

TRACK 4: MISSION SYSTEMS / VIRTUAL TRAINING**“USING VIRTUAL REALITY FOR EVIDENCE-BASED TRAINING IN AVIATION LINE OPERATIONS: MOVING FROM ERROR TO UNDESIRE STATE MANAGEMENT”**

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ABSTRACT

Evidence-based training (EBT) focuses on managing the most relevant threats and errors, based on evidence collected in operations and training, so as to ensure safe, effective and efficient operations in a commercial air transport environment. This enhances the relevance of training content as it is aligned with the actual blend of technical and non-technical skills and knowledge needed.

This paper examines the use of virtual reality for implementing EBT, especially in transiting from error to undesired state management. Mismanaged threats and errors can lead to undesired states that reduce the margins of safety and increase the probability of adverse events. For example, if a crew selects a wrong approach and this error was subsequently identified, error management would be attempting to reprogram the correct approach which could result in an unstable approach if executed untimely. The crew is “locked in” to error management rather than switching to undesired aircraft state management.

Virtual reality can explicitly and realistically simulate threats and errors and their associated undesired states and outcomes. A case study is provided to demonstrate how realistic and immersive 3D interactive content can be an effective EBT for teaching appropriate actions in the phases of error, undesired and outcome.

BIOGRAPHY OF SPEAKER

Dr Chong Chee Leong is the Managing Director of Aviation Virtual. He holds a Ph.D. from MIT, and Engineering Bachelor and Master from NUS. He was the Founding Dean and Professor at UniSIM's School of Science & Technology and an academic staff at NUS for more than 20 years. His research is in technology and innovation management and training pedagogies. Dr Chong has been in various administrative positions in public and private institutions and he has worked as a consultant in projects across various countries.