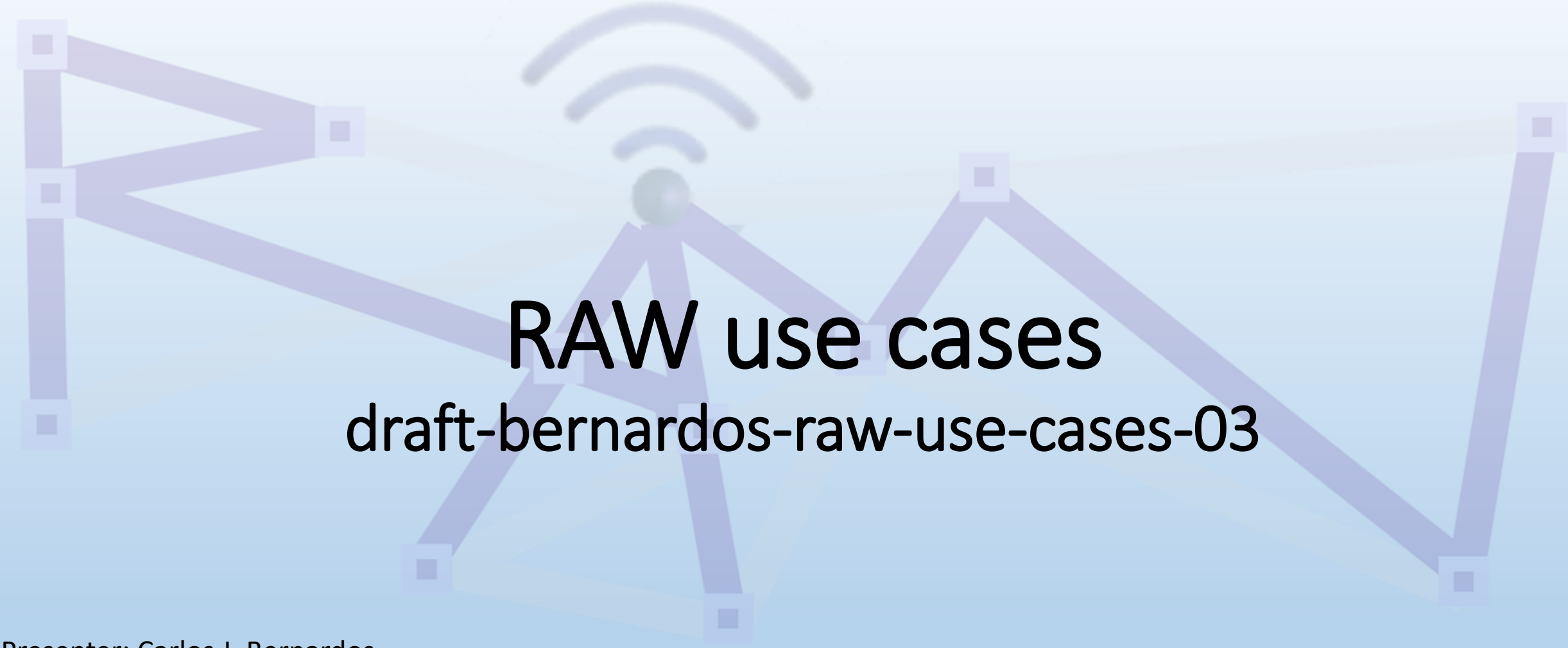


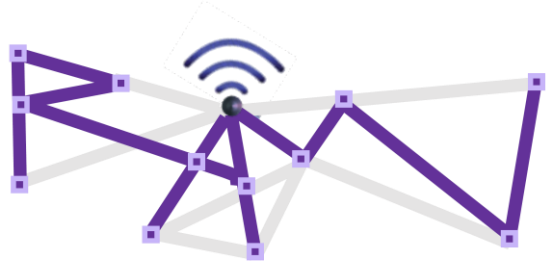
RAW use cases

draft-bernardos-raw-use-cases-03

Presenter: Carlos J. Bernardos

Authors: G. Papadopoulos, P. Thubert, F. Theoleyre, CJ. Bernardos

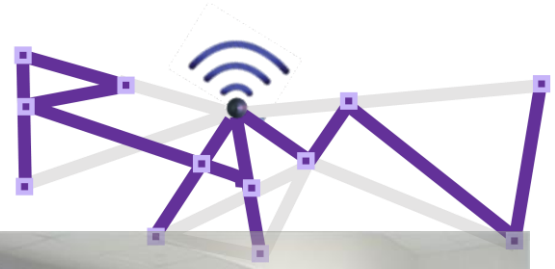
Use cases in the draft



- Aeronautical Communications
- Amusement Parks
- Wireless for Industrial Applications
- Pro Audio and Video
- Wireless gaming
- UAV platooning and control
- Edge Robotics control

