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# PCFF: PLUG & CONTROL FOR FLEXIBLE TRANSPORT EQUIPMENT BASED ON AUTOMATIONML

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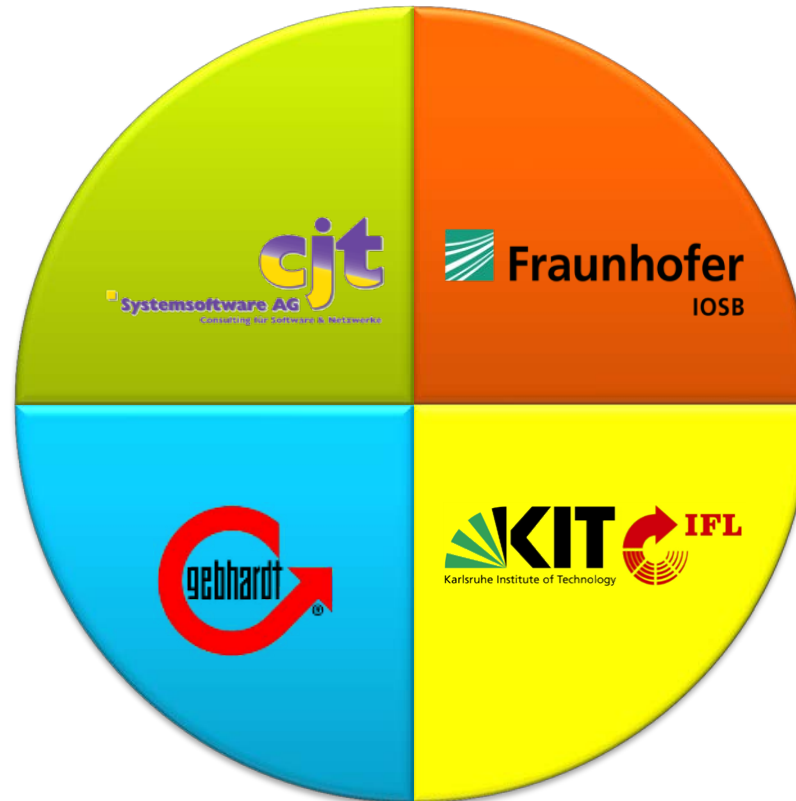


# Outline

1. Partner & Motivation
2. Goal & PCFF architecture
3. Example plant
4. Summary & Outlook

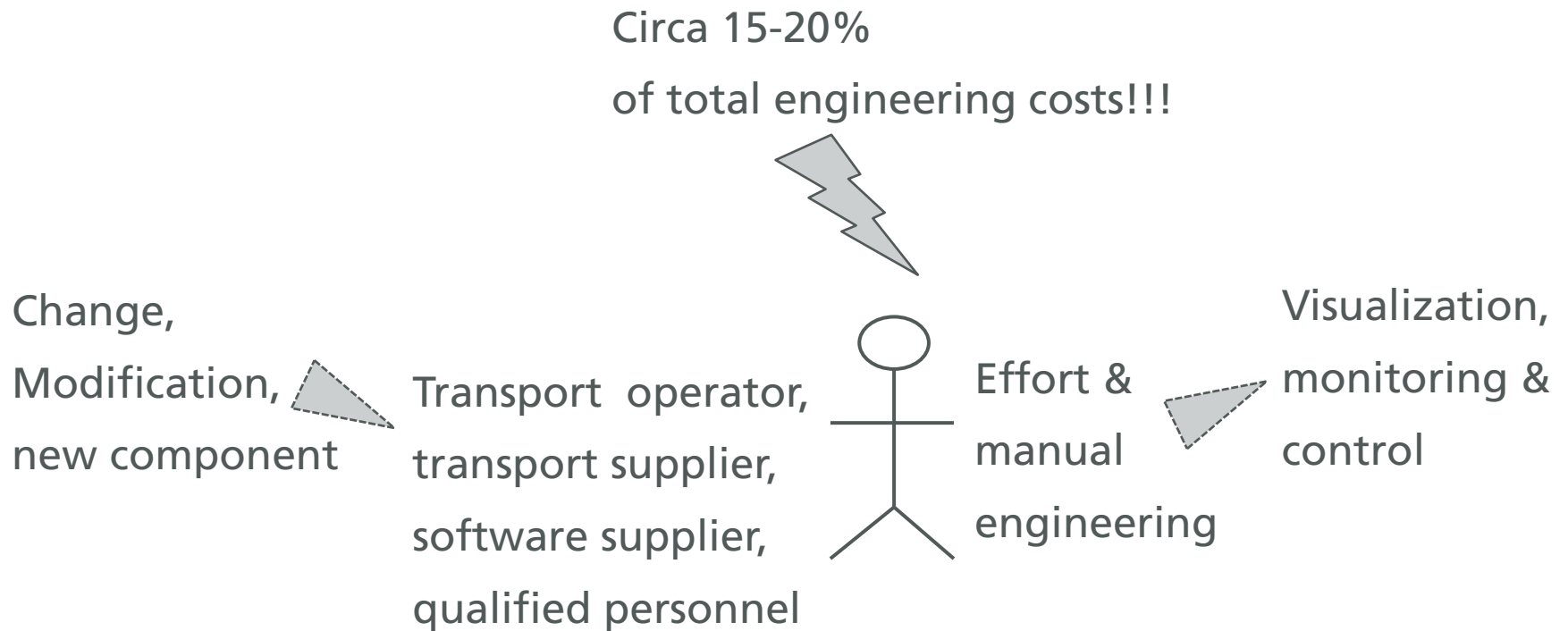
# PCFF - Partner

PCFF: Plug & Control for flexible transport equipment based on AutomationML ([www.zim-pcff.de](http://www.zim-pcff.de))

