**3GPP TSG-SA5 Meeting #162 *S5-254081d1***

Stor-Göteborg, Sweden, 25th Aug 2025 - 29th Aug 2025

**Source: Rakuten Mobile**

**Title: Usage of X2HOBlackList in NR-NRM**

**Document for: Discussion and Endorsement**

**Agenda Item: 6.1**

# 1 Decision/action requested

***The group is asked to discuss and endorse to this proposal.***

# 2 References

[1] 3GPP TS 28.541 "Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3"

[2] 3GPP TS 37.340 "Evolved Universal Terrestrial Radio Access (E-UTRA) and NR; Multi-connectivity; Overall Description; Stage-2"

[3] 3GPP TS 38.300 "NR; NR and NG-RAN Overall description; Stage-2"

# 3 Rationale

## 3.1 Problem statement

In TS 28.541[1], the usage of x2HOBlockList is not clear.

1. The attribute x2HOBlockList is defined as part of GNBCUCPFunction IOC in clause 4.3.2.2.
2. Attribute constraints for x2HOBlockList are defined in clause 4.3.2.3. As described in this clause, this attribute is conditional for the case where the UE is setup with Mult-Radio Dual Connectivity with EPC. This clause also references clause 4.1.2 of TS 37.340 which describes the use case where E-UTRAN supports dual connectivity and eNB acts as the Master Node and en-gNB is the Secondary Node.

Observation 3:  TS 37.340 also illustrates other use cases in clauses 10.7-10.9, but they are not related to X2 handover and do not need configuration on gNB. Please see below for more details.

* Clause 10.7 Inter-Master-Node handover
  + Clause 10.7.1: This clause is about inter-master node handover over X2, but the configuration should be on MeNB.
  + Clause 10.7.2:  This clause is about handover between ng-eNBs as source and target MNs, but it's done via Xn interface, not X2.
* Clause 10.8: Master node to eNB/gNB change
  + Clause 10.8.1: This clause is about handover from MeNB to eNB via X2, but configuration should be on eNB.
  + Clause 10.8.2:  This clause is about handover via Xn
* Clause 10.9: eNB/gNB to Master node change
  + Clause 10.9.1:  This clause is about handover from eNB to MeNB via X2, but configuration should be on MeNB.
  + Clause 10.9.2: This clause is about Xn handover.

1. As per 38.300 [3], clause 9.3, when UE is connected to EUTRA and EPC, the handover is via N26 interface between MME and AMF. No X2 involvement is prescribed for this use case.

## 3.2 Analysis

There is no case where gNB uses X2 interface for handover to eNB. Even if the MR-DC is considered and UE is connected to EPC, there is no X2 HO defined between en-gNB and eNB. Handovers between gNB and eNB always use NG/S1 interfaces and the handover happens through the core network.

## 3.3 History

The following table describes past TDocs which track the progression of this attribute in NR-NRM.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TDoc | Our remarks | TDoc Final Status | TS 28.541 version | SA5 meeting number |
| [S5-197837.zip](https://www.3gpp.org/ftp/tsg_sa/WG5_TM/TSGS5_128/docs/S5-197837.zip) | Introduction of blacklists (X2XnHOBlackList) | Approved | Updated in 16.2.0 | TSGS5\_128 |
| [S5-202084.zip](https://www.3gpp.org/ftp/TSG_SA/WG5_TM/TSGS5_130e/docs/S5-202084.zip) | Discussion paper explaining the split to separate lists for X2 and XN handovers block lists | Endorsed | N/A | TSGS5\_130e |
| [S5-202303.zip](https://www.3gpp.org/ftp/TSG_SA/WG5_TM/TSGS5_130e/docs/S5-202303.zip) | New CR with split parameter for HO block lists | Approved | Updated in 16.5.0 | TSGS5\_130e |

# 4 Detailed proposal

This DP proposes to endorse following proposals:

1. Update TS 28.541[2] and deprecate the attribute X2HOBlockList in clauses 4.3.2.2, 4.3.2.3, 4.4.1.
2. Update stage 3 \_3gpp-nr-nrm-gnbcucpfunction.yang to deprecate x2HOBlockList
3. Update stage 3 TS28541\_NrNrm.yaml to deprecate x2HOBlockList