Focus of this presentation
(due to time constraints)

Wireless for Industrial Apps.:
Use Case Description



Enterprise

Wi-Fi / Ethernet
(DetNet / TSN)

6TiSCH
subGHz

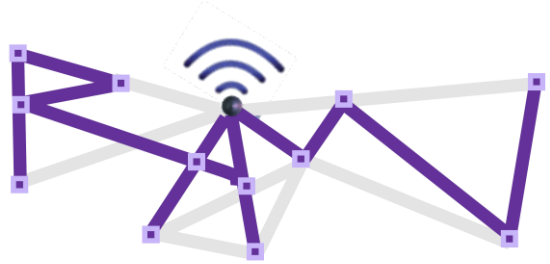
6TiSCH
2.4GHz

- 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

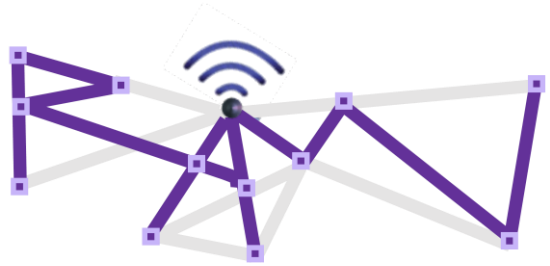
- WiFi Host
- 6LoWPAN Host
- Type 1 Host
- Type 2 Host

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

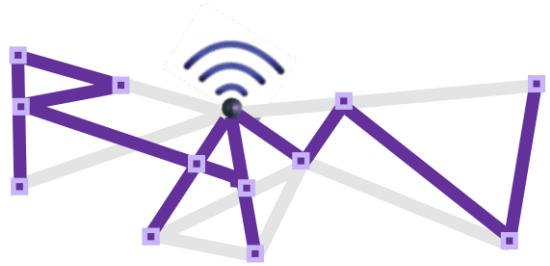
Wireless for Industrial Apps.: Requirements for RAW



- Solutions should be backwards compatible
  - Capable of transporting both regular (multiplexed) flows and flows requiring predictable behavior

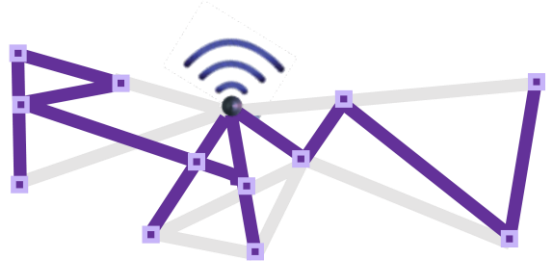
- Solutions should be able to work over multiple wireless access technologies
  - E.g., segment such as TSCH and a backbone segment such as Ethernet or WI-Fi

Wireless gaming:
Use Case Description



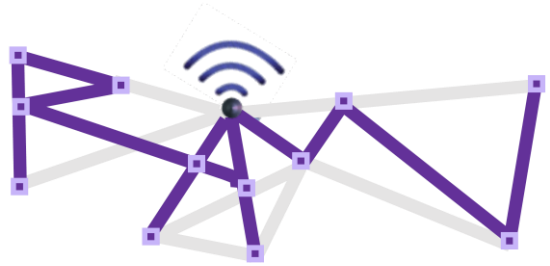
- The gaming industry includes 3 different scenarios:
  - Real-time Mobile Gaming, very sensitive to network latency and stability
  - **Wireless Console Gaming**, requiring low latency and jitter
  - Cloud Gaming, requiring low latency

Wireless gaming:
Specifics



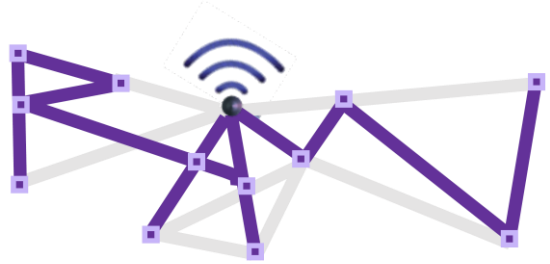
- Intra BSS latency: less than 5 ms
- Jitter variance: less than 2 ms
- Packet loss: less than 0.1%

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
  - 7 use cases already included in the draft
  - Others: smart grid…

- Next steps:
  - Document additional use cases?
  - Continue with the characterization of use cases in terms of requirements
  - Adopt as WG document?