

**TRACK 3: 4TH INDUSTRIAL REVOLUTION****“DIGITAL TWINNING – THE NEXT STEP IN AIRCRAFT HEALTH MONITORING”**

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**ABSTRACT**

A digital twin is a virtual representation or mapping of physical asset like aircraft engine, to a digital platform, which displays how the asset is performing. It monitors the asset in real-time or periodic updates; analyses operational data such as temperature and pressure; and displays maintenance data such as failure rates and inventory.

Digital twinning can be applied to assemblies or aircraft, giving an integrated view of fleet health. A digital twin updates itself from data sources such as sensors, environment/weather, repair history, enterprise software, digital records and human expertise - to represent asset conditions as well as probable equipment failure. This enables better decision making on operation and maintenance, keeping aircraft-on-ground to a minimum.

These are possible as aircraft are generating substantial data per flight. But there are challenges. It requires substantial resources. No one stakeholder has all the data that power digital twinning. Data sharing is essential but not easily realized as data reside in different systems & owners. Nevertheless, digital twinning does offer the potential to improve aircraft availability.

**BIOGRAPHY OF SPEAKER**

Roger develops 3D simulation & visualization solutions for the automotive and aerospace sectors – for systems ranging from military vehicles, unmanned systems, to aerospace equipment. Prior to joining Kalibre, he served in defence technology organizations in charge of vehicle fleet life cycle management – from system acquisition, fleet performance to system sustainment.