

TRACK 5: RSAF INDIGENOUS PROJECTS

“AUTOMATED LIGHTNING DETECTION SYSTEM”

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ABSTRACT

After a thunderstorm, there is a need to conduct checks on aircraft parked in the open. One of the checks is to inspect if the aircraft had been strike by lightning and if it did, were there any damages.

Regardless of whether there was an actual strike, this check had to be carried out as there is no existing practical means to determine if lightning had struck; it is also not practical to put guards throughout the thunderstorm. Besides being manpower intensive, these checks also incur aircraft downtime.

To overcome the issue, an automated system was developed in-house to detect and locate lightning activities. Making use of multiple cameras and video analytics, the system is able to determine the area of lightning strikes. Concomitantly, Air Force Engineers can now make use of the system to assess with higher confidence if there is a need to carry out the lightning strike checks.

BIOGRAPHY OF SPEAKER



ME5 Eng Kwee Guan joined the RSAF in 1996 as a Senior Technician and is presently an Air Force Engineer. He has served in various appointments in Air Engineering and Logistics Department (AELD), Air Operations Department (AOD) and Air Power Generation Command (APGC).

Presently, ME5 Eng is a Branch Head in AELD, overseeing the airworthiness engineering of RSAF helicopter and transport aircraft avionics systems.

A Singapore Polytechnic merit and book prize holder, ME5 Eng was the Best RSAF Trainee in his Joint Polytechnic – SAF Diploma Scheme cohort, and Best Knowledge and Trainee from the Officer Cadet School Air Force Service Term.

Awarded the SAF Academic Training Award, he was amongst the top Electrical Engineering (EE) graduate from the Imperial College London and his award winning research was the department’s top project. He was also placed as U.K.’s top 3 EE student in a national competition.

A recipient of the SAF Postgraduate Award, ME5 Eng obtained an MSc in Defence Technology and Systems from the NUS, and an MSc in EE from the U.S. Air Force Institute of Technology (AFIT). Amongst the top AFIT EE graduate, ME5 Eng is a member of invite-only Tau Beta Pi and Eta Kappa Nu societies, and Institute of Electrical and Electronics Engineers (IEEE).