Toward Smart Factory and Digital Transformation

Smart Manufacturing Innovation Center

Digital Transformation Hands-on Skills

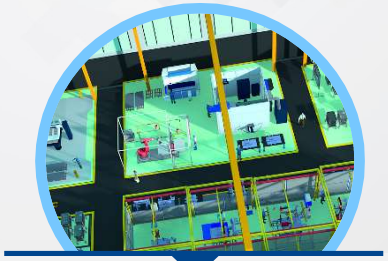
KETI Korea Electronics Technology Institute

안산 SMIC Smart Manufacturing Innovation Center

창원 SMIC Smart Manufacturing Innovation Center

“Interoperable Testbed” for Smart manufacturing

POC of Smart Manufacturing Solution



POC of new Solution
on real production scenario

Beyond vendor and domain

Industry Ecosystem

Ágora for
Smart Manufacturing

Membership of various stakeholders

Technician training program

Training smart manufacturing
professionals

From Technology to Business

SMIC Changwon

SMIC Ansan

SMIC

Supplier / Consumer

8 Basis Technology

- Sensor/IoT
- AI
- 5G / TSN
- AMR
- Digital Twin
- Smart MCT
- AR / VR
- Robot

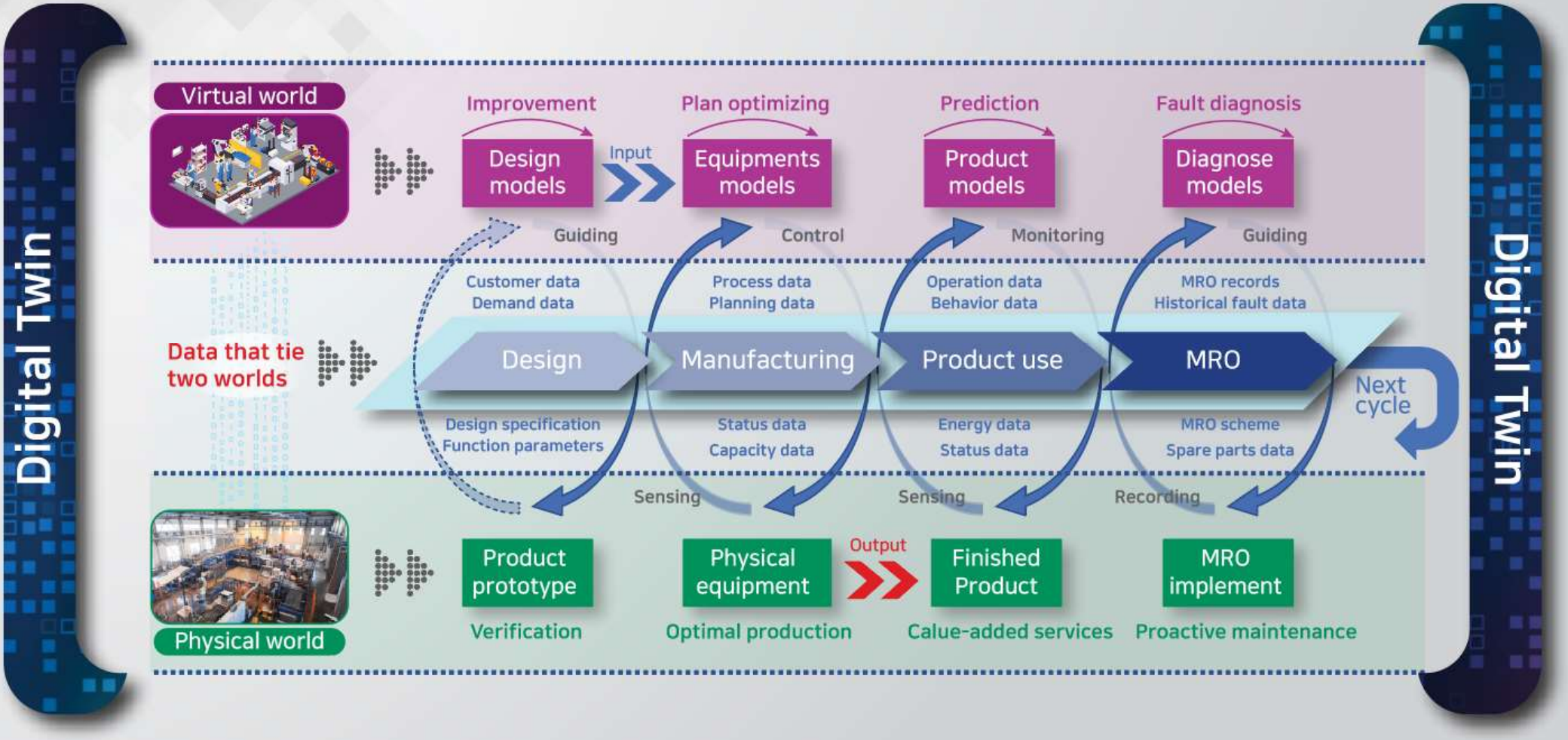
Converged Solution / POC

- Robot + AI
- Sensor + AI
- Sensor IoT + Cloud
- MCT+ Robot + AMR
- Digital Twin + OT & IT
- 5G + AI