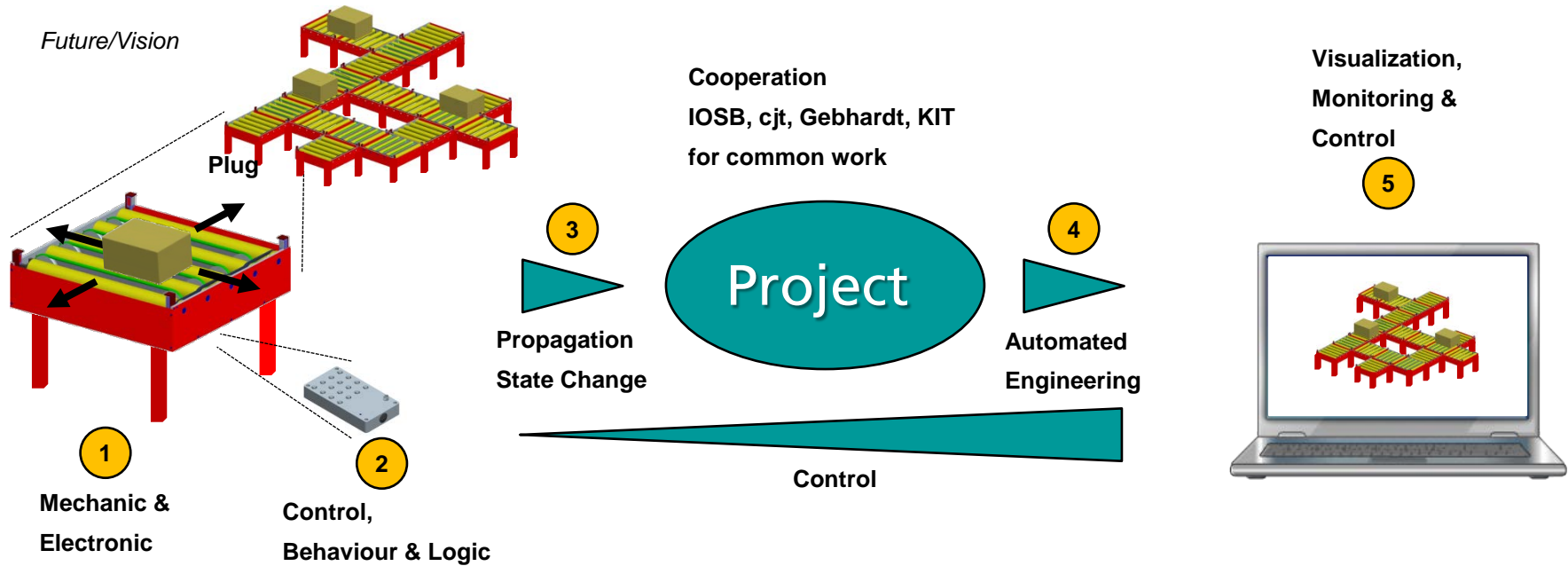
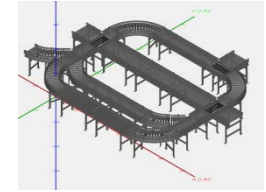


FKZ: ZIM KF2074712KM2, 1.4.13-30.9.15 ([www.zim-innovationsprogramm.de](http://www.zim-innovationsprogramm.de))

