Using STAMP-STPA in a real case of complex manual assembly in aircraft engine manufacturing

Systemic methods in complex and digitalized manufacturing series

Date: January 25th, 2025
Time: 15:00 UTC
Duration: 60 mins

Brief summary of content:

This webinar is the first part of the Webinar Series: Systemic Methods in Complex and Digitalized Manufacturing, showcasing applied and analytical modeling research using FRAM and STAMP-STPA. The webinar is presented by members of the IEA Resilience Engineering Committee. The series focuses on applications in complex and digitalized manufacturing environments, including scenarios with complex manual work, digital gloves, smart glasses, and cobots.

In particular, the intervention explores how methods like AcciMap and STAMP can enhance quality and safety strategies by considering the entire sociotechnical ecosystem. Drawing from a year-long project in an aerospace manufacturing facility, where the team engaged closely with multiple stakeholders at various organizational levels, we demonstrate the value of these methodologies in providing a comprehensive understanding of complex systems and identifying control failures. The discussion will encourage broader reflection on how applying these methods can support resilient and efficient practices in modern manufacturing environments. We emphasize their relevance in optimizing processes, reducing errors, and promoting continuous improvement through innovative approaches.

Early results:

Yaniel Torres, Sylvie Nadeau, Kurt Landau. 2022 Applying AcciMap and STAMP to the analysis of human error in complex manual assembly. Human Factors and Ergonomics in Manufacturing & Service Industries vol. 32, n° 6. p. 462-481

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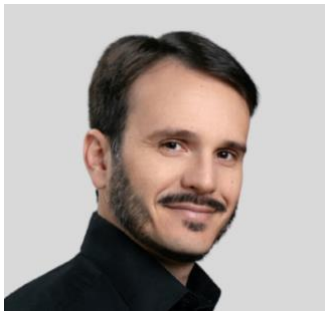
Dr. Yaniel Torres holds a Ph.D. in Engineering from École de technologie supérieure (ETS) in Montreal, where he focused on reducing assembly errors in the aerospace manufacturing industry. With over a decade of experience, Dr. Torres has collaborated with diverse industry sectors, including aerospace, biotechnology, hospitality, and energy. His current research encompasses systemic approaches to manufacturing, the application of industrial exoskeleton technology, and the impact of fatigue on human error. His work is featured in various international journals, and he is a member of the Quebec Board of Engineers, the Association of Canadian Ergonomist, and the Colombian Society of Ergonomics. Dr. Torres remains committed to interdisciplinary research, engaging with academic and industrial partners to advance safety and ergonomics practices



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Registration
https://us02web.zoom.us/webinar/register/WN_iuNvcvhpTuyoj7StDzvfZg

Registration is free to all interested people. The webinar will be recorded and published on YouTube. Registration permits live interaction with the presenters via Q&A.