systems. The portions of the radar data which have been impacted by RFI must therefore be identified and removed prior to final data re-construction, or else the overall quality of the data product will be a degraded one and not useful.

In addition, the radar data quality is also affected by the wind farm returns which is a modern threat to surveillance radars specifically Air Traffic Control radars. They are known to mask the real aircraft track data leading to catastrophic conditions.

Furthermore, the internal processing of the radar signals is also significantly impacted by various spurious harmonics and phase noise generated in coherent radar transmitters leading to the poor quality of the processed radar data.

This seminar will also touch upon the intentional RF interferences generated by the hostile sources, typically in a battlefield scenario, to jam or mislead the victim radar from their mission goals. The popular techniques of Electronic Attack (EA) and Electronic Protect (EP) will be discussed limited to the Unclassified level of security.

Date and Time

Tue, 21 Sep 2021

17:30 - 18:30 AEST

Location

Online Event Only
Melbourne
Melbourne VIC 3000
Australia

Presenter(s)

Krishna Venkataraman FIE(Aust) CPEng

Defence Project S&T Advisor, Radar Systems Engineer/Radar Specialist - Defence Science and Technology Group, Department of Defence, Australia.

Krishna’s current research interests include low-observable target detection (intruder/non-cooperative), netted radars ‘sense and collect’ for situational awareness, coherent detection in multistatic environment, spectral purity and phase noise in radar systems, radar performance modelling/assessment, analysis, and mitigation of intentional/non-intentional RF interferences (e.g. wind farms) on surveillance and track radars, Multifunction Arrays etc

Krishna has over 40 years of radar experience and his past activities in defence industries

include leading research and development of signal processing algorithms for naval surveillance (X, S and L band) radars, Doppler tracker (C band) in radars for space surveillance and tracking, Airborne Early Warning radar (signal processing), Air Traffic Control radars, (Aeolian) phase noise in OTH radars etc.