# State of the art



# PCFF – Idea of the Project



*State of the art*

Change, Modification,  
new component

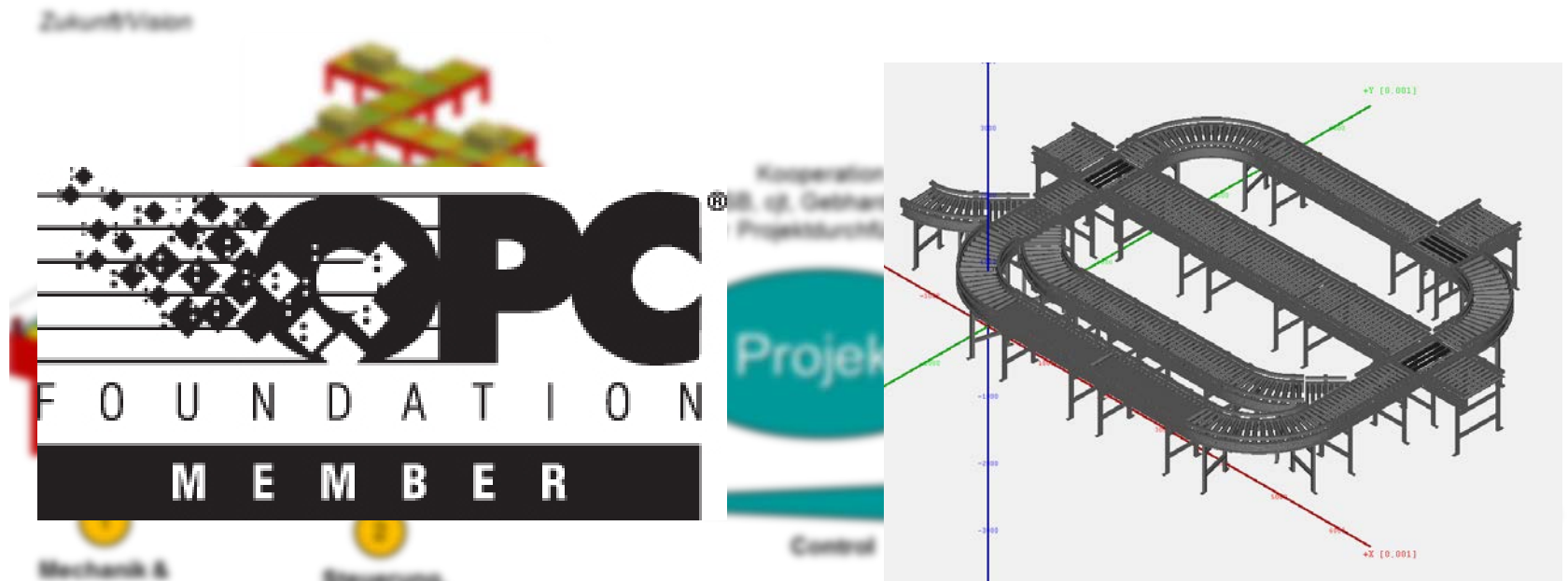
Transport operator,  
transport supplier,  
software supplier,  
qualified personnel

Circa 15-20%  
of total engineering costs!!!

