

Qualcomm

3GPP RAN #81

Sep 10-13, 2018

Gold Coast, Australia

RP-181715

The scope of release-16 SI on NR Industrial IoT (RAN2)

A scenic view of a city skyline at sunset over a body of water. The sky is filled with vibrant orange and purple clouds. In the foreground, there are large, dark rocks covered in green moss. A pier with a pavilion extends into the water on the right side. The city skyline is visible in the background, with several tall buildings.

Ethernet Header Format and Payload Size

- Ethernet MAC header (without VLAN) shown below, with size in Bytes. Total size 14 bytes



- Ethernet payload size for industrial applications are described by SA1
 - Section 8.1.2, 22.804v2.0.0 refers to payload size **20-40** bytes
- Given fields are static and typical packet size is small, gains from compression can be significant !
- There is no readily available Ethernet header compression profile (e.g. RoHC), because Ethernet is typically carried natively over Ethernet link-layer (802.3)
 - When carrying Ethernet over 5G link-layer, there is potential benefit in header compression

RAN 2 Proposed Next Steps

- Study Item on Industrial IoT (RP-181479) includes following objective:

Time Sensitive Networking (RAN2/RAN3) with the following study areas:

- Accurate reference timing: Delivery & related process (Proposals include: SIB delivery or RRC delivery to UEs, Multiple Transmission points, ...)
- Scheduling enhancements / traffic patterns / QoS for wireless Ethernet, Enhancements to support of cyclic traffic
- Ethernet header compression (with defining new ROHC Profile). Note. RAN2 work and detailed objectives for header compression to be refined in RAN#81

- **Proposal: Remove the note regarding Ethernet header compression, and include RAN2 study of header compression benefits and solution options**
 - Study options for creating a header compression scheme for Ethernet, including the option of creating a new profile under the RoHC framework