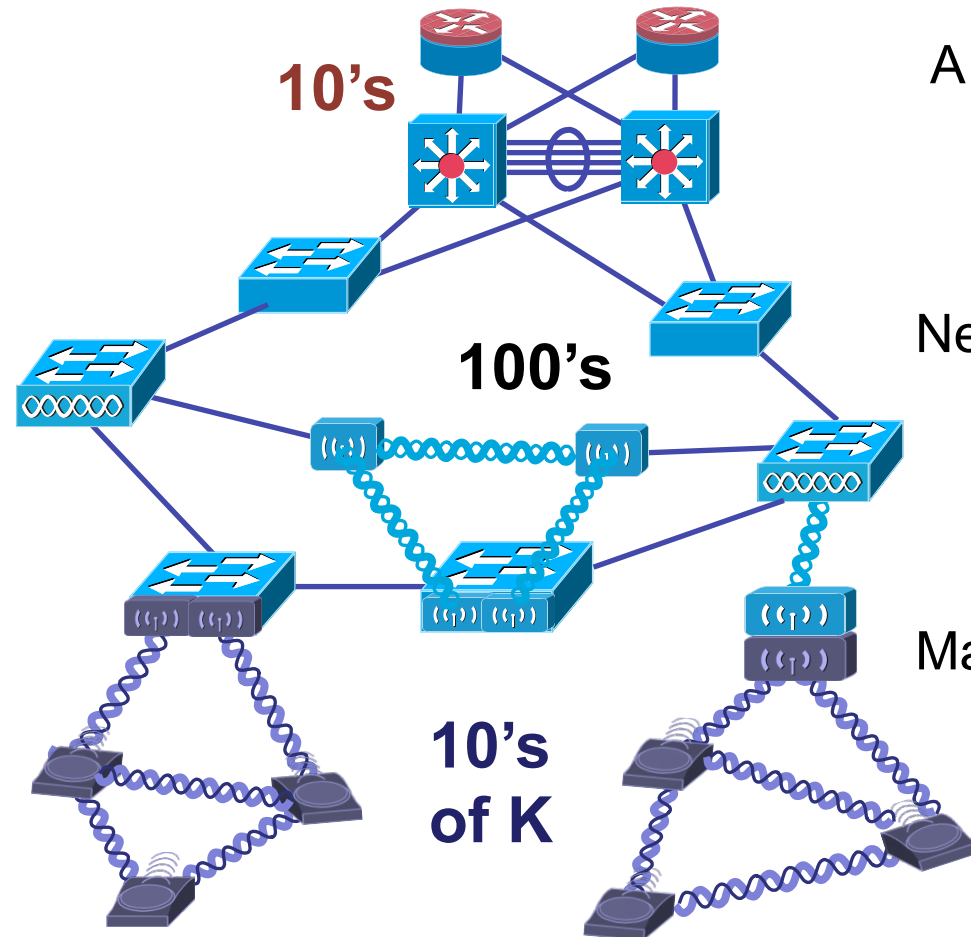




6TSCH BoF

Tuesday 15.20-16.50
Bellevue

IT/OT Network Convergence



A converged network **MUST** provide

- High availability, flow isolation, security
- Scalable, **IPv6**-based architecture
- Guaranteed bandwidth, Optimum Capacity

New, Higher-End paradigm

- Reaching more devices, farther, cheaper
- With better guarantees for critical apps
=> **delivery ratio, jitter, latency**
- Optimized power consumption in LLNs

Making Deterministic Happen

- Learn from Industrial, Air and Space
- Replicate and generalize with open standards
- Enable a Multitude of **new** IoT applications

Deterministic Networking



TDM + Synchronization + Slotframe(s)

Adapted to deterministic traffic (known a priori)

A time slot is a **unit of throughput** allocated to a deterministic flow (!= CSMA/CA)

Adapted to several isolated flows (Traffic Engineering)