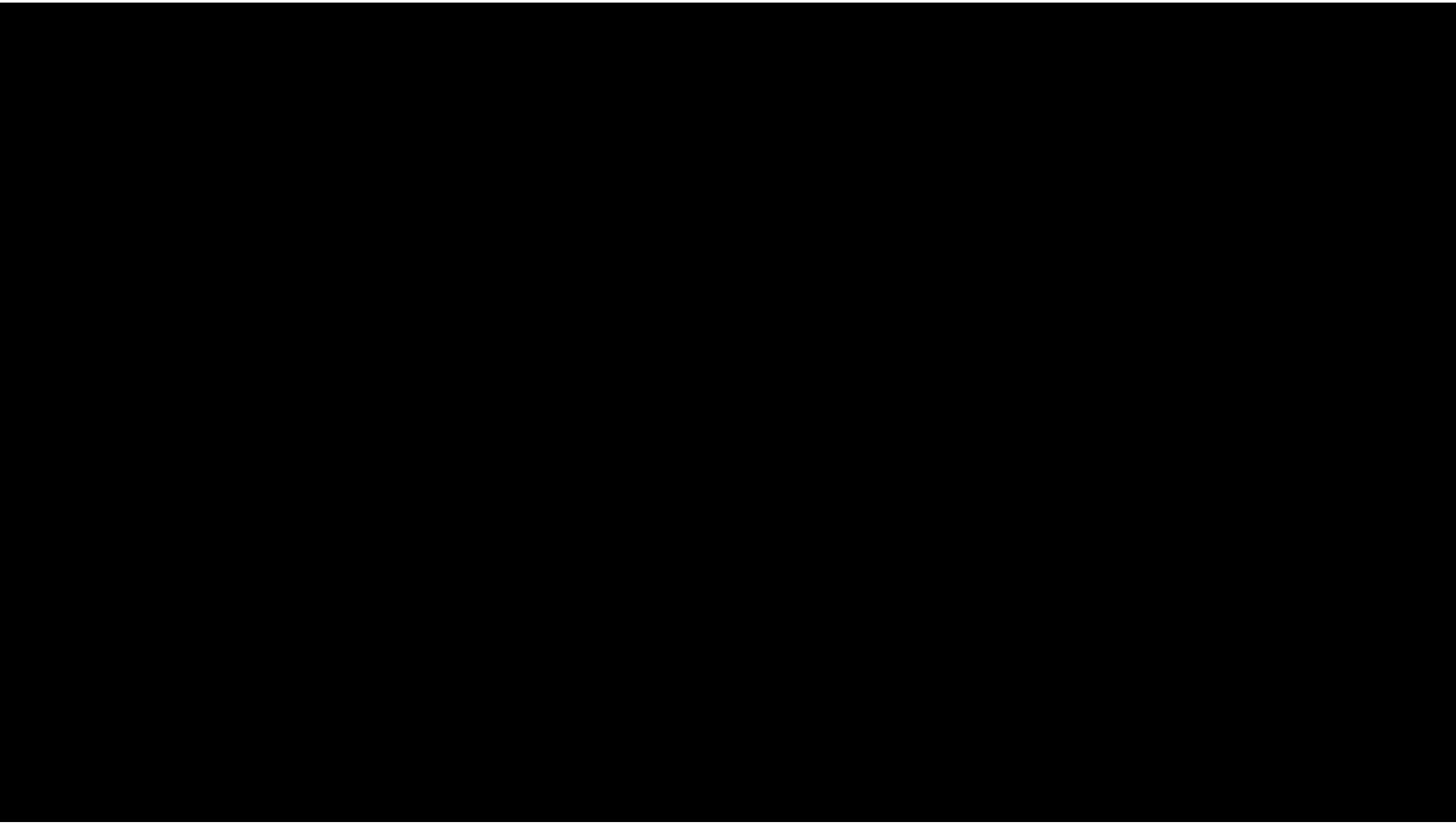
Spread into the Market

- Smart Product Develop
- Smart Production
- Smart Logistics
- Smart Service

- Achiving Common Target
- Supplier - Consumer Match Making
- Innovated Idea


Digital Twin
Digital Twin
Virtual world
Improvement
Plan optimizing
Prediction
Fault diagnosis
Design models
Input
Equipments models
Product models
Diagnose models
Guiding
Control
Monitoring
Guiding
Customer data
Demand data
Process data
Planning data
Operation data
Behavior data
MRO records
Historical fault data
Data that tie two worlds
Design
Manufacturing
Product use
MRO
Next cycle
Design specification
Function parameters
Status data
Capacity data
Energy data
Status data
MRO scheme
Spare parts data
Sensing
Sensing
Recording
Physical world
Product prototype
Physical equipment
Output
Finished Product
MRO implement
Verification
Optimal production
Calue-added services
Proactive maintenance


Light house for smart manufacturing
Presenting a direction for sustainable manufacturing innovation
KETI SMIC



스마트 공정혁신 데모공장 (창원)

