

TRACK 5: INNOVATION AND APPLICABLE TECHNOLOGY**“AI-POWERED DAMAGE ASSESSMENT FOR AIRCRAFT”**

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ABSTRACT

Emerging technologies such as artificial intelligence-powered inspection and 3D data visualization have presented opportunities to improve MRO operations. AI-powered damage assessment can be applied to inspection of aircraft structures and components. Instead of assessing certain damage manually, the inspector uses a camera or 3D scanner to take photos or scans of the component – or mounts the device on a robotic platform for automated inspection. Using computer vision, image processing, computational geometry, machine learning and special algorithms, the AI engine analyses photos or 3D point clouds, including many variables, for damage severity and to pinpoint conformance issues such as dents, scratches, and cracks – that can easily be missed in a routine check. This provides an accurate, objective and fast assessment. Unlike the traditional “scan-to-CAD” inspection approach, this eliminates the need for a CAD model and works on most assets readily. Inspection results and maintenance related information such as the repair history of the components can be visualised on a 3D model heat map, enabling the team to identify problem areas clearly and repair actions promptly. Automated inspection, combined with 3D dashboard, will enable the team to reduce the time and human resources needed to perform a task – improving MRO productivity.

BIOGRAPHY OF SPEAKER

Mr Roger develops 3D simulation, visualisation, training & documentation solutions with focus in the automotive and aerospace industries. He has developed solutions for systems ranging from tactical vehicles to aerospace systems. Prior to joining Kalibre, he served in the 1 Defence Technology & Logistics Organisation and is in charge of fleet life cycle management - covering system acquisition, fleet performance and sustainment.