LightReading press releases

1. IEEE 1914.1 progresses on preparing Next Generation Fronthaul Interface - NGFI(xhaul) standard

IEEE 1914.1 Task Force is about to prepare a D1.0 – first complete version of a Standard for Packet-based Fronthaul Transport Networks, that will then proceed through revisions within IEEE 1914 Next Generation fronthaul Interface – NGFI (xhaul) Working Group.

On the road towards future 5G networks, it is clear that an efficient transport network is necessary and traditional fronthaul solutions are not suitable for 5G evolution. The current mobile networks are comprised of multiple separate network domains. This creates serious challenges for network operators, such as low scalability, inflexible management and control solutions, slow and difficult upgrades, poor resource utilization, and high cost. This project was started to facilitate the implementation of key 5G technologies especially Cloud-RAN and Massive multiple-input-multiple-output (MIMO) from fronthaul networking perspective, and describe the required networking architecture to enable migration to 5G and C-RAN/V-RAN solutions.

Major outcomes of a work that started in 2015 cover:

1) Definition of network architecture and deployment scenarios
2) Specification of Classes of Service
3) Throughput analysis for 3GPP functional splits
4) Network slicing framework definition
5) Synchronization requirements analysis as well as synchronization distribution scenarios
6) Operation, Administration and Maintenance (OAM) requirements

Placeholder: “”, said Name Surname, job title, company.

“We consider NGFI working group as a place where experts on fronthaul can jointly define future xhaul networks. It is important to bring together mobile network operators and telecom vendors to evaluate requirements and solutions for fronthaul or xhaul networks. Ethernet is indeed a transport solution that can optimize fronthaul deployments”, said Aleksandra Checko, Project Manager and Sr Systems Engineer from MTI Radiocomp, currently serving as an editor of IEEE 1914.1 standard.

2. IEEE 1914.3 Radio over Ethernet standard passes Sponsor Ballot (target release March 5th, 2018)

Last week IEEE 1914.3 Radio over Ethernet (RoE) standard passed Sponsor Group ballot. It is an important milestone within third (last) phase of standards development within IEEE.

The disaggregation of mobile Radio Access Networks is critical towards efficiently supporting 5G deployments in architectures like Cloud RAN or Virtualized RAN. Using various functional splits, as per e.g. 3GPP TR 38.801 fronthaul throughput can be optimized.

RoE standard specifies Encapsulations and Mappings of IQ data into Ethernet packets. It enables transporting mobile networks data across various functional splits.

RoE standard enables the transfer of In-phase Quadrature (IQ) user-plane data, vendor specific data, and control and management (C&M) information channels across an Ethernet-based packet-switched network. The standard fosters interoperability among implementations by defining framing, the encapsulation of the information, and a common Ethernet Type for Radio over Ethernet (RoE) purposes

Specifically, the following mappers are specified:

- Native IQ (in time and frequency domain, optimized for 5G)
- Structure-aware encapsulation (with knowledge of higher layer, optimized for CPRI-like traffic)
- Structure-agnostic encapsulation (with no knowledge of higher layer)

Placeholder: “”, said Name Surname, job title, company.

“We at MTI Radiocomp are privileged to collaborate on RoE with major telecom operators, equipment vendors and research institutions since 2015. We see a flexible, optimized fronthaul as an integral part of innovative 5G networks.” said Aleksandra Checko, Project Manager and Sr Systems Engineer from MTI.

Placeholder, maybe about interoperability? “”, said Name Surname, job title, company.

Work on standard was initiated in 2014. The standard is on track to proceed through IEEE approval towards having an approved standard in 2018.

(Optional: Figure of standard development flow, like: http://grouper.ieee.org/groups/1904/meeting_archive/2015/12/anwg_1512_opening.pdf)