Consumer

Ask Consulting

Optimized production based Digital Twin in SMIC

CAD Design

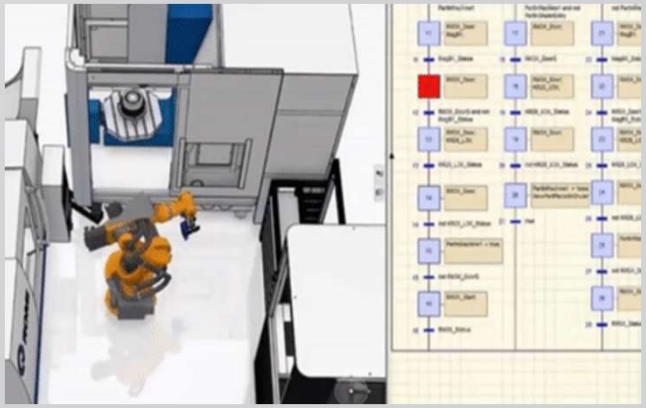
Analysis

Generate CAM Data

Virtual /Real Production

Polishing Treatment

Inspection

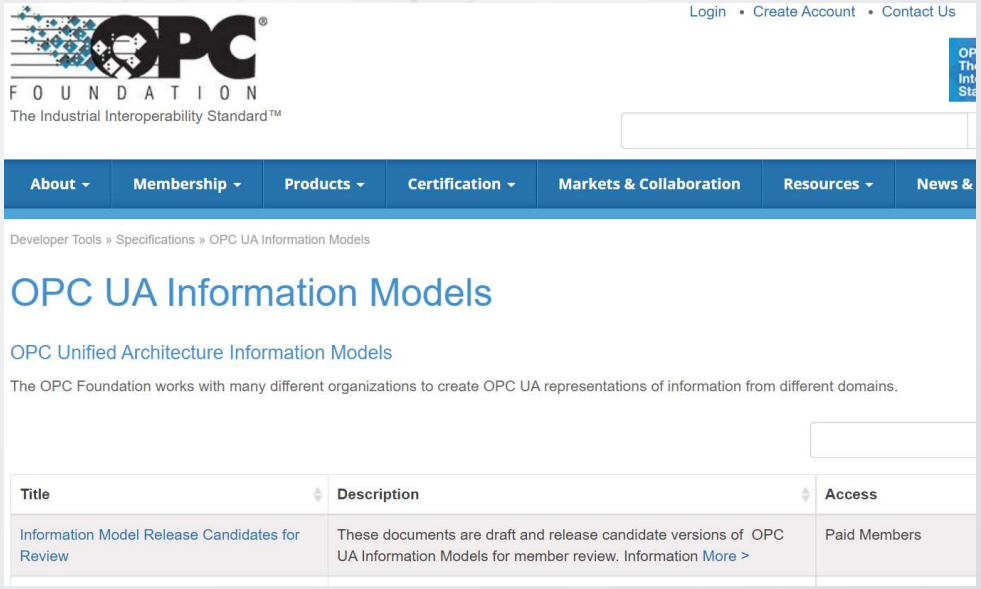


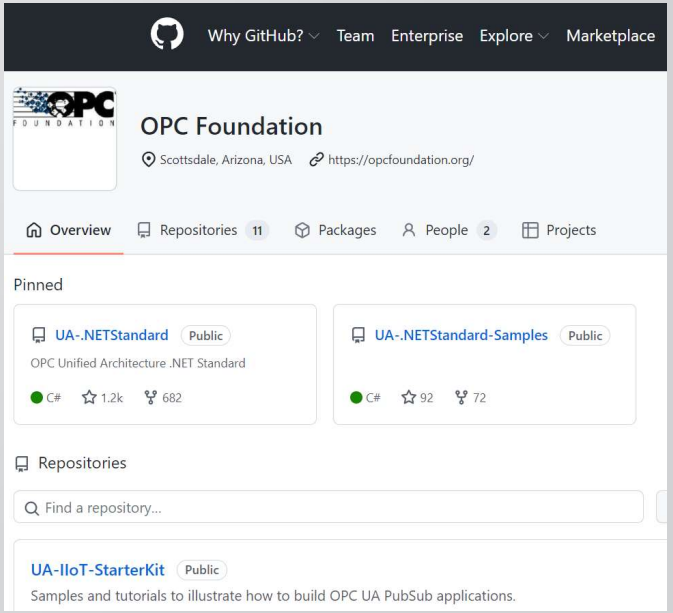
Feedback

SMIC Membership

SMIC Testbed Use case

OPC Unified Architecture Information Models

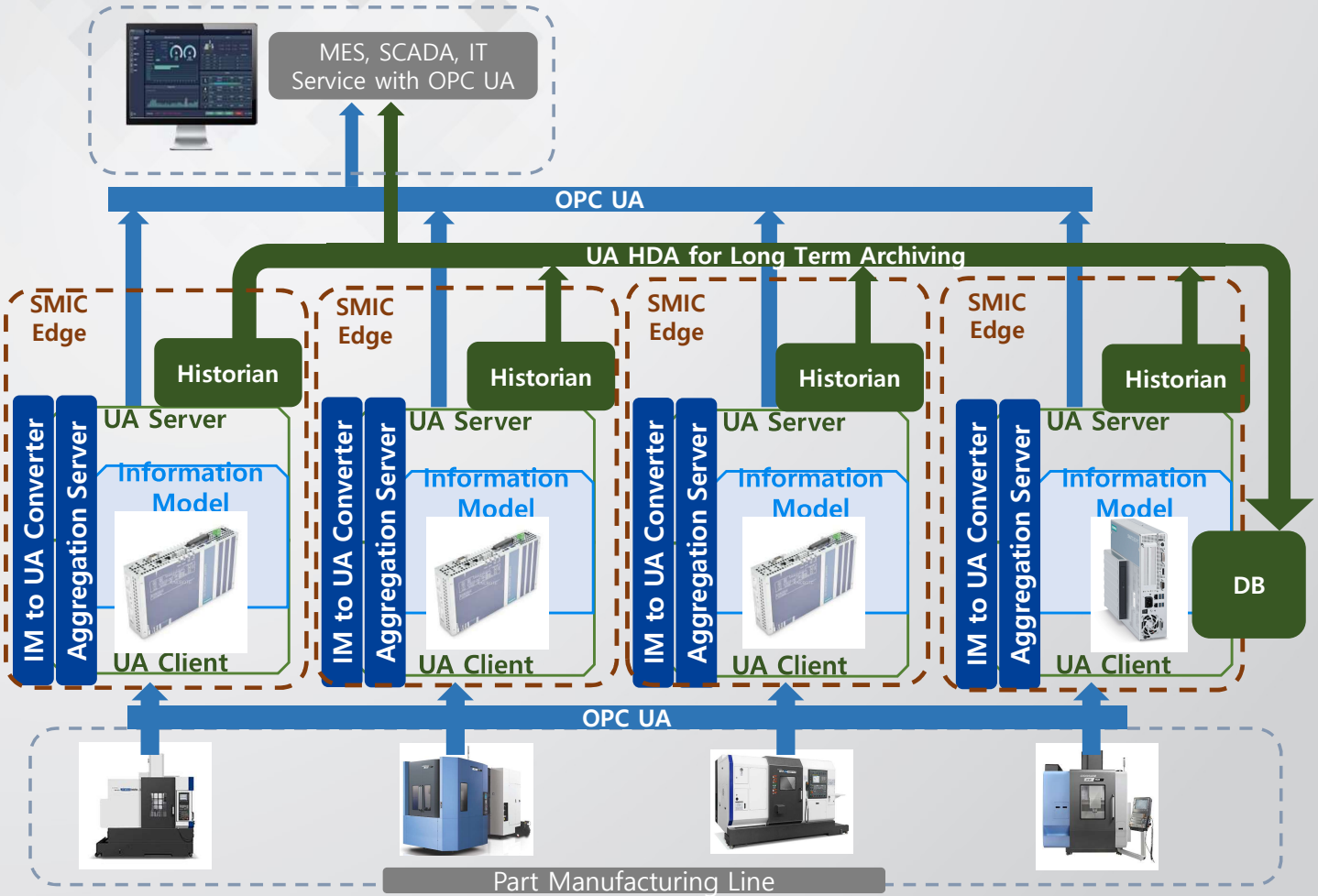




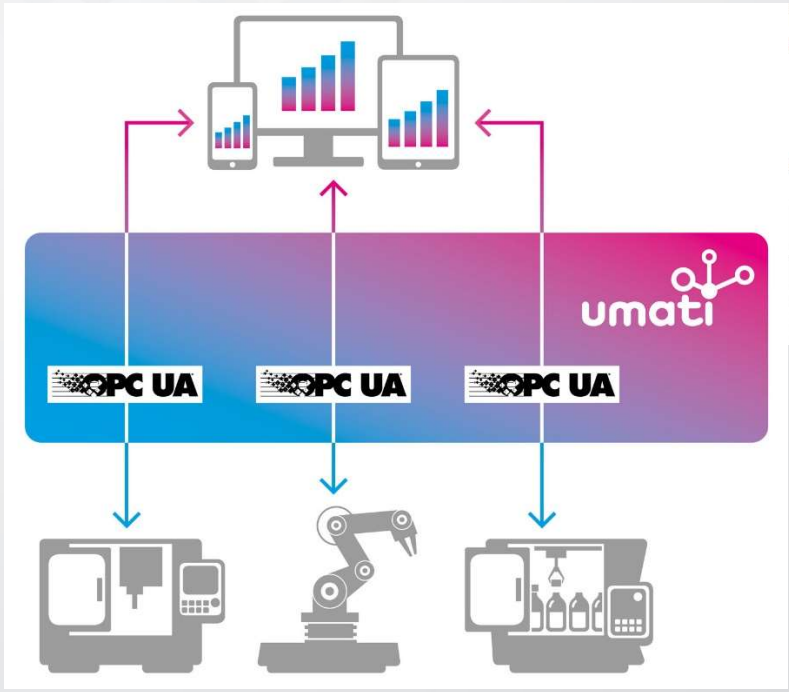
- Information Model for more than 30 domains.
- It's evolving at this moment.

- Open for everyone in GitHub

OPC Unified Architecture Information Models



OPC Unified Architecture Information Models



Title: OPC UA for Machinery

Description: The OPC UA for Machinery Information Model defines building blocks for machinery that address use cases across different types of machines defined in various companion specifications. The use cases include locating and identification of all machines in an OPC UA Server, but is not limited to those use cases. The intention are generalized concepts in the area of machinery in order to harmonize the usage of OPC UA in the context of the mechanical engineering industry. Here, "machine" means any piece of equipment that converts energy (e.g., electricity, steam, gas, human power, pressure) to mechanical movements, heat, electrical signals, pressure etc. to do a particular job in an industrial scenario.

Access: Registered User

Downloads

Version	Status	Description	Date Posted (YYYY-MM-DD)	Download
1.01	Release	OPC 40001-1 - UA CS for Machinery Part 1 - Basic Building Blocks (ZIP/PDF)	2021-02-17	

Title: OPC UA for MachineTools

Description: OPC 40501 specifies an OPC UA Information Model for the representation of machine tools.

