**3GPP TSG-SA5 Meeting #139-e *S5-215282***

**e-meeting, 11 - 20 October 2021**

**Source: ZTE**

**Title:** **Add analysis and comparison of potential solutions**

**Document for: Approval**

**Agenda Item: 6.5.7**

# 1 Decision/action requested

***The group is asked to discuss and approve the proposals.***

# 2 References

[1] 3GPP TR 28.825: “Management and orchestration; Study on Management Aspects of 5G Network Sharing”

# 3 Rationale

For the enhancement of NR NRM to support MOCN network sharing scenarios, several solutions have been proposed and discussed for several meetings, but no consensus has been reached.

This contribution proposes to add the analysis and comparison of the proposed potential solutions as the basis of the recommendation and conclusion of the TR.

# 4 Detailed proposal

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| **1st Change** |

# X Analysis and comparison of potential solutions

## X.1 Analysis and comparison of potential solutions of enhancement of NR NRM to support MOCN network sharing

For the enhancement of NR NRM to support MOCN network sharing, several potential solutions have been discussed, which can be mainly classified into the following types:

**Potential solution type 1**: Add new IOCs to represent the common part and use the existing IOCs (i.e. GNBDUFunciton and NRCellDU) to represent the operator specific part, seeS5-215283.

Editor’s note: when the potential solution is collected in the TR, the reference should be updated to the clause number of the potential solution(s).

**Potential solution type 2**: Add new IOCs to represent the operator specific part and use the existing IOCs (i.e. GNBDUFunciton and NRCellDU) to represent the common part; seeS5-215106, S5-215107, S5-215115 and S5-215347.

Editor’s note: when the potential solution(s) is collected in the TR, the reference should be updated to the clause number of the potential solution(s).

Based on the types of potential solutions listed above, the analysis and comparison is made in the table below.

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|  | Scenarios/Issues | Potential solution type 1 | Potential solution type 2 |
| 1 | 1. Non-sharing scenario;
2. RAN sharing without multi-CellIds scenario
 | NRM: no changeF1: no change | NRM: no changeF1: no change |
| 2 | RAN sharing with multi- CellIds – change on NRM(s) | 1. Add new IOCs (DUCommonPart, CellCommonPart);
2. Change support qualifier of existing IOC (NRCellDU: 19 attributes)
 | 1. Add new IOCs (OperatorDU, NROperatorCellDU);
2. Change support qualifier of existing IOC (NRCellDU: 3 attributes, GNBDUFunction: 2 attributes)
 |
| 3 | RAN sharing with multi- CellIds – change on F1 interface（F1-C and F1-U） | No change | 2 new F1 interfaces will be added.Will be complex in the mixed network, i.e. some gNBs are shared with multi-CellIds, and the other gNBs are not. In this case, the gNBs not shared with multi-CellIds will use the F1 bewteen GNBDUFunction and GNBCUCPFuntion/ GNBCUUPFunction, and the gNBs shared with multi-CellIds will use the F1 between OperatorDUs and GNBCUCPFuntion/ GNBCUUPFunction or both. |
| 4 | The relationship between GNBDUFunction and RAN defined gNB and gNB-DU | No change, still follow the relationships described in clause 4.2.1.1 of TS 28.541 | Will be complex in the mixed network, i.e. some gNBs are shared with multi-CellIds, and the other gNBs are not. In this case, the gNBs not shared with multi-CellIds will still follow the relationships described in clause 4.2.1.1 of TS 28.541, and the gNBs shared with multi-CellIds will be represented by OperatorDU and GNBCUCPFuntion/ GNBCUUPFunction. |
| 5 | The relationship between GNBDUFunction/NRCellDU and BWP/NRSectorCarrier | Will be complex in the mixed network, i.e. some gNBs are shared with multi-CellIds, and the other gNBs are not. In this case, the BWP/NRSectorCarrier will be name-contained by DUCommonPart, and referred by CellCommonPart. | Not included in the solution, need to be discussed. |
| 6 | The relationship between GNBDUFunction and GNBCUCPFunction/GNBCUUPFunction | No change, still follow the relationships described in clause 4.2.1.1 of TS 28.541 | Will be complex in the mixed network, i.e. some gNBs are shared with multi-CellIds, and the other gNBs are not. In this case, the gNBs not shared with multi-CellIds will still follow the relationships described in clause 4.2.1.1 of TS 28.541, and the gNBs shared with multi-CellIds will be represented by OperatorDU and GNBCUCPFuntion/ GNBCUUPFunction. |
| 7 | The relationship between NRCellDU and NRCellCU | No change，the NRCellDU and NRCellCU with the same NCGI ID represent CU and DU parts of a cell | Will be complex in the mixed network, i.e. some gNBs are shared with multi-CellIds, and the other gNBs are not. In this case, the gNBs not shared with multi-CellIds will still follow the existing relationships, and the cell of gNBs shared with multi-CellIds will be represented by NROperatorCellDU and NRCellCU. |
| 8 | management granularity on cell level | Have the capability to perform administrative management operation on operator specific cell level (e.g. block/unblock using administrativeState attribute)  | impossible to perform administrative management operation on NROperatorCellDU level (e.g. cannot block/unblock without administrativeState attribute)  |

Editor’s note: this table will be updated based on the group discussion if new potential solution(s) is proposed and/or new issue(s) is identified.

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| **End of Changes** |