[100b-e-NR-5G\_V2X\_NRSL-PHYstructure-04]

Email discussion/approval regarding SCI related

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   - A. Indication of MCS tables (if necessary) and MCS table determination

till 4/24, with potential TP till 4/29 – Jeongho (SS)

This document has the following question.

* A. How to indicate MCS table to be used for PSSCH?

# **A. How to indicate MCS table to be used for PSSCH?**

Based on the submitted contributions, there are the following alternatives and supporting companies.

* Alt A-1. Indication by 1st SCI, if more than one MCS tables are configured
	+ [Huawei, HiSilicon], [MediaTek], [LGE], [CATT], [CMCC], [InterDigital]
* Alt A-2. Only 1 table is configured per resource pool
	+ [ZTE, Sanechips]
* Alt A-3. Only 1 table is configured per resource pool. This can be overwritten by PC5-RRC.
	+ [Intel], [Apple], [NTT DCM]
* Alt A-4. Indication by 2nd SCI, if more than one MCS tables are configured
	+ [Futurewei], [Ericsson]

Based on the contributions, the following proposal can be made.

*Proposal 1. The MCS table is indicated by Indication by 1st SCI, if more than one MCS tables are configured (multiple MCS tables can be (pre-)configured per resource pool.*

Please share your views if Proposal 1 is agreeable or, if not, please share your views on the reason why it is not workable.

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| **Company** | **Views** |
| NTT DOCOMO | We are supportive of the proposal, if more than one MCS table are mandatory feature.Otherwise, i.e. if only one MCS table is mandatory feature, the mandated table is used for broadcast/groupcast. The remaining MCS tables are used for unicast only, where PC5-RRC message is exchanged. Traffic type and channel condition at the link will not be changed dynamically; hence Alt A-3 is sufficient in this case. |
| Huawei, HiSilicon | YesIndication of MCS table by 1st-stage SCI allows MCS table changes for groupcast in addition to unicast (PC-5 RRC is applicable for unicast only). PT-RS is determined based on MCS, and indication of MCS table in 2nd-stage SCI does not seem to work, unless a further elaborate scheme to enable it is envisioned. |
| CMCC | We agree with the proposal.In our view, allowing to (pre)-configure multiple MCS tables per resource pool is beneficial to support different services and to improve resource utilization, and the MCS table used by a Tx UE for a certain PSSCH transmission can be indicated in the SCI. Since the 5bit MCS index is carried in the 1st SCI, we think it is straightforward to also indicate the MCS table in the 1st SCI. |
| Intel | We disagree with the proposal.We don’t see why it is necessary to have multiple MCS tables configured for the broadcast case. Especially, since some tables contain entries that are not mandatory to support by UE. |
| Apple | Not agree. We think a single MCS table (i.e., legacy 64QAM MCS table) is (pre)configured per resource pool. Hence, no need to increase L1 signaling overhead. The support of 256QAM MCS table or low spectrum efficiency MCS table depends on UE capability, and these two MCS tables may not be suitable for broadcast or many groupcast cases. Hence, PC5-RRC can be used to overwrite the configured MCS table if needed for unicast.  |
| Sharp | It depends on how we conclude the FFS on whether support for 256QAM is mandatory or is a UE capability from RX UE perspective. If it is a UE capability, the 256QAM MCS table is not applicable to broadcast and groupcast (i.e. the legacy 64QAM MCS table is the only choice for broadcast and groupcast), and it is thus unnecessary to indicate the MCS table in SCI. If it is otherwise mandatory to support 256QAM from RX UE perspective, the proposal here should be supported. |