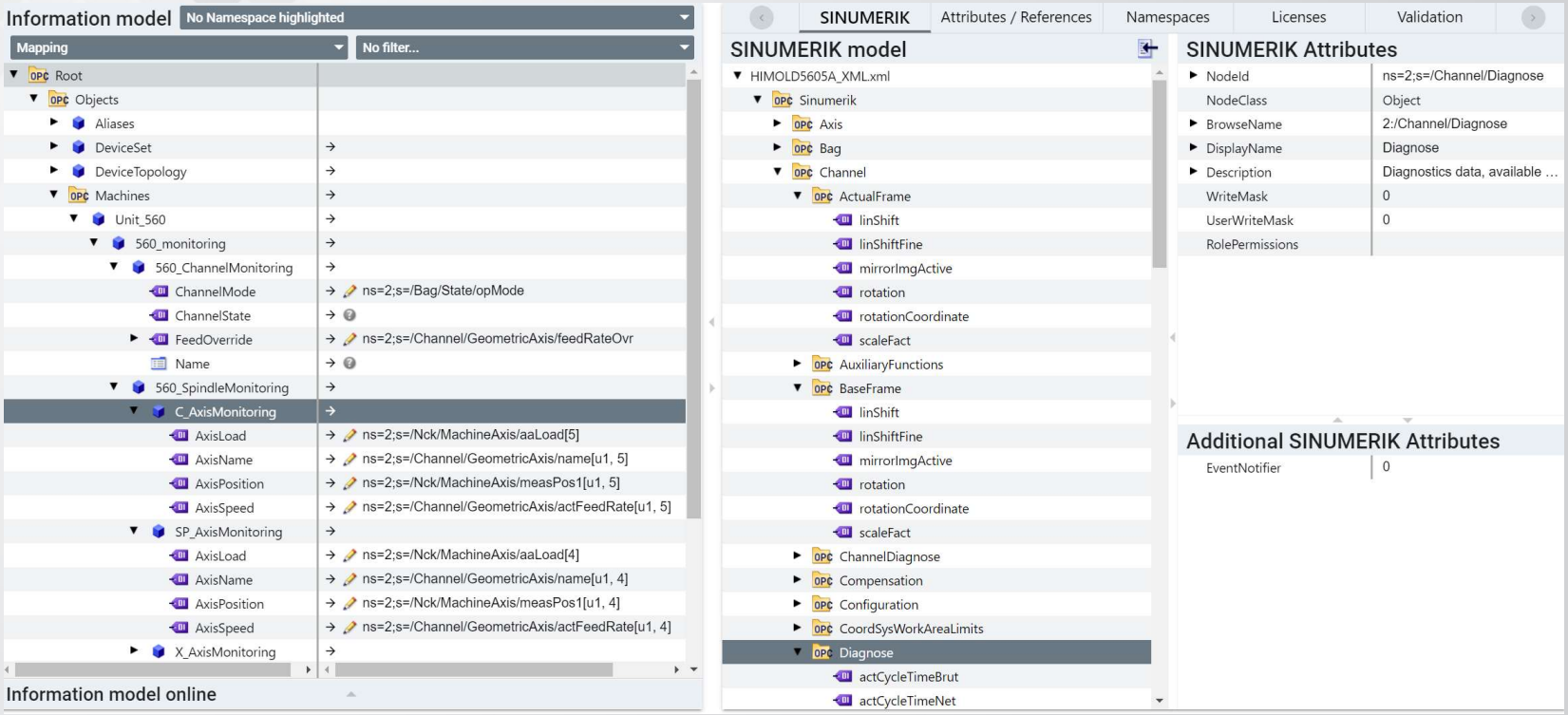
Part 1 aims at straightforward integration of a machine tool into higher level IT systems. The scope is a common interface among machine tools of different technologies, manufacturers and model series. The definitions in this part allow for monitoring the machine tool and giving an overview of the jobs on it. It allows an exchange of information between a machine tool and software systems like MES, SCADA, ERP or data analytics systems.

