

Operations and Control Networks – Use Cases

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What is OCN?

Types of access interfaces involved are field-bus serial protocols such as Profinet, BACNet, Modbus, etc. More number of sensors are wireless radio based interfaces.

Sensors

- Sensors are field devices that read values related to a machinery (pressure, position, torsion), or environment (room temperature, humidity, etc.).

Actuators

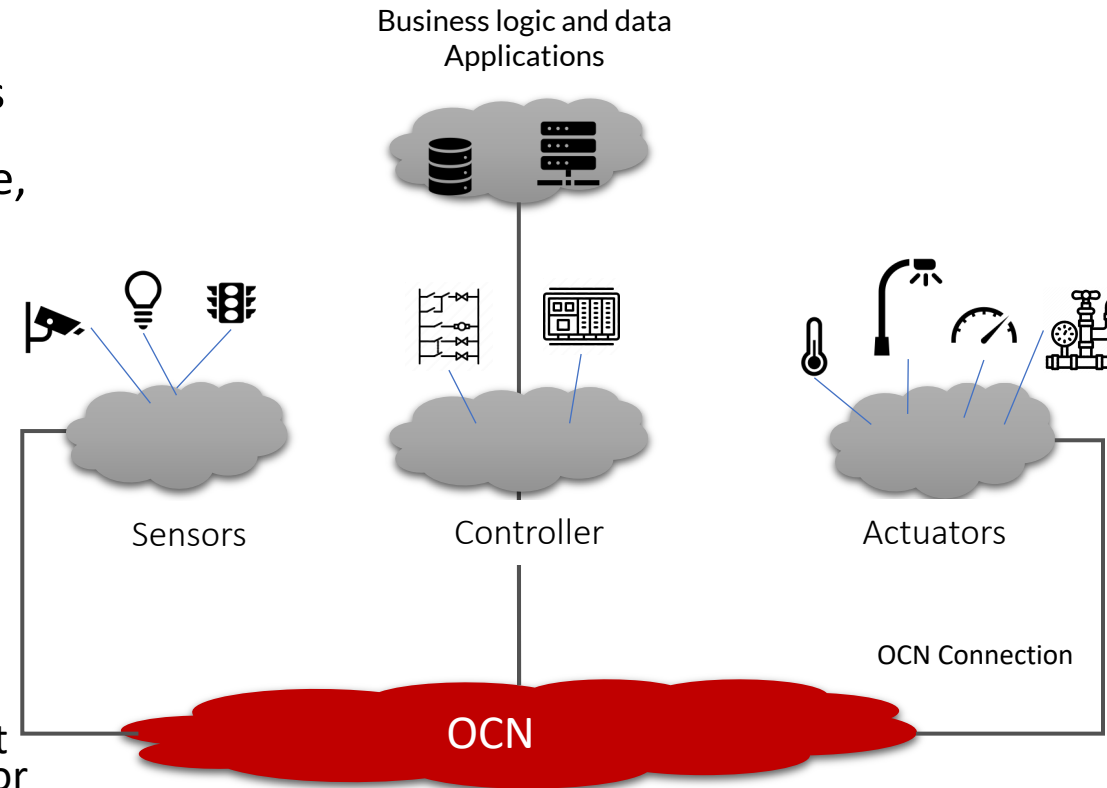
- Actuators are field devices that control parts of an equipment, causing them to move or adjust the equipment.

Controllers

- Logic controllers provide fieldbus interface to actuators and sensors
- Direct interface with high level applications and protects direct interaction between the devices and applications.

Application Networks

- Enterprise applications that interface with controllers for data collection and customization of processes.



