OPC DAY
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From Simulation to the Digital Twin Powered by OPC UA

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FINNISH SOCIETY OF AUTOMATION
SUOMEN AUTOMAATIOSEURA RY

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Agenda

- Background
- EU Research
- Improving manufacturing operations
- From 3D Simulation to Digital Twin
- Advantages of using OPC UA

Background

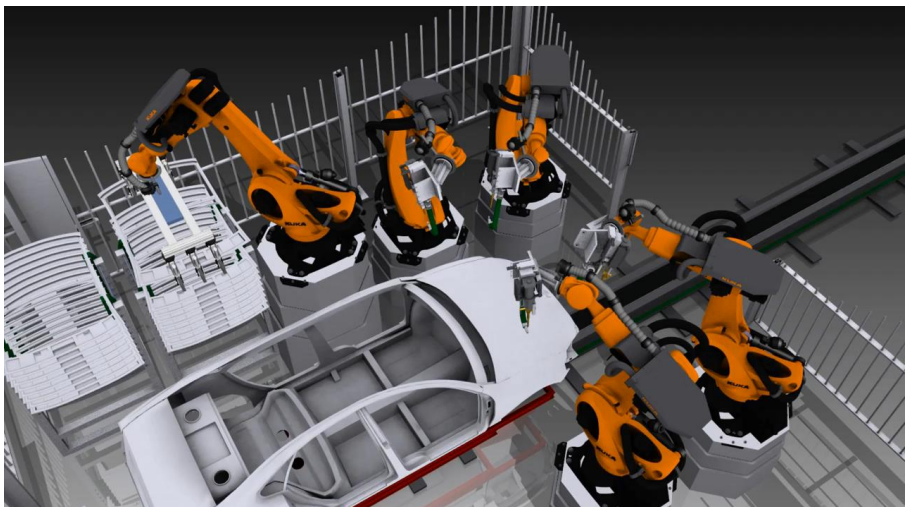
MSc. Fernando Ubis

Research and Development Manager

Visual Components Oy

Visual Components Oy

- Finnish Company
- One of the pioneers in 3D manufacturing simulation and visualization
- Extend the use of 3D Simulation in the manufacturing domain
- Innovative products investing heavily in R&D



European Research

SkillPro

LEAN AUTOMATION

L4MS
Smart logistics for manufacturing

FACTORY2FIT

QUALITY

Boost 4.0
BIG DATA FOR FACTORIES

EUR3KA

OPTIMAI

Open-**D**igital-**I**ndustrial and **N**etworking pilot lines using modular components for scalable production
ODIN

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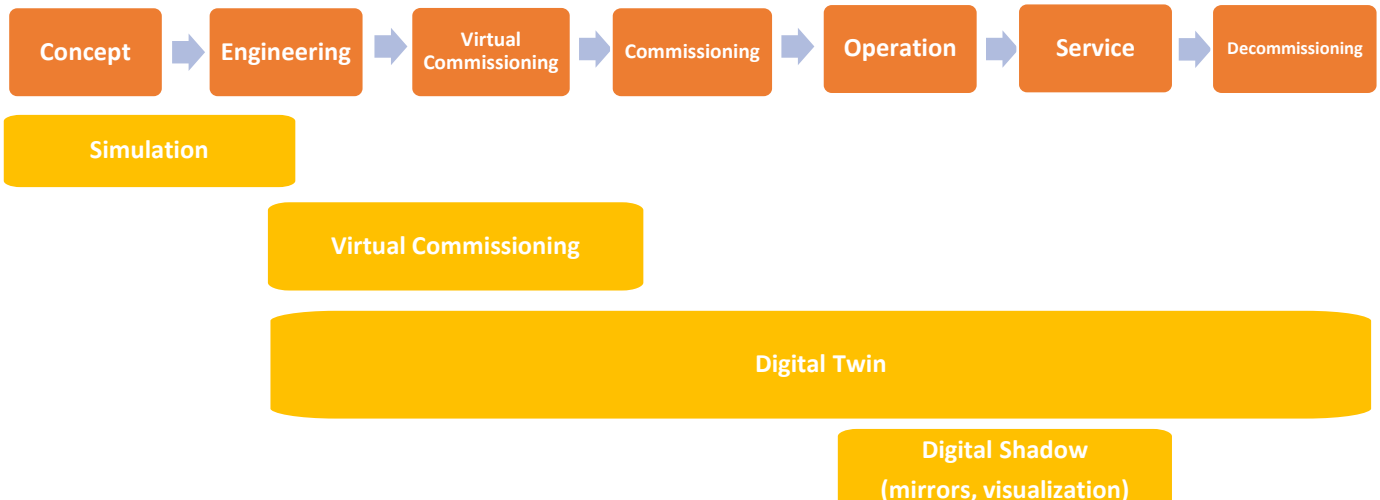
Manufacturing