Access: Registered User

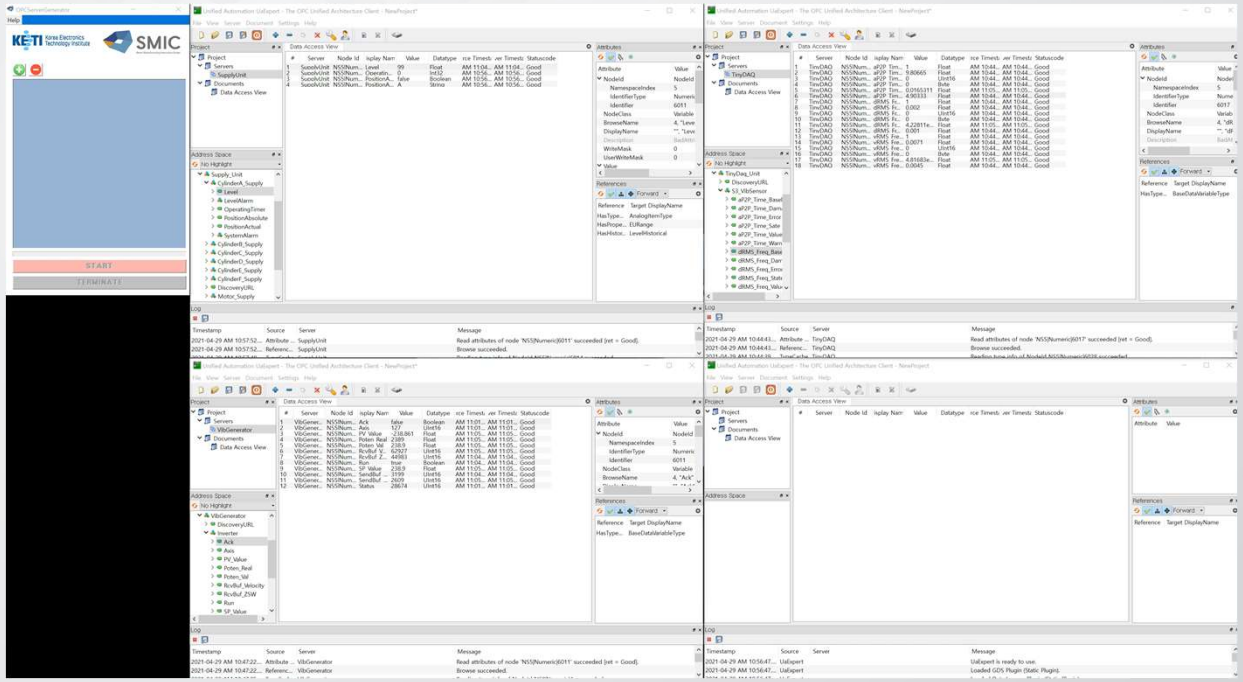
Downloads

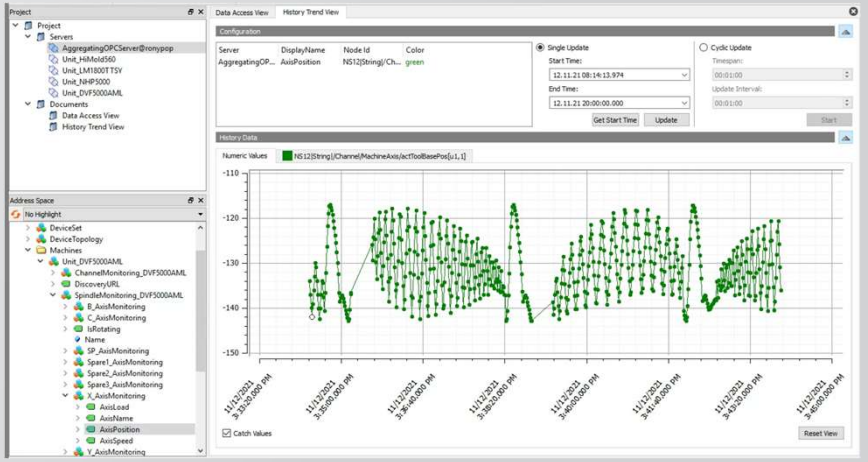
Version	Status	Description	Date Posted (YYYY-MM-DD)	Download
1.00.0	Release	OPC 40501-1 - UA CS for Machine Tools Part 1 - Monitoring and Job (ZIP/PDF)	2020-09-25	

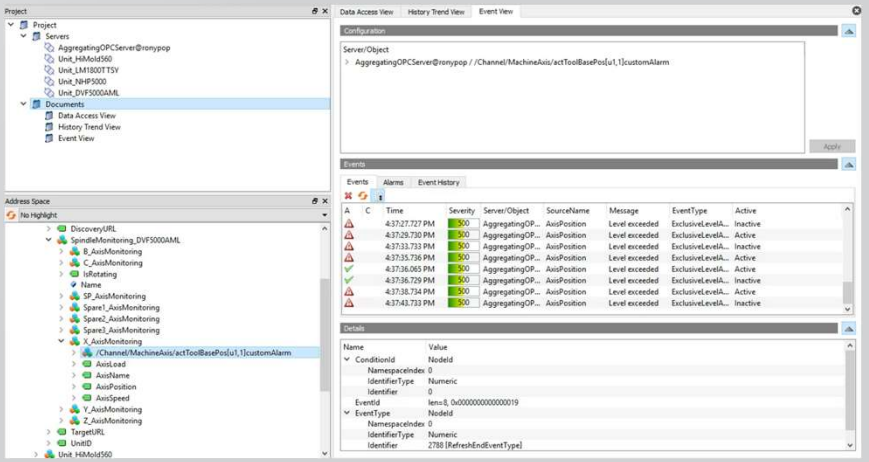
OPC Unified Architecture Information Models