Effort &  
manual  
engineering

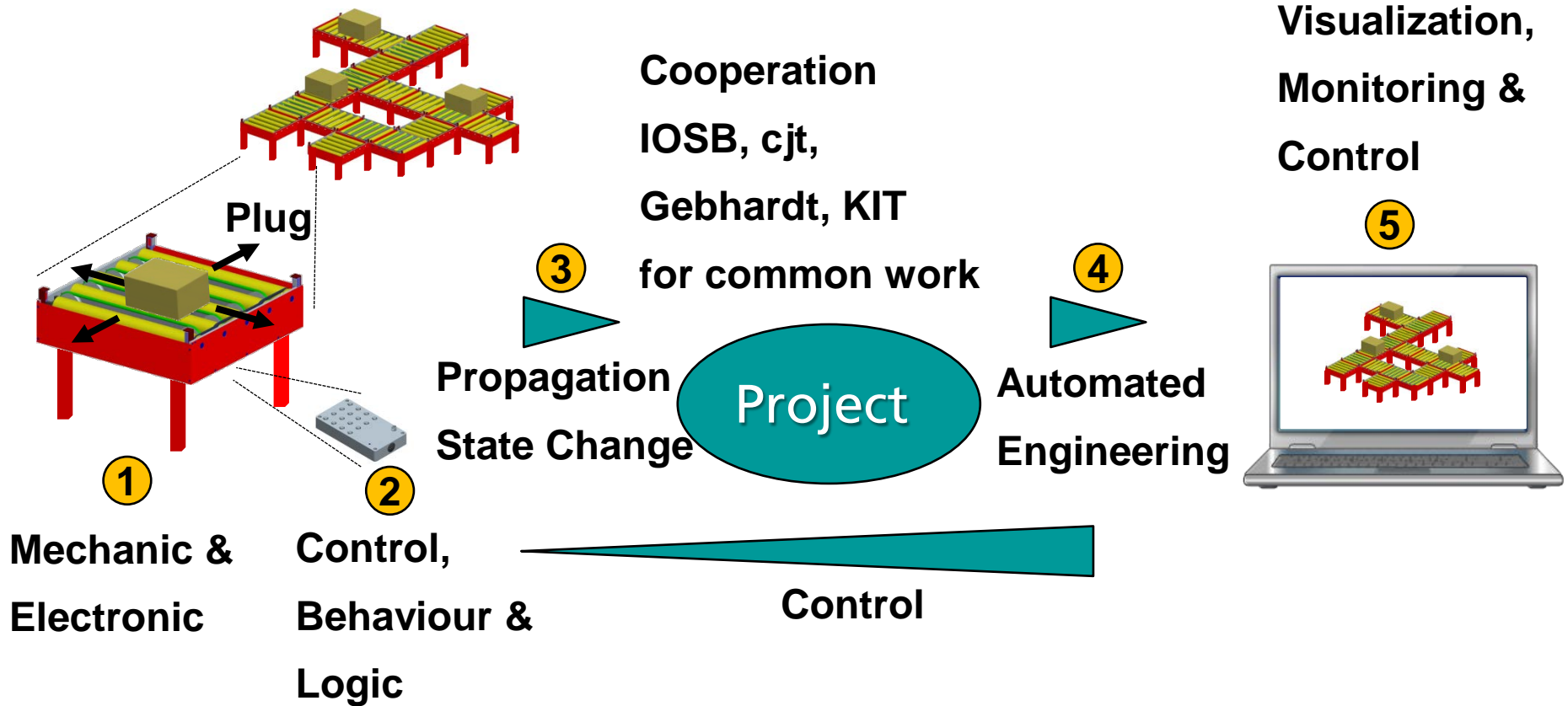
Visualization,  
monitoring &  
control

# Standards & application domain



# <AutomationML/>

# Idea of the Project – Future vision





# Hardware & plug mechanism

1



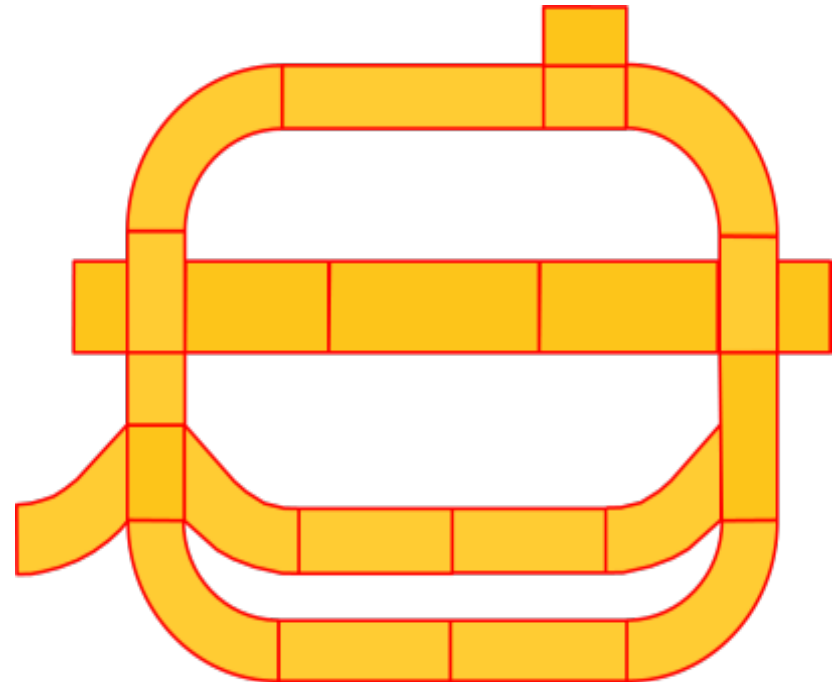
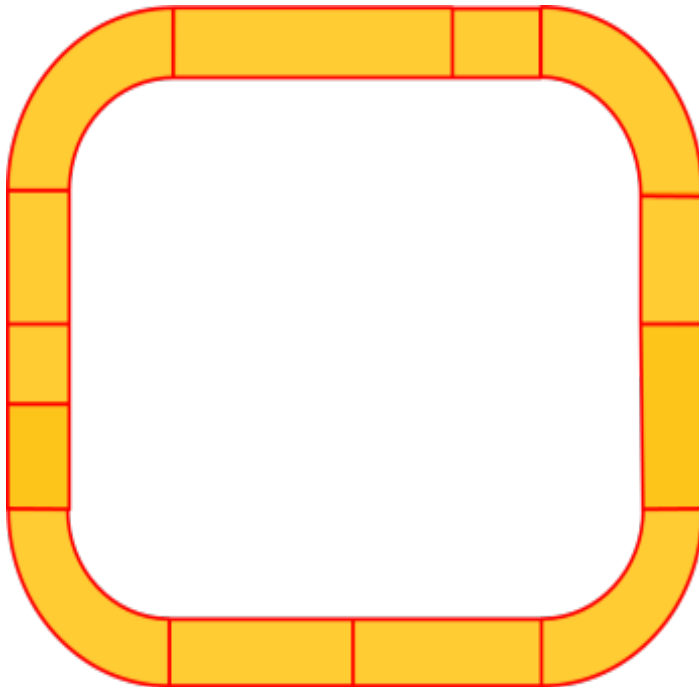
- 14 conveyor modules
- Tool-free plug mechanism (standard mechanical & electrical interfaces)
- High flexibility, high degree of reuse



