

**Email discussion summary for [RAN-R18-WS-crossFunc-DENSO] - Version 0.0.2**  
**RAN**

**3GPP TSG RAN Rel-18 workshop RWS-210615**

**Electronic Meeting, June 28 - July 2, 2021**

**Agenda Item: 4.3**

**Source: DENSO CORPORATION**

**Title: Email discussion summary for [RAN-R18-WS-crossFunc-DENSO]**

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## 1 Introduction

This email discussion summary covers the following documents:

RWS-210296, "Rel-18 standardisation from automotive viewpoints"

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## 2 Comments to the Tdoc

### 2.1 1st round comments

#### Feedback Form 1: Comments to the Tdoc

<p><b>1 – ROBERT BOSCH GmbH</b></p>
<p>[Bosch] Uplink enhancements: As an automotive supplier, we share the interest of DENSO to have a QoS maintainability as much as possible.</p>
<p>-</p> <p>Question 1: do you support bearer establishment, QoS maintaining, etc. should be Functional safety/URLLC aware ?</p>
<p>-</p> <p>Question 2: for Multi-SIM enhancements: do you support DAS and Full-duplex-like capability in the vehicle-UE ?</p>
<p>-</p> <p>Question 3: for AI-based: do you support AI-based UE-centric functionality for, e.g., mobility enhancements ?</p>
<p><b>2 – Apple Benelux B.V.</b></p> <p>Can you elaborate on what is missing for "UE capability coordination across the two networks"?</p>

## 2.2 2nd round questions and comments

### Feedback Form 2: Questions and comments to the tdoc for the 2nd round

#### 1 – ROBERT BOSCH GmbH

Thank you for your reply. Regarding dual RX/TX UE for Multi-SIM. It seems here that the UE implementation will be able to handle Full-Duplex capability.

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However, do you think it is important that this capability is conveyed to the network?

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If yes, can you elaborate more about how this information is conveyed ? and what enhancement is needed?

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Whether the 2-Sim UE is allowed to join the same network with two different subscriptions ? does this make any difference in your opinion ?

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## 3 Questions to the Tdoc

### 3.1 1st round questions

## Feedback Form 3: Questions to the Tdoc

### 4 Answers by moderator

The answers to the 1st round of questions are provided below.

**Table 1: Moderator’s answers to the 1st round questions**

<p>[Bosch] Question 1: do you support bearer establishment, QoS maintaining, etc. should be Functional safety/URLLC aware ?</p>	<p>Even in the current specification, the network can establish a QoS flow for a specific service, e.g. URLLC, functional safety. Even in LTE/EPC, a different EPS/radio bearer can be established for a specific service. However, in practice, a typical deployment is that one (default) bearer is established for all services, apart from (emergency) voice/video. Automotive service providers have their own QoS policy to their services, whilst it is not reflected into the QoS handling managed by the network operator, unless the automotive service provider negotiates with operators in each region one by one. It is interesting to study if and how an automotive vehicle (as a UE) can reflect their own QoS policy to the 5G QoS model.</p>
<p>[Bosch] Question 2: for Multi-SIM enhancements: do you support DAS and Full-duplex-like capability in the vehicle-UE ?</p>	<p>For Rel-18, we propose to focus on dual Rx/Tx UE for multi-SIM enhancements. Eventually, it is possible that the UE can receive and transmit data simultaneously from/to two networks.</p>
<p>[Bosch] Question 3: for AI-based: do you support AI-based UE-centric functionality for, e.g., mobility enhancements ?</p>	<p>It could be one of the alternatives for AI-based optimisation. The cloud server has knowledge of traffic and mobility characteristics on automotive vehicles. Once an automotive vehicle set a route via the navigation system, the cloud server can provide assistance information to the vehicle, based on the analysis from the collected data. The vehicle could provide some of the assistance information to the network to optimise the service quality, e.g. mobility performance.</p>
<p>[Apple] Can you elaborate on what is missing for "UE capability coordination across the two networks"?</p>	<p>In case of dual Rx/Tx UE, the UE needs to split its own capability to receive and transmit data via the two networks. For instance, if the UE supports 5 CC CA, a question is how many CCs are used for Network A and Network B, respectively? The same question can be envisaged for the total number of Rx/Tx antennas supported by the UE.</p>

The answers to the 2nd round of questions are provided below.

**Table 2: Moderator's answers to the 2nd round questions**

<p>[BOSCH] Regarding dual RX/TX UE for Multi-SIM. It seems here that the UE implementation will be able to handle Full-Duplex capability. However, do you think it is important that this capability is conveyed to the network? If yes, can you elaborate more about how this information is conveyed ? and what enhancement is needed?</p>	<p>Yes, especially for the case where some of the UE capabilities need to be shared across the two networks. One intuitive example is power sharing like EN-DC/NE-DC in FR1. The details on how to do is to be discussed in the SI/WI phase.</p>
<p>[BOSCH] Whether the 2-Sim UE is allowed to join the same network with two different subscriptions ? does this make any difference in your opinion ?</p>	<p>The standard does not have to prevent the UE from accessing the same network via two SIMs simultaneously. Both options have pros and cons. In case of accessing two networks simultaneously, the reliability of data delivery can be enhanced, due to different coverage and quality between two networks. In contrast, coordination for simultaneous data delivery is not feasible between different networks (owned by different operators). In case of accessing the same network via two SIMs, coordination for simultaneous data delivery is feasible, whilst it is almost the same performance as provided by Dual Connectivity.</p>