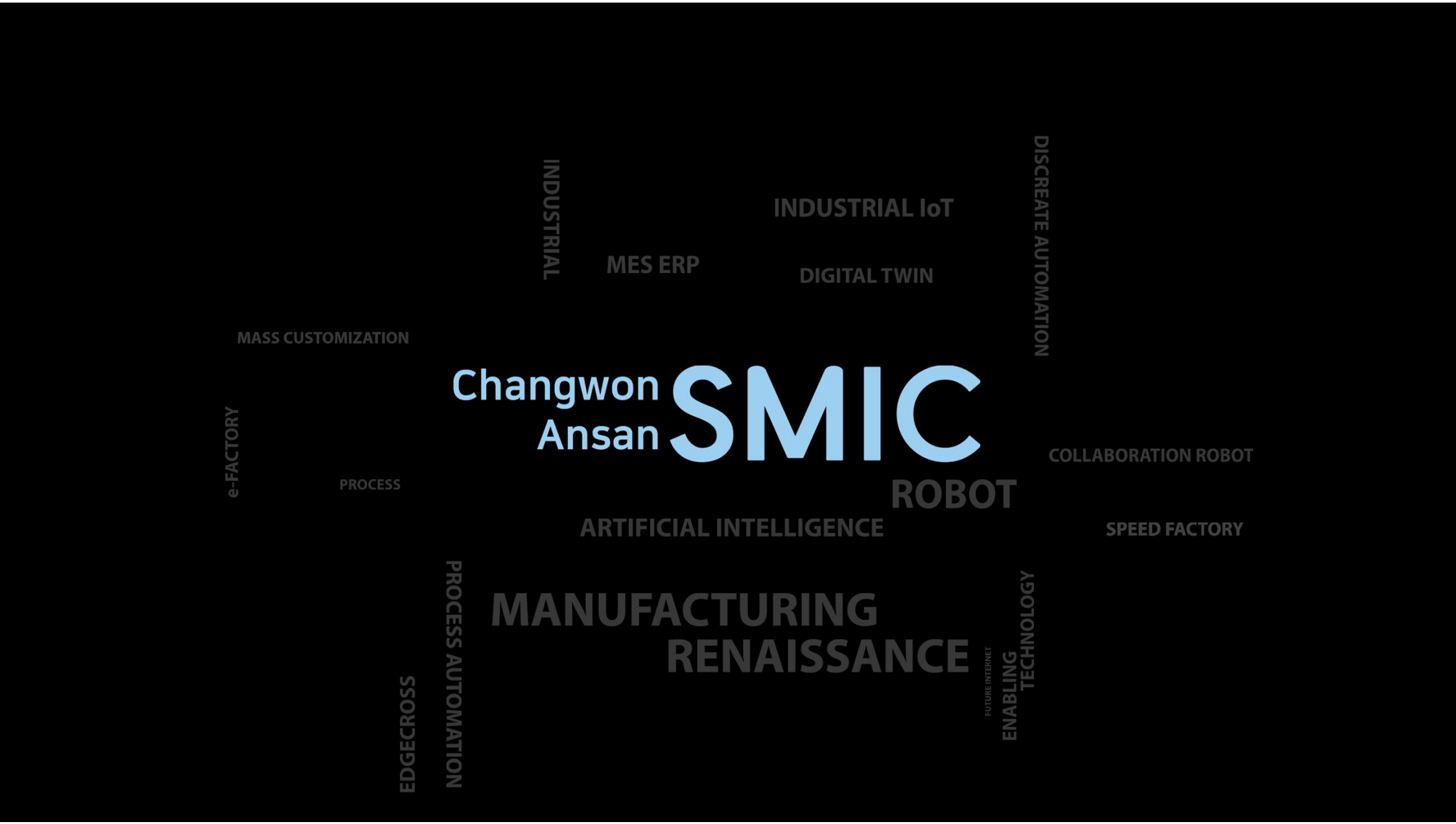
OPC Unified Architecture Information Models








SMIC,
the partner for smart manufacturing


INDUSTRIAL
INDUSTRIAL IoT
DISCREATE AUTOMATION
MES ERP
DIGITAL TWIN
MASS CUSTOMIZATION
Changwon
Ansan
SMIC
e-FACTORY
COLLABORATION ROBOT
PROCESS
ROBOT
ARTIFICIAL INTELLIGENCE
SPEED FACTORY
PROCESS AUTOMATION
MANUFACTURING
RENAISSANCE
ENABLING TECHNOLOGY
FUTURE INTERNET
EDGECROSS