

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. Many sensors are connected via wireless interfaces.

Sensors

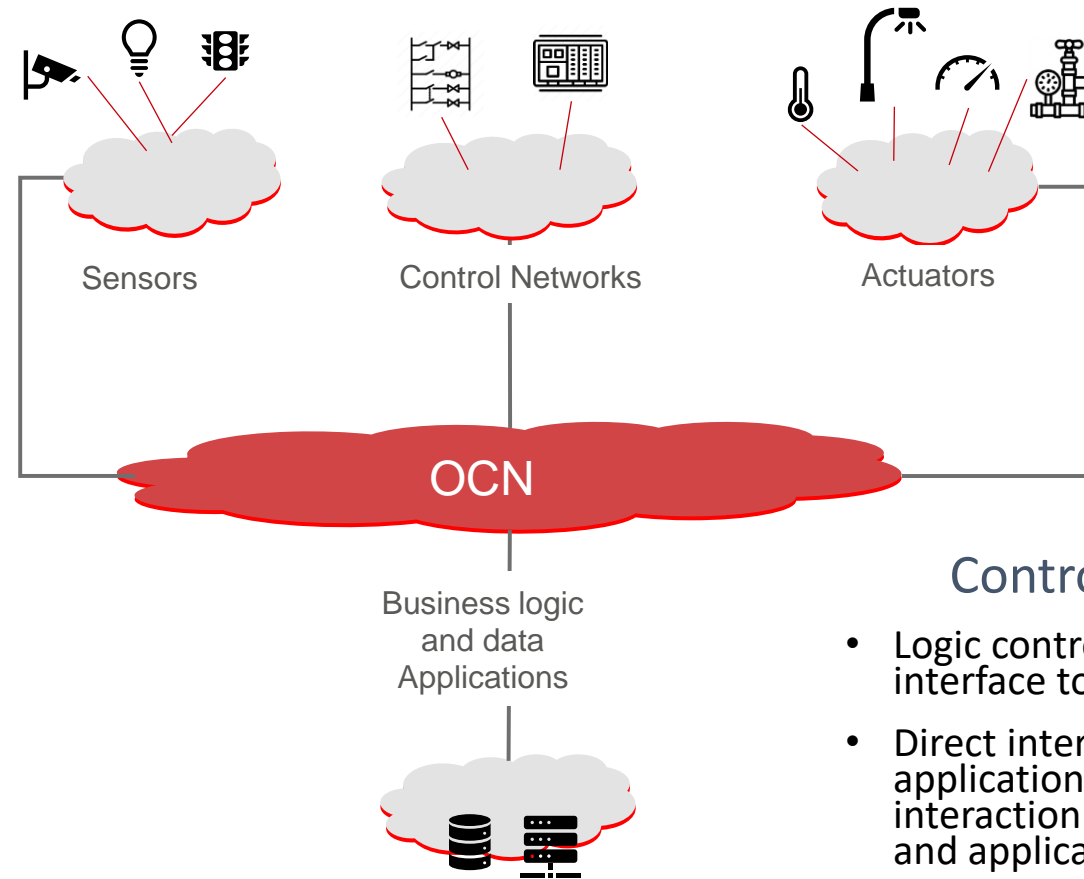
- Sensors are field devices that read values related to a machinery (pressure, position, torsion), or environment (room temperature, humidity, etc.).

Actuators

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

Application Networks

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



Controller accesses

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

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 convergence of IT and 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.

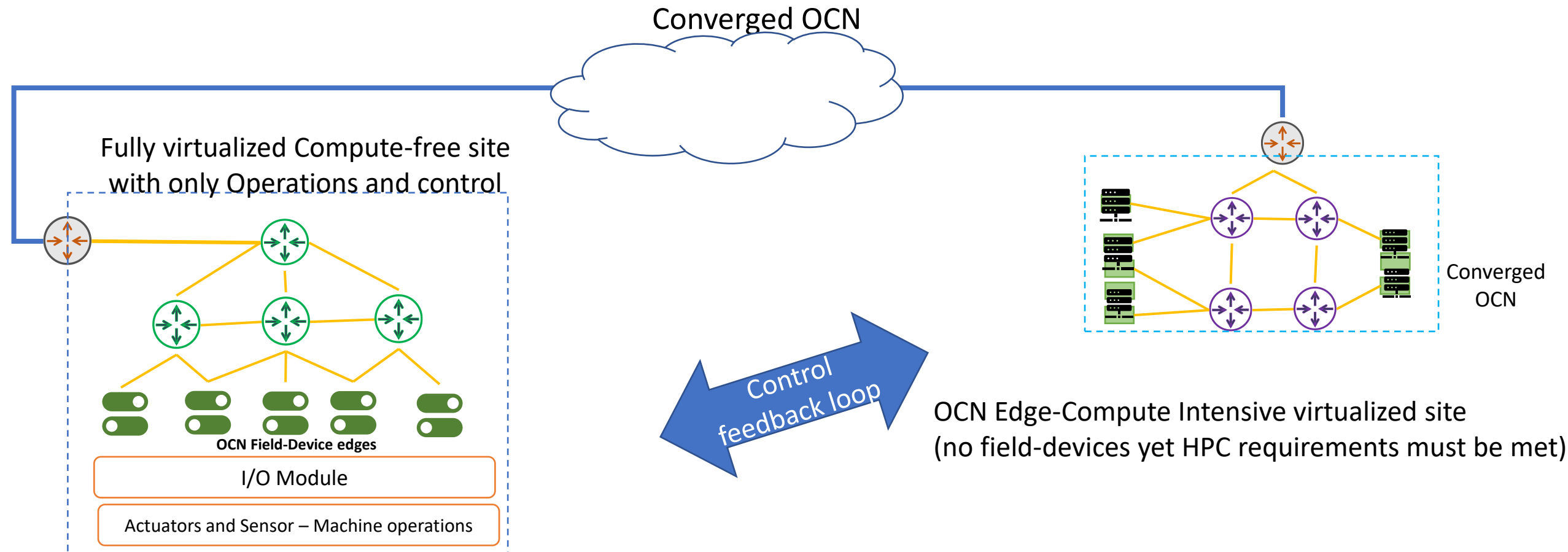
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Use Case Draft

- Currently lists eleven 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 OCN for remote operations



Call for contributions

- We need to refine these Use Cases
 - Identify, explain, provide context, prioritize
 - Use cases that are relevant to IETF -
 - 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