# Example plants

1

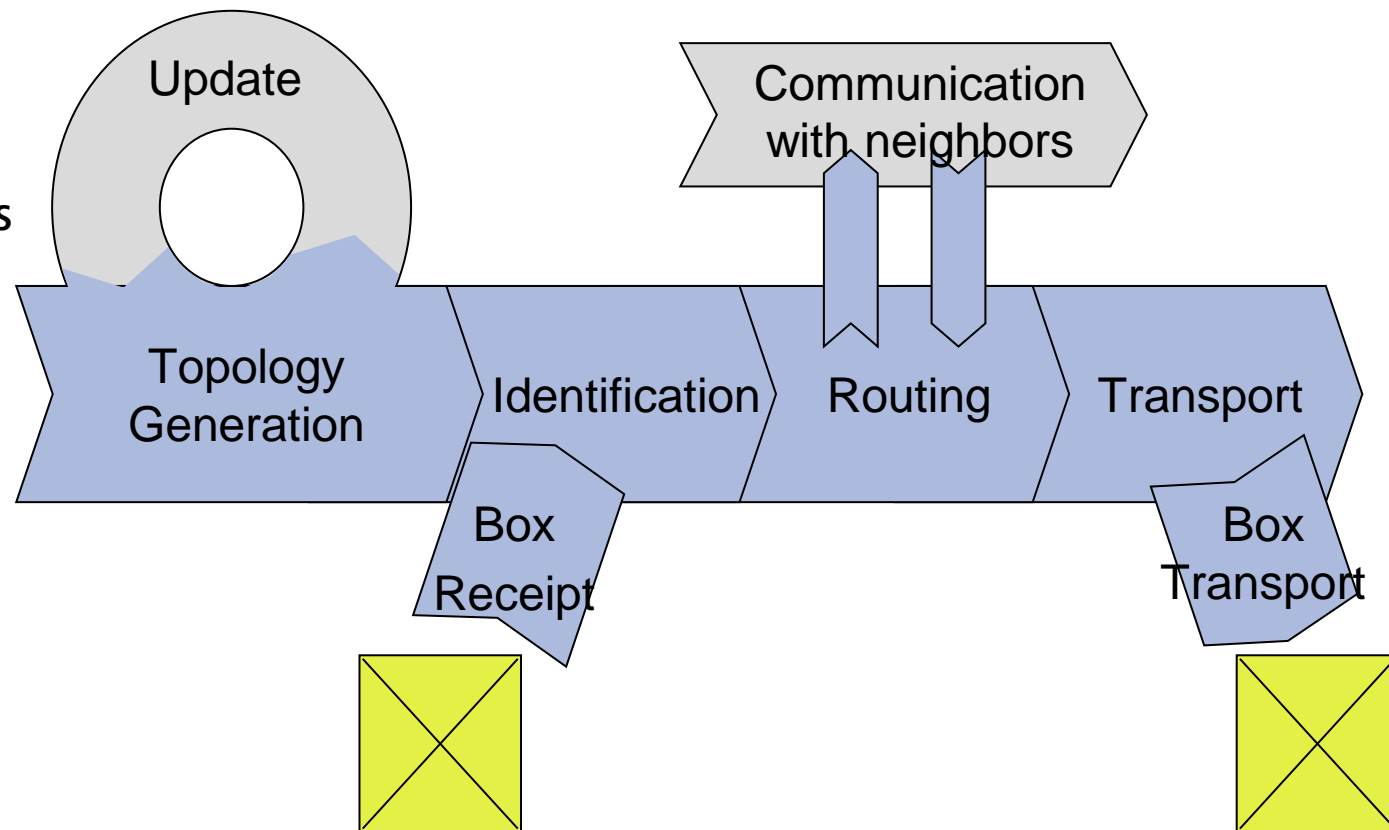
- Simple cyclic transport line
- Extended line with switches and transfers