- Improve manufacturing operations
  - Increase productivity
    - Robotics and automation
    - Other technologies
      - Simulation
      - ICT technologies
      - Combination
- 3D Simulation -> Digital Twin

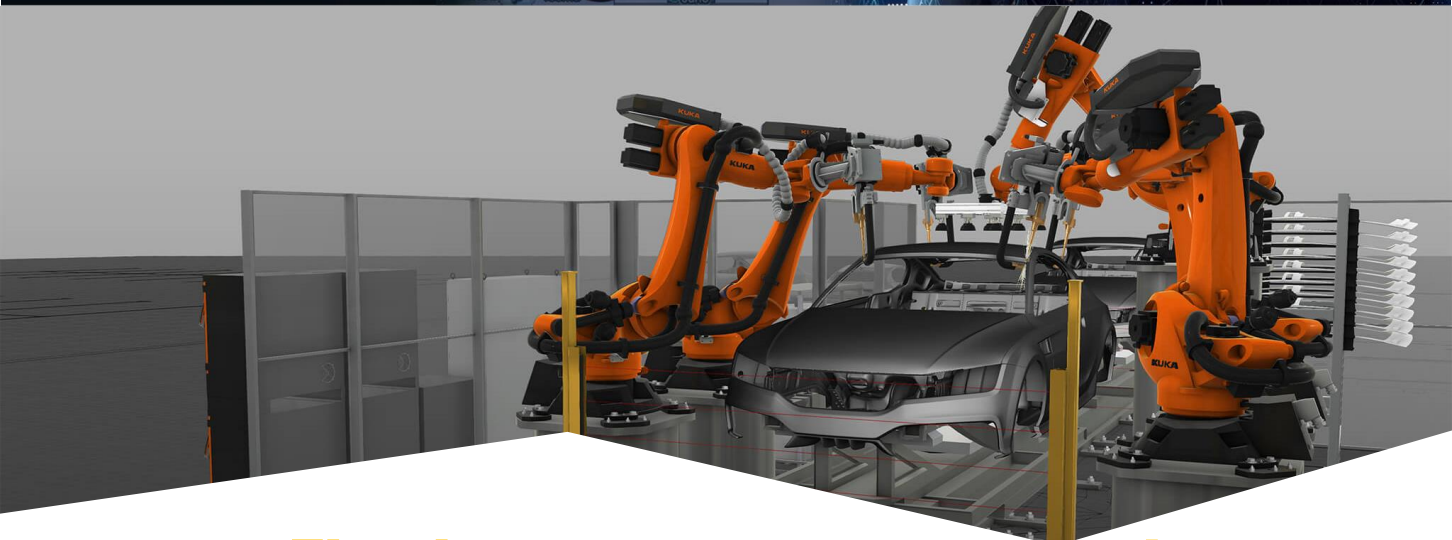
- **Simulation** allows the study of a physical system by substituting it by another, more suitable to observation or measure
- A **digital twin** is the combination of a **computational model** and **a real-world system**, designed to monitor, control and optimize its functionality.
  Through data and feedback, both simulated and real, a digital twin can develop capacities for autonomy and to learn from and reason about its environment. (Arup 2019)

Manufacturing System Lifecycle



OPC UA Advantages

- Strong Standardization (Data models, Communication interfaces, Security,...)
- Industry accepted
- Easily to deploy (available solutions)



Thank you for your attention!

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