

RAW use cases

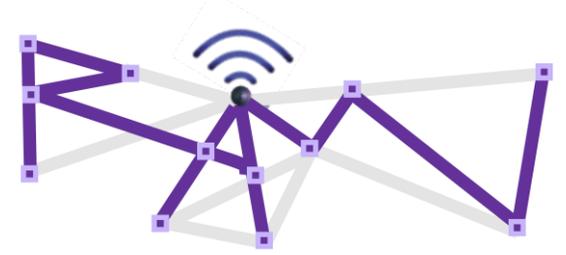
draft-bernardos-raw-use-cases-04

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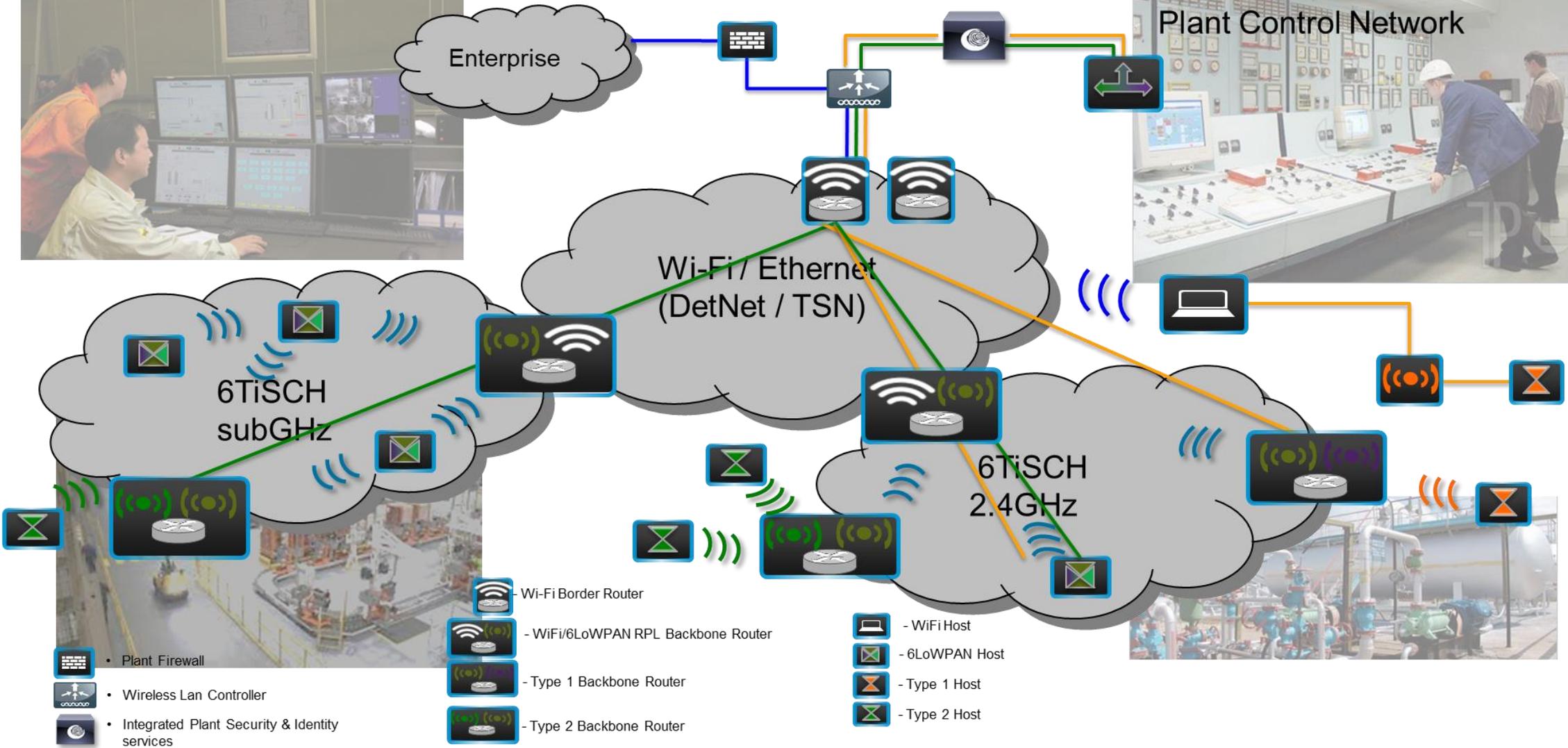
RAW - IETF 108

Use cases in the draft and Changelog



- Aeronautical Communications
 - Amusement Parks
 - **Wireless for Industrial Applications**
 - Pro Audio and Video
 - **Wireless gaming**
 - UAV platooning and control
 - Edge Robotics control
 - **Emergencies: Instrumented emergency vehicle**
- Focus of this presentation
(due to time constraints)
- New (added in -04)

Wireless for Industrial Apps.: Use Case Description

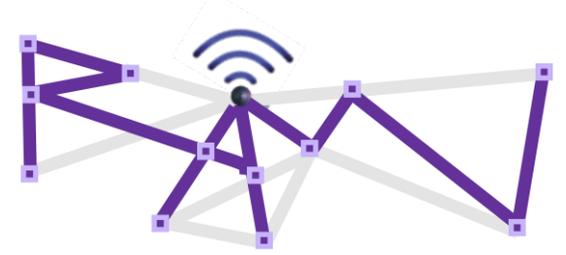


- Plant Firewall
- Wireless Lan Controller
- Integrated Plant Security & Identity services

