

Title: LS on RoHC utilization for Ethernet header compression
Response to: -
Release: Release 16
Work Item: FS_NR_IOT

Source: 3GPP RAN WG2
To: IETF, IEEE 802
Cc: 3GPP TSG RAN

Contact Person:

Name: Dawid KOZIOL
E-mail Address: dawid.koziol@nokia.com

Send any reply LS to: 3GPP Liaisons Coordinator, <mailto:3GPP Liaison@etsi.org>

Attachments: RP-182090

1. Overall Description:

3GPP RAN Work Groups are at the moment performing a study on RAN support for Industrial Internet of Things, objectives of which are described in RP-182090, as attached. One of the goals of the study is to analyse potential enhancements for more efficient Time Sensitive Networks (TSN) support over 5G/NR system and one of the studied features is Ethernet header compression:

- | |
|---|
| <ul style="list-style-type: none">c) Ethernet header compression (RAN2):<ul style="list-style-type: none">i) Analysis of the benefits and the scenario (e.g. what are the formats and size of Ethernet frame to be considered, are VLAN fields included, protocol termination etc.).ii) Definition of the requirements for a new header compression. |
|---|

RAN2 WG has discussed the above topic and the result has been captured in the Text Proposal intended for Technical Report of the 3GPP Study Item on NR Industrial IoT. Since RoHC is a well-established standard for header compression of VoIP packets in 3GPP, one of the considered options is to reuse it also for Ethernet header compression on NR air interface. The related description from the attached Text Proposal is copied below for convenience:

<p>ROHC-based solution</p>

<p>Ethernet header compression may build on the ROHC-framework, which is currently used for IP-header compression and applied on PDCP layer. A ROHC profile specific to the Ethernet header would need to be defined, meaning that the existing ROHC framework and features would be reused and do not need to be developed. R2-1817913 analyses the benefits of this approach. For example, robustness of compression against packet losses and in-built handling for multiple flows. On the other hand, ROHC profiles are defined by IETF for TCP/UDP/RTP/IP protocols, and Ethernet is defined by IEEE. It is unclear how 3GPP can define a new ROHC profile and if/how IETF/IEEE adopts such new ROHC profile. In addition, ROHC profile identifiers may need registration with IANA [ref]. Such collaboration/liaison with other standard bodies may add uncertainties and could delay the work completion.</p>
--

As can be seen, 3GPP RAN WG2 is not certain about the procedural aspects of defining a new RoHC profile for Ethernet header. Therefore, 3GPP RAN WG2 would like to ask IETF and IEEE the following questions:

Q1: Does IETF or IEEE have any concerns with 3GPP defining new RoHC profile for Ethernet header compression?

Q2: Does IEEE have any concern with 3GPP specifying a new Ethernet header compression algorithm?

Q3: In case 3GPP is allowed to develop RoHC profile for Ethernet header compression, does it have to be registered with IANA. If yes, how long can such process take?

Q4: According to IETF, what are the actions needed of 3GPP to specify and maintain a ROHC profile?

3GPP RAN WG2 would like to clarify that it intends to specify the new profile for its own purposes mainly, as described above, but would have nothing against IETF, IEEE or any another party using the profile, once it is defined. 3GPP RAN WG2 is open to collaboration with IETF/IEEE on new profile definition, but would like to indicate that the target completion date of the related work is end of 3GPP Rel-16, which is planned for Q1 of 2020.

2. Actions:

To IETF:

ACTION: RAN2 respectfully asks IETF to reply to questions 1, 3 and 4 above and provide any other guidance they see fit, if any.

To IEEE:

ACTION: RAN2 respectfully asks IEEE to reply to question 1 and 2 above and provide any other guidance they see fit, if any.

3. Date of Next TSG-RAN WG2 Meetings:

3GPP RAN2#105bis	08 - 12 Apr 2019	China
3GPP RAN2#106	13 - 17 May 2019	USA