3GPP TSG-RAN WG4 Meeting #116 R4-25xxxxx

Bengaluru, IN, August 25th – 29th 2025

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | 38.104 | **CR** | draftCR | **rev** | -- | **Current version:** | 19.1.0 |  |
|  | | | | | | | | |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Draft CR to 38.104 on adding SBFD BS Types and Configuration Constraints | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_duplex\_evo-Core | | | | |  | ***Date:*** | | | 2025-08-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Adding SBFD BS type and configuration constraints | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clause 12.1.2, 12.1.3 are introduced to capture General SBFD Base Station Operating Requirements and SBFD Base Station Types and Configuration Constraints. | | | | | | | | |
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| ***Consequences if not approved:*** | | The RF requirements for SBFD-capable BS are not completed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 12.1.2, 12.1.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

------------------------------------------Start of change-----------------------------------------------------

12.1.2 General SBFD Base Station Operating Requirements

A SBFD-capable BS shall operate only SBFD subband configurations (i.e., DL/UL subbands) that have been declared in accordance with the provisions in this specification. Operation of any undeclared SBFD configuration is not permitted.

12.1.3 SBFD Base Station Types and Configuration Constraints

12.1.3.1 General

SBFD-capable BSs are categorized as either Type-A or Type-B according to the configuration constraints defined in Table 12.1.3-1. The classification is based on BS class and rated output power.

**Table 12.1.3-1: SBFD-capable BS classification**

|  |  |  |
| --- | --- | --- |
| **BS Class** | **Rated Output Power (Prated,c,sys)** | **SBFD BS type** |
| FR1 WA BS | -- | Type-A |
| FR1 MR BS | ≥ 36 dBm | Type-A |
| FR1 MR BS | < 36 dBm | Type-B |
| FR1 LA BS | -- | Type-B |
| FR2 WA BS | -- | Type-B |
| FR2 LA BS | -- | Type-B |
| NOTE 1: A power level threshold of Prated,c,sys = 36 dBm is used to distinguish between Type-A and Type-B SBFD-capable BSs in the FR1 MR BS class. | | |

12.1.3.2 Type-A SBFD-Capable BS (Configuration-Limited)

For Type-A SBFD-capable BSs, the use of analog filter(s) is expected. The following constraints apply:

* For each channel bandwidth supported for SBFD, a maximum of three SBFD subband configurations may be declared.
  + The three configurations shall cover all supported SBFD patterns, including both DUD and DU/UD cases.
  + A single UL subband size used in both DU and UD configurations shall be counted as two configurations. For example, a UD 20-80 MHz and a DU 80-20 MHz configuration shall be counted as two.
* For each supported channel bandwidth and for each supported UL subband size:
  + Only one DL subband size may be declared and tested for the DU/UD pattern.
  + Only one DL subband size may be declared and tested for the DUD pattern.
* A Type-A SBFD-capable BS shall not operate any declared SBFD configuration (i.e., DL/UL subband) unless it has been tested.

12.1.3.3 Type-B SBFD-Capable BS (Configuration-Flexible)

For Type-B SBFD-capable BSs, the use of analog filter(s) is not expected. The following apply:

* There is no restriction on the number of UL subband sizes that may be declared.
* There is no restriction on the number of DL subband sizes that may be declared.
* For each declared channel bandwidth and for each declared SBFD pattern (i.e., DUD or DU/UD), the following configurations shall be tested:
  + The configuration with the narrowest UL subband size, and the corresponding worst-case SBFD DL transmission bandwidth:
    - For DU/UD: the configuration with the largest NRB,SBFD,DL.
    - For DUD: the configuration with the largest NRB,SBFD,DL,1.
  + The configuration with the widest UL subband size, and the corresponding worst-case SBFD DL transmission bandwidth:
    - For DU/UD: the configuration with the largest NRB,SBFD,DL.
    - For DUD: the configuration with the largest NRB,SBFD,DL,1.

------------------------------------------End of change------------------------------------------------------