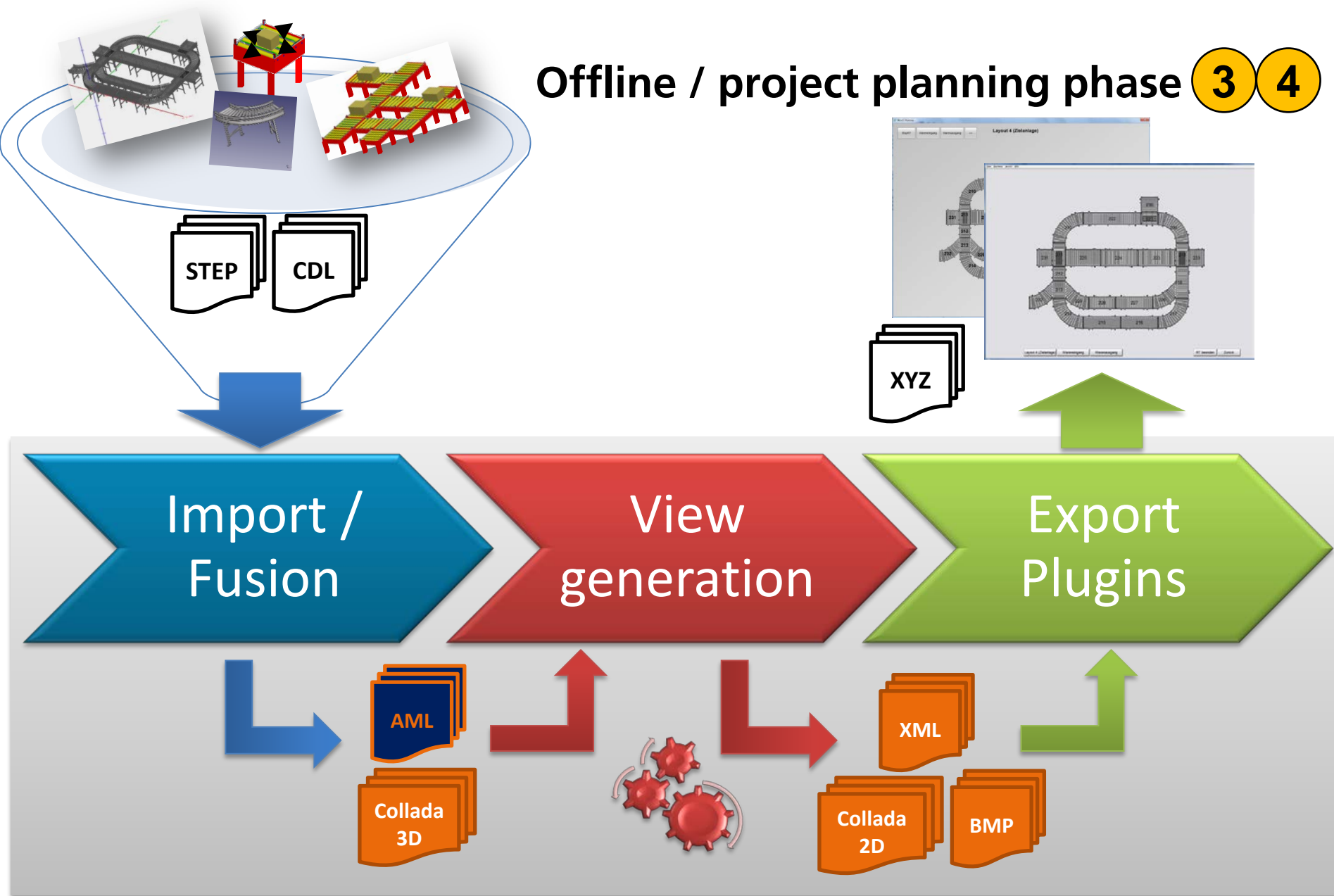
# Hardware & control logic

- Ethernet-based communication between modules
- Decentralized control algorithm
- Simple operating mode: static transport routes