- Wi-Fi Border Router
- WiFi/6LoWPAN RPL Backbone Router
- Type 1 Backbone Router
- Type 2 Backbone Router

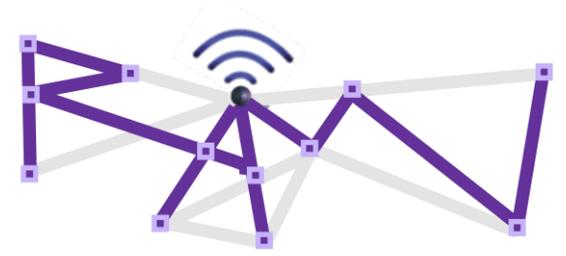
- WiFi Host
- 6LoWPAN Host
- Type 1 Host
- Type 2 Host

Wireless for Industrial Apps.: Specifics



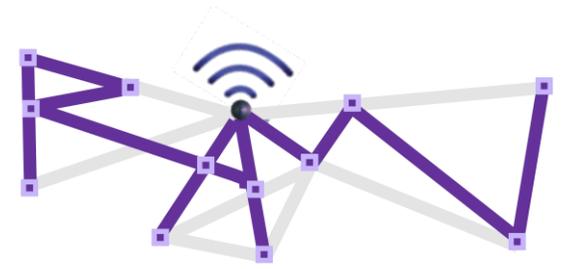
- **Heterogeneous** technologies (mostly wireless)
- **Multiple** simultaneous links
- **Variable** link conditions (even with low mobility)
- **Different** needs/traffic types, e.g.:
 - Control loops: reliability is key
 - Monitoring and diagnostics: should not be mixed with previous

Wireless for Industrial Apps.: Requirements for RAW



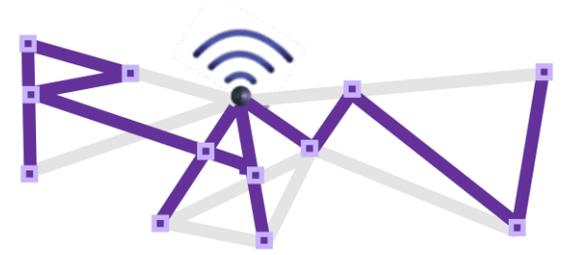
- Solutions should be backwards compatible
 - Capable of transporting both regular (multiplexed) flows and flows requiring predictable behavior
- Solutions should be able to work over multiple wireless access technologies
 - E.g., segment such as TSCH and a backbone segment such as Ethernet or WI-Fi

Wireless gaming: Use Case Description



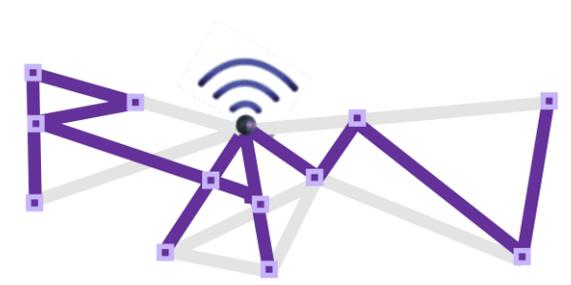
- The gaming industry includes 3 different scenarios:
 - Real-time Mobile Gaming, very sensitive to network latency and stability
 - **Wireless Console Gaming**, requiring low latency and jitter
 - Cloud Gaming, requiring low latency

Wireless gaming: Specifics



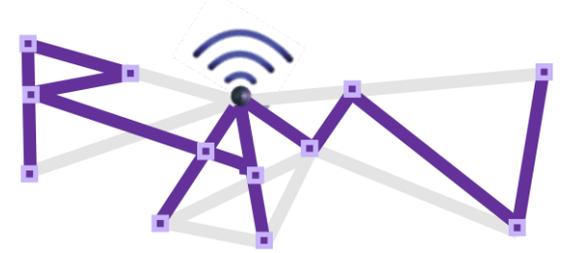
- Intra BSS latency: less than 5 ms
- Jitter variance: less than 2 ms
- Packet loss: less than 0.1%

Wireless gaming: Requirements for RAW



- Time sensitive networking extensions, such as time-aware shaping and redundancy to address congestion and reliability problems
- Priority tagging (stream identification) to support differentiation of time-sensitive packets from other BE traffic
- Time-aware shaping, as defined in IEEE 802.1Qbv
- Dual/multiple link, to improve latency stability
- Admission control

Summary and next steps



- Different **use cases** do need wireless connectivity for various purposes **demanding reliable and available wireless** behavior
 - 8 use cases already included in the draft
 - Others: smart grid...
- Call for WG adoption after IETF107 with positive support
 - Submit as draft-ietf-raw-use-cases-00?
 - Document additional use cases?
 - Continue with the characterization of use cases in terms of requirements, collaborating with draft-ietf-raw-architecture