Use Case Document

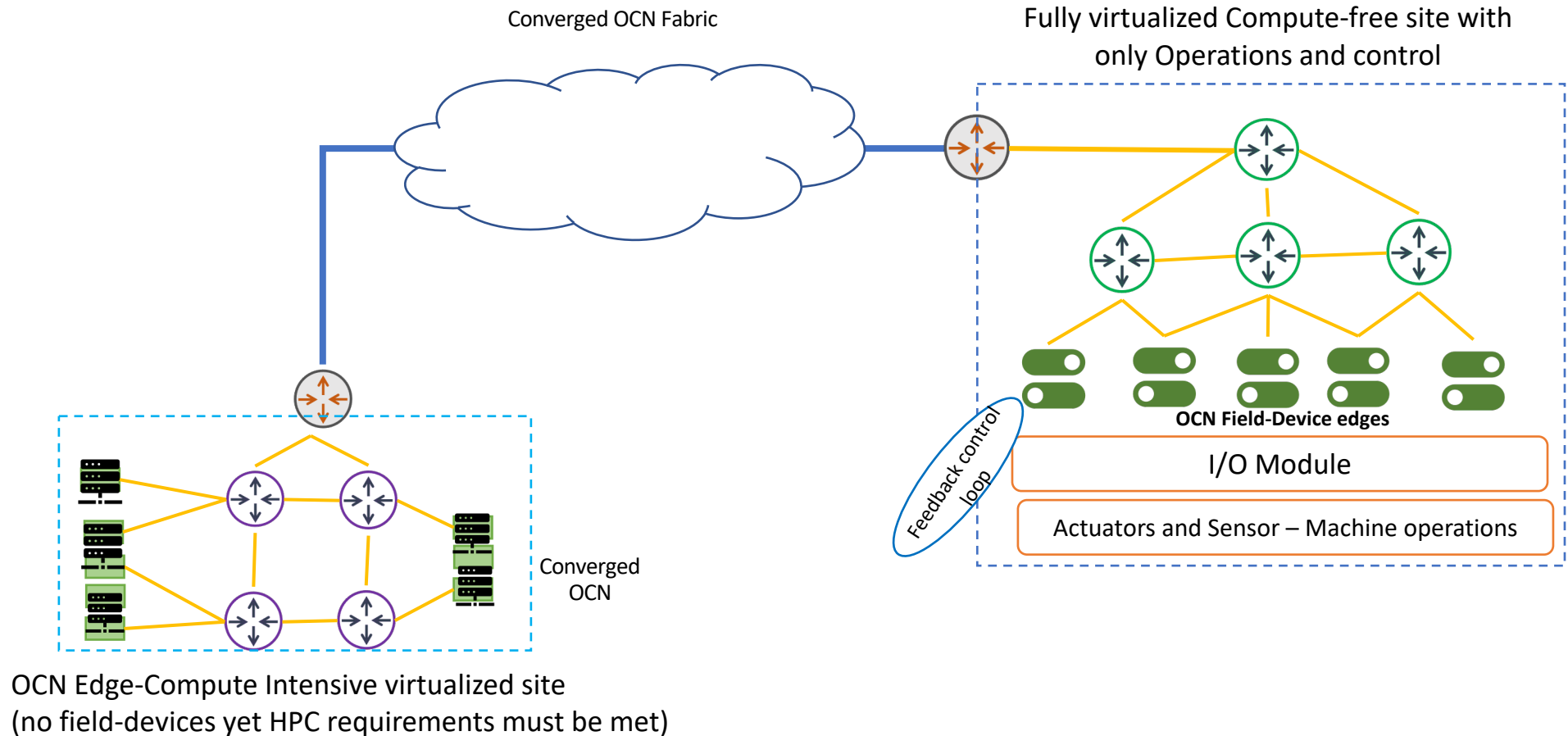
- Identify use cases to support:
 - More open architecture, using common standardized solutions
 - More scalable architecture, to scale up from local domain to multiple domains or wide area domains
 - More flexibility in organizing industrial networks
 - The use of IT in OT -> to speed up adoption of IT practices for network and software development
 - The convergence of protocols to unify the network; inter-operate; increase markets; etc.

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Use Case Draft

- Currently lists use cases
- Not exhaustive, just a starting point for discussion
- Focus on providing better guarantees at the network layer and on simplifying the industrial networks
 - Periodic sending of data
 - Precise delivery with short latency
- Different latency requirements for the different use cases
 - Use cases require periodic sending of data; data with precise delivery; data with window of arrival

IT/OT Converged Fabric with virtualized PLC



Call for contributions

- We need to refine these Use Cases
 - Identify, explain, provide context, prioritize
 - Draw requirements from them
 - What is needed to achieve the vision of a converged industrial network layer?
 - Gap analysis?
- Please provide feedback and we welcome involvement!

Thanks!

- Feedback at cedric.westphal@futurewei.com