- Advanced operating mode: autonomous transport to defined destination

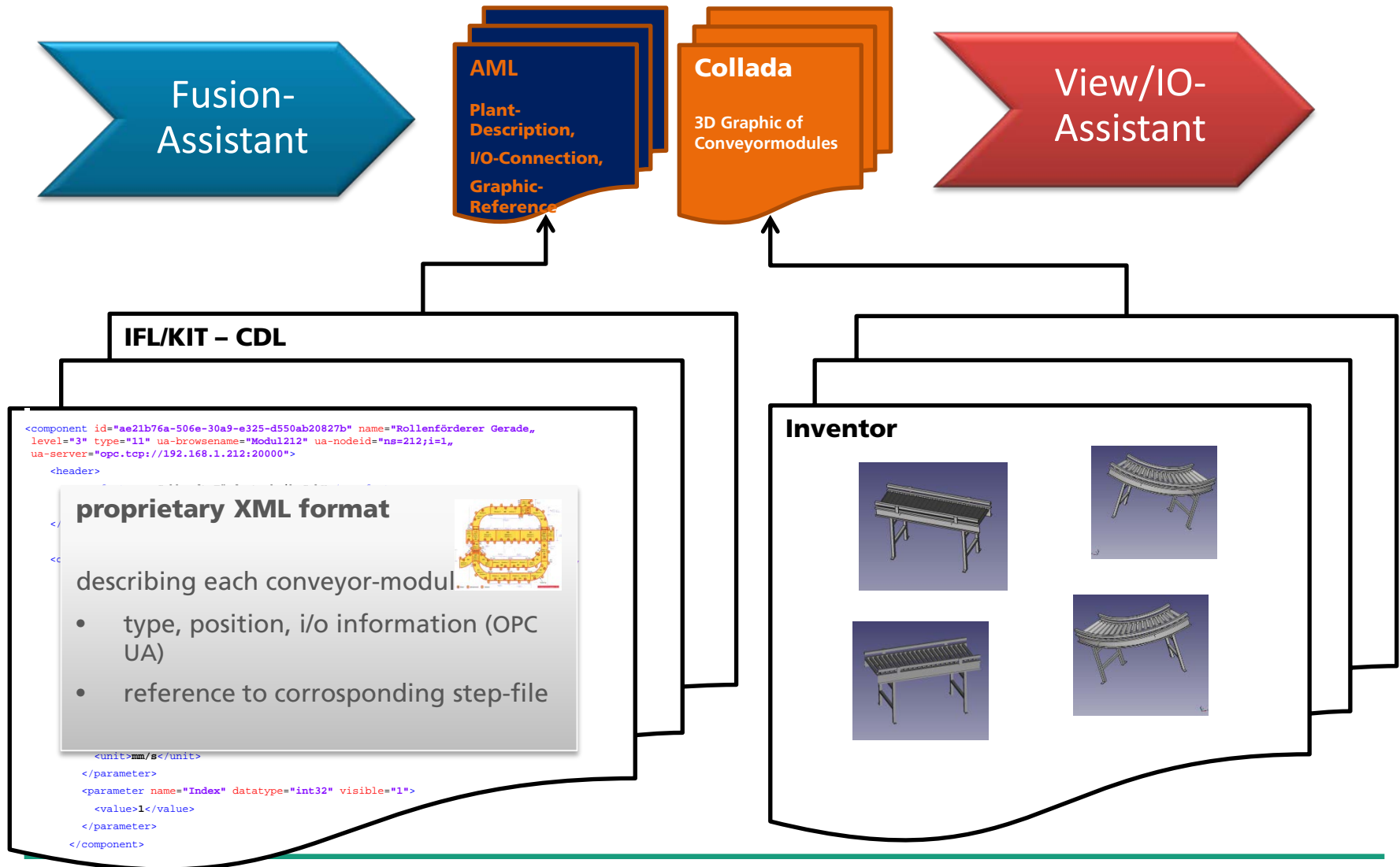


# Offline / project planning phase **3** **4**



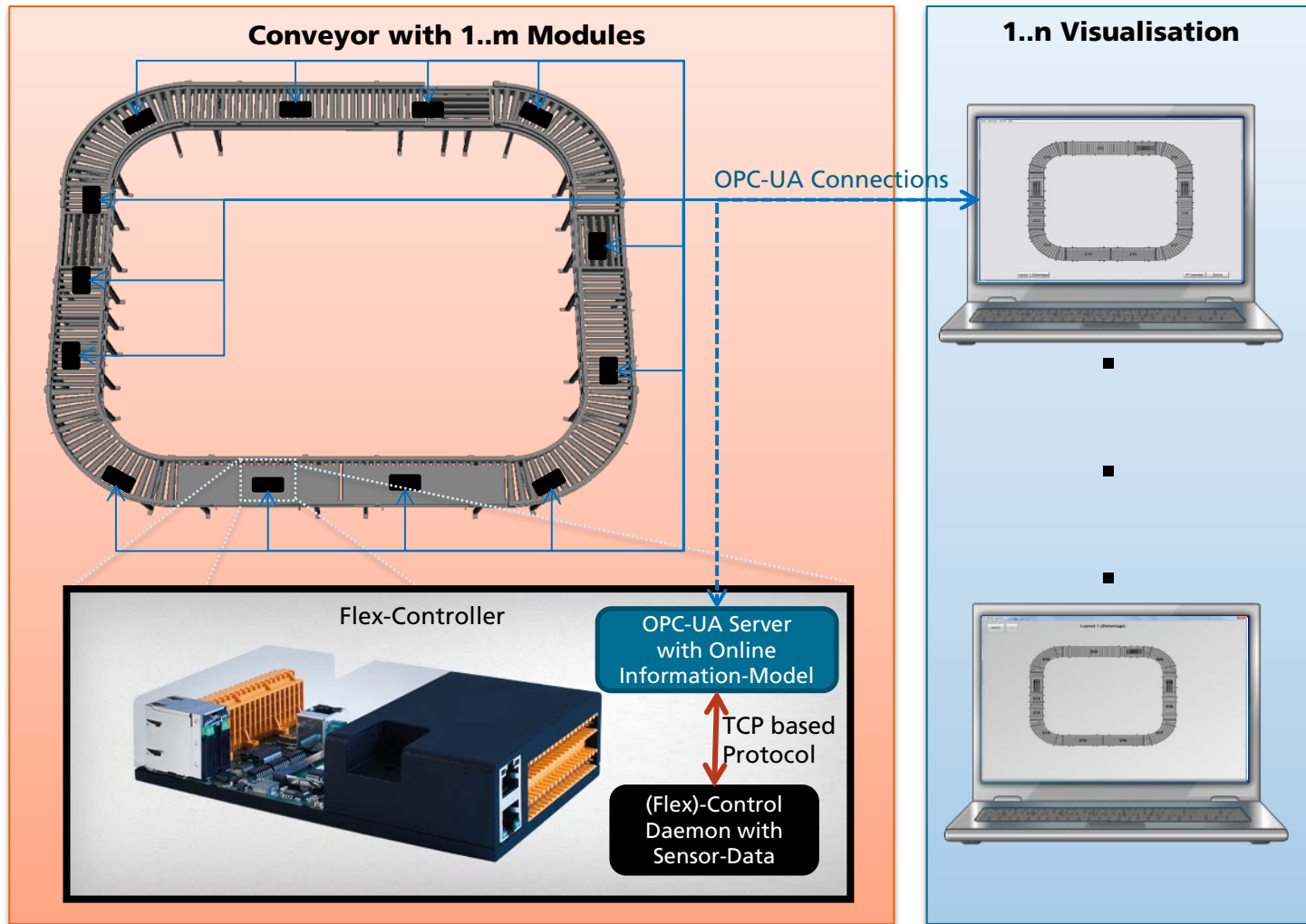
# Offline or project planning phase (Details)