Optimized path and track per single flow

Network synchronization and

Timely transmission

No hot potato forwarding / pile up

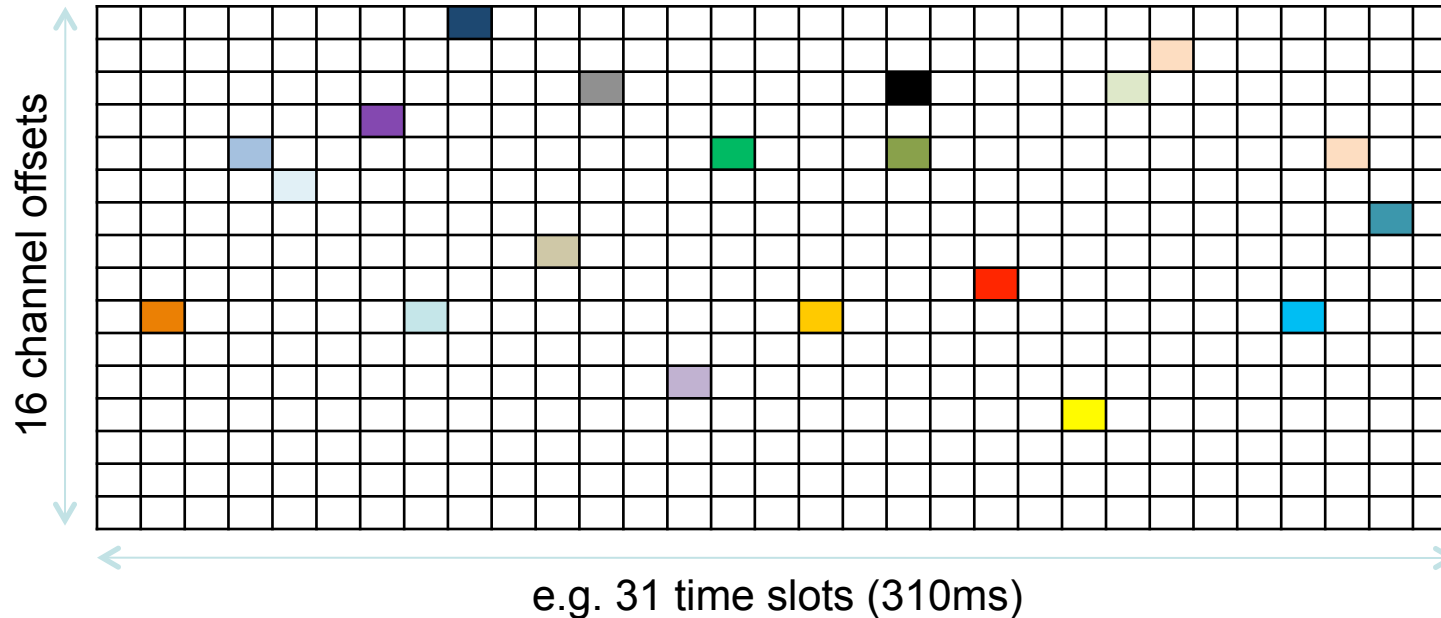
No exponential backoff

No collision and virtually no jitter

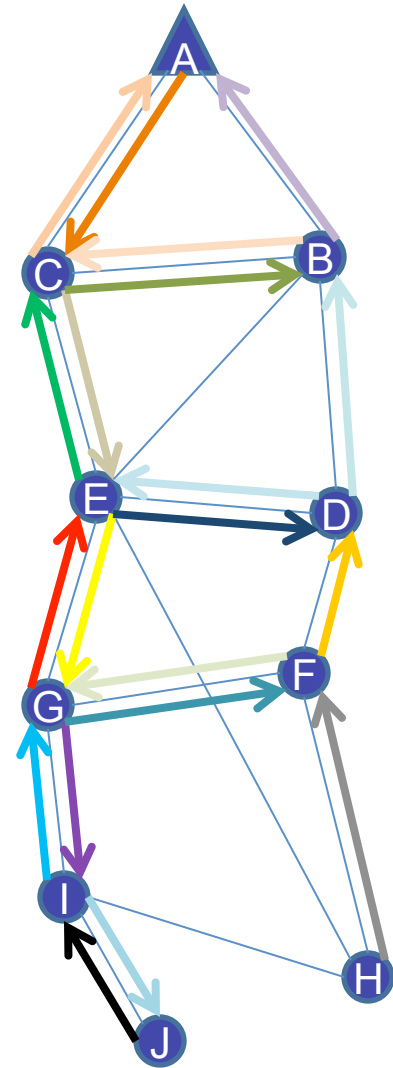


IEEE802.15.4e TSCH

- “Timeslotted Channel Hopping” mode
- Communication schedule allows for a direct **trade-off** between throughput, latency and power consumption.
- A **collision-free** communication schedule is typical.
- IEEE802.15.4e **published** April 2012.



IEEE802.15.4e TSCH defines how to **execute** a schedule, but not how to **build/maintain** it.



6TSCH Architecture

