

**TRACK 3: 4TH INDUSTRIAL REVOLUTION****“ACCELERATING DIGITAL TRANSFORMATION IN AEROSPACE AND DEFENCE INDUSTRY”**

BY

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**ABSTRACT**

Facing an increasingly competitive, threat-filled environment, aerospace and defence companies must digitally transform to deliver radical innovation. Multidisciplinary simulation solutions allow engineer to couple multiple physics with automated and accurate data transfer, to conduct robust analysis by monitoring input and output parameters with sophisticated material models, which leads to ensuring product performance across and beyond performance envelop, reduce failure modes due to system interaction and create platforms that can support multiple variants.

With the advancement of computing technology, applications of Machine learning and Numerical simulation are becoming more mature. With the combination of IIoT and Numerical simulation platform, Engineering simulation based Digital Twins is possible to achieve predictive and prescriptive maintenance. Virtual replica of physical asset could be created with the real time operating data input from the IIoT platform. The machine learning algorithm that is being trained from the IIoT platform could help to monitor the assets performance and the simulation tool could assist on troubleshooting the problems.

Hence, this paper is going to present about the benefit of multidisciplinary simulation tool and Digital Twins on aerospace and defence related applications.

**BIOGRAPHY OF SPEAKER**

Dr Vincent is currently a Senior Program Manager at CAD-IT Consultants (Asia) Pte Ltd. He is part of the technical team that supports customers in various disciplines. He graduated from NTU with a Ph.D. in Mechanical and Aerospace Engineering, where his thesis focused on flapping wings aerodynamics for unmanned vehicles