3 4



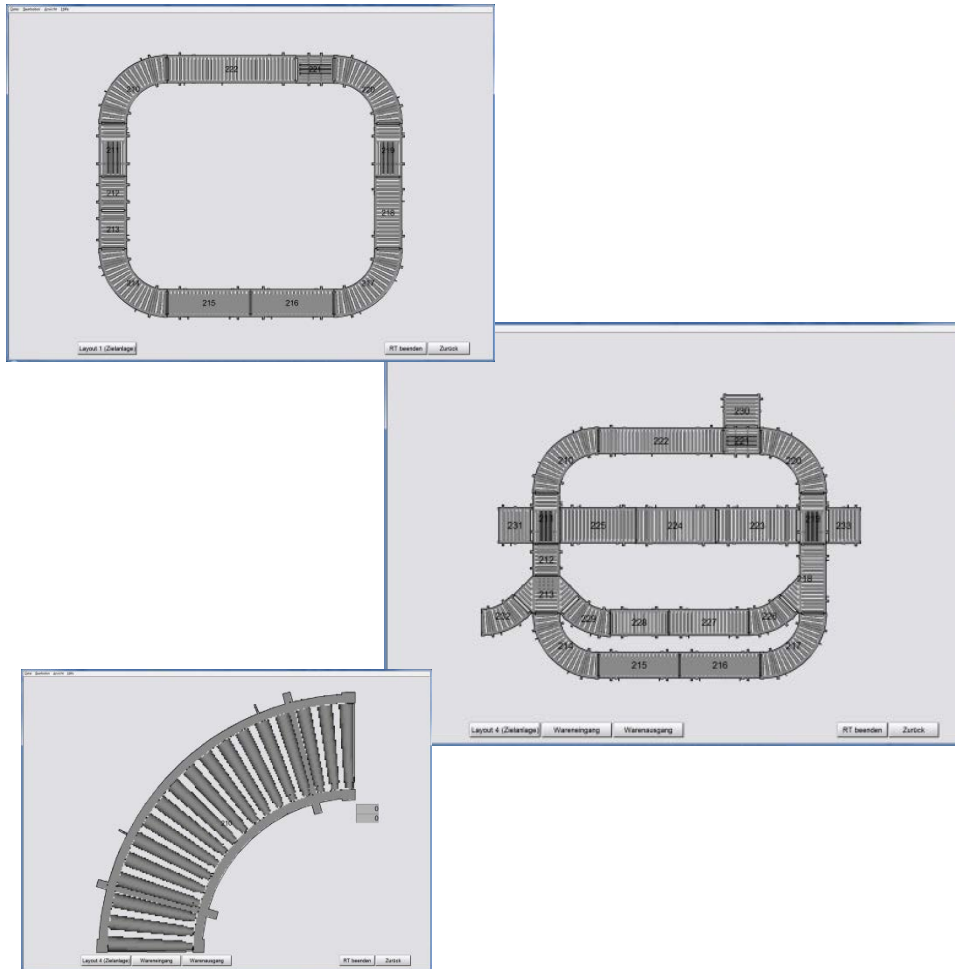
# Online or monitoring phase

5

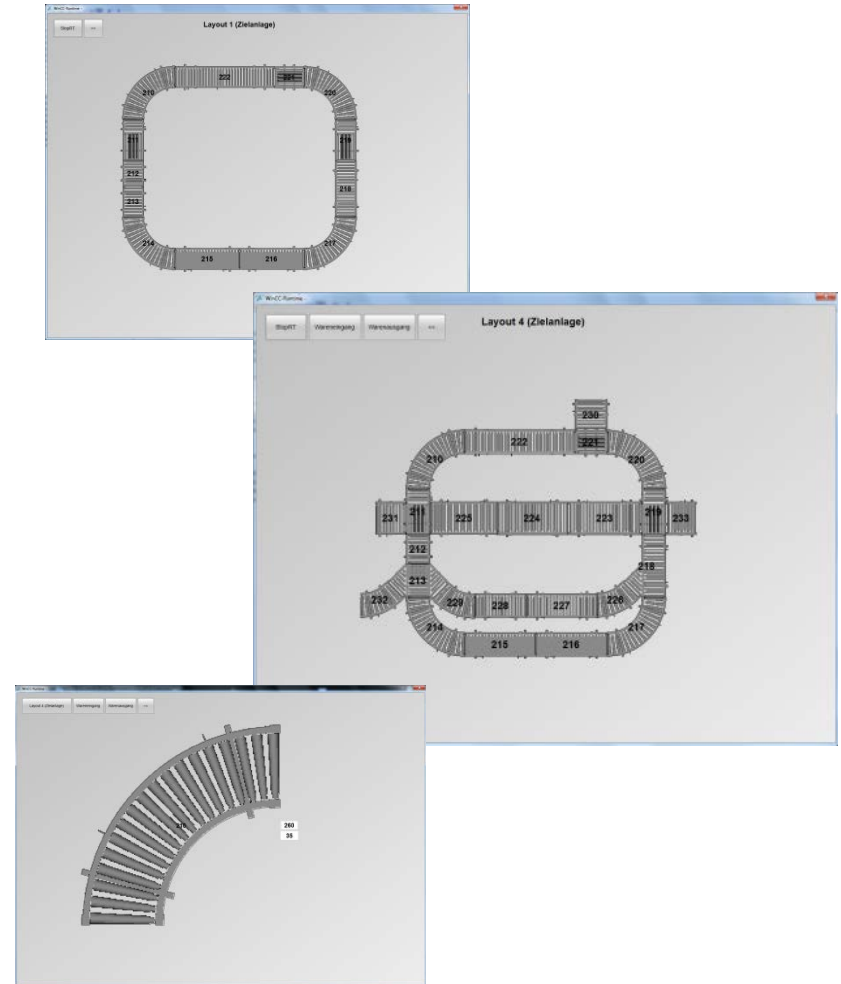


# Generated visualization

## ProVis.Visu®



## Siemens WinCC®



# Summary & Outlook

- Results of the PCFF project were shown
  - Automated framework for the unified generation of monitoring and control visualization in different end systems
- Framework bases on standards:
  - AutomationML (IEC 62714) to model plant planning data
  - OPC UA (IEC 62541) as communication and management standard
- Concept applicable/extendable
  - to other domains (due to standards) and
  - to other tools (due to simple PlugIn mechanism, tested for proprietary Gebhardt visualization)



# Thank you for the attention!



# Impressum

PCFF: Plug & Control for flexible transport equipment  
based on AutomationML

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