

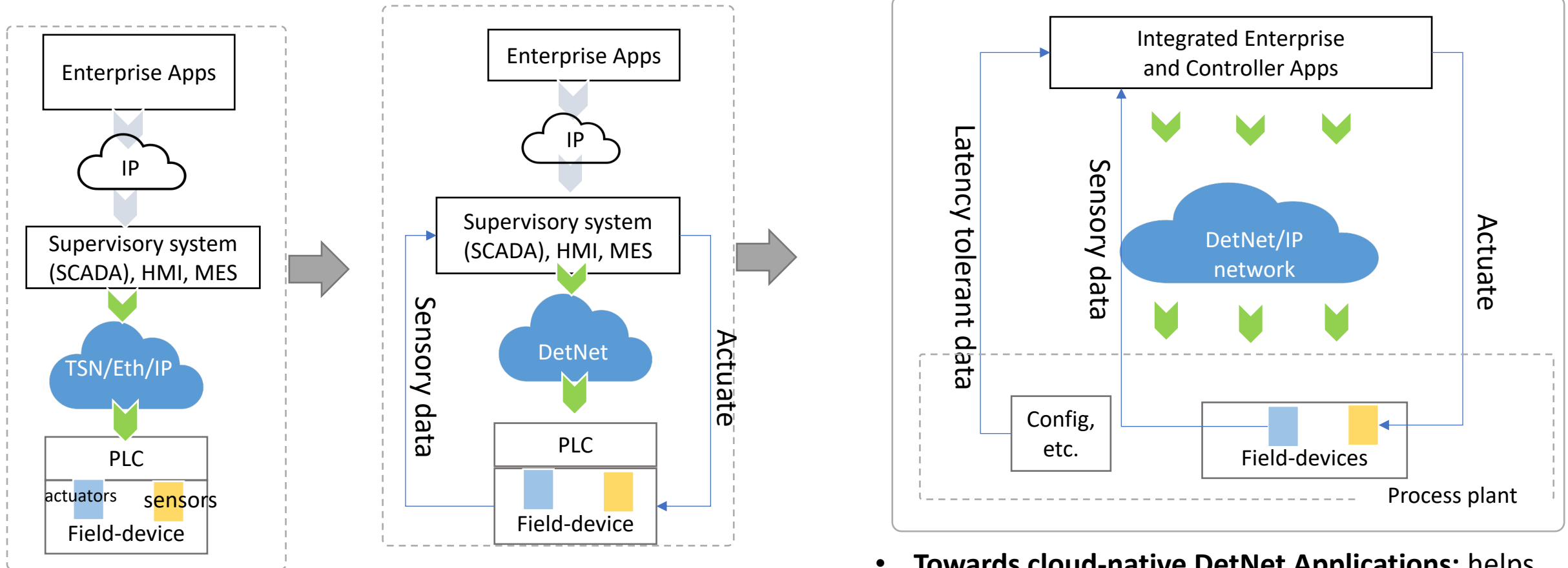
Using Deterministic Networks for Industry Operations and Control

Authors

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IETF 116 HotRFC

To enable Remote (cloud-ish) process automation using IETF's Deterministic Network Technology



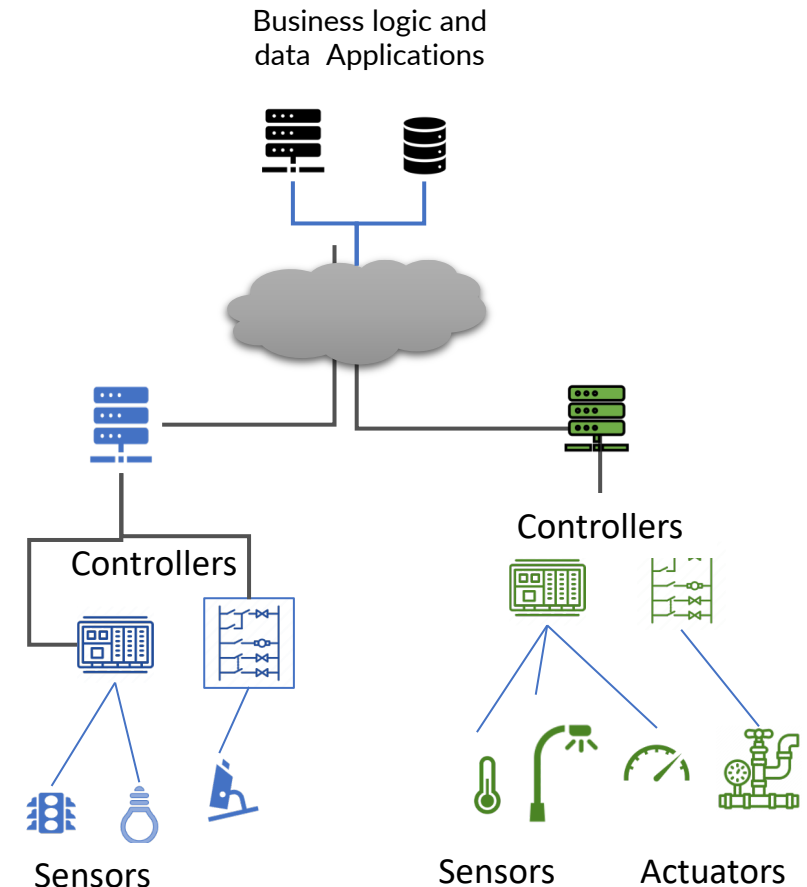
- **From L2 to L3:** DetNet helps with scalability by providing deterministic services over IP

- **Towards cloud-native DetNet Applications:** helps with simplification of process plant infrastructure.
- Advances applicability to broader set of use cases.

Process Automation in Industry Operations

Scenarios	<p>Smart Factories/manufacturing</p> <ul style="list-style-type: none">Running precision processes and operations on machines from remote locations <p>Energy grids</p> <ul style="list-style-type: none">Automatic monitoring of loads and fault and distribute power accordingly <p>5G URLLC applications needing cloud/edge-compute</p> <p>REMOTE-AUTAMTION IS NECESSARY FOR SEVERAL SITUATIONS</p>
GOAL	<p>To develop common interface for Remote Process Automation</p> <ul style="list-style-type: none">Provide interfaces from connected IoT devices to network for latency, reliability and resource sensitive applicationsIn particular leverage Deterministic Network technology.
Problem	<p>Observe that End-system (machine) side of DetNet is under-specified</p>

Crosses over multiple WGs relating to IoT
may find it interesting



Specific Problems to work on

- **Operator vs Application view**
 - How application can use Deterministic Networks
- **Practical mapping of flow specific traffic treatment**
 - Enabling commands-control loops over DetNet
- **Split Traffic flows**
 - Architectural consideration for end-to-end latency sensitive telemetry streaming
- **Variety of traffic patterns support for different {controller-field-device} pairs**
 - Different latency bounds, urgent/alarm messages, closed control loops (bi-directional latency bounds) – these are per packet constraints
 - Generally long-lived DetNet flow reservations only provides coarse-granularity.

Call for Collaboration and Feedback

Come to DetNet meeting to hear about our proposal.

If you are busy that day please ask questions or

- use detnet@ietf.org mailing list for discussion on the draft.
- Find me in the hallway during the breaks (in-person).
- or contact authors

Draft:

<https://datatracker.ietf.org/doc/draft-km-detnet-for-ocn/00/>

Presentation Slot:

To be presented as the last item in DETNET WG.

Thursday, March 30, 2023 - Session I

09:30-11:30 JST (00:30 – 02:30 UTC)

Room: 3F G303