NGFI Enhancement

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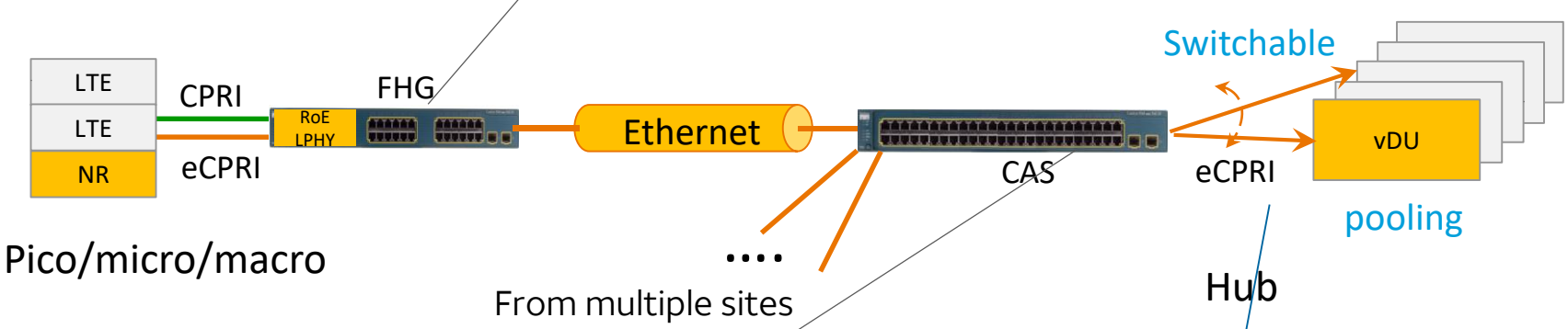
Background

- IEEE 1914.1 NGFI R1 spec is approaching to completion
- Is there any needs or what we do for next phase (R2) effort?
- NGFI R1 spec has focused on high level specification of transport network architecture, deployment model, and requirements under consideration of various function split options.
- The R2 effort, if there is any, is proposed to enhance the usefulness of the spec in practical deployment, by:
  - Further detailing and enhancing the architecture and requirement specifications
  - Provide recommendation to some transport solutions & profiles

Enhancement Topics for Discussion

- Transport Architecture to support
  - Fronthaul Gateway
  - RAN processing offloaded into transport Nodes (LPHY, Frequency Domain)
  - Support of BBU resource sharing/pooling/load balance
  - MEC
  - Inter Node Transport (X2/E1)
  - Transport for disaggregated architecture (control plane vs us plane)
  - NSA vs SA
  - LTE & NR coexistence and migration
  - Protocol stack: Ethernet layer vs IP layer
  - Non-ideal fronthaul: PON/DOCSIS
- Transport Performance
  - Statistical Multiplexing/Over subscription
  - Frame loss categories
  - Frame variation categories
  - Resilience/Redundancy/Reliability

Example of Transport Deployment Architecture



Enhancement Topics for Discussion

- OAM
  - Fronthaul specific OAM architecture
  - Configuration & management of the transport specific functions:
    - Network slicing
    - Time Sensitive Network
    - RoE/LPHY
    - CPRI/eCPRI
    - TSN
  - Recommendation of Transport specific YANG models for the above
- Security
  - IP sec vs Mac sec, key delivery
  - what traffic to protect?
  - Hub-hub vs end-end encryption
- Network slicing
  - Recommendation of the network technologies for traffic distinction and isolation
  - ….
- Fronthaul deployment related issues
  - RoE interoperability
  - Fiber Optics profiles

The way forward

How to cover the aforementioned topics (if some of them being decided important for ongoing 1914 future effort),

- What changes are needed in the 1914.1 PAR ?
- Or some of them can be part of 1914.3 extension topic ?
- Or should a new sub-work group (such as .x) be created?