**3GPP TSG-CT WG1 Meeting #131-eC1-214616**

**E-meeting, 19-27 August 2021**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.229** | **CR** | **6532** | **rev** | **1** | **Current version:** | **17.3.1** |  |
|  |
| *For* [***HE******LP***](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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Clarification on cell-info-age |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI17 |  | ***Date:*** | 2021-08-11 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *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 canbe 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | We found different implementations for the cell-info-age specified in TS 24.229:

|  |  |  |  |
| --- | --- | --- | --- |
| Time | Status | Implementation 1 | Implementation 2 |
| 20:58:40 | UE is registered over 3GPP access and is IMS registered over non-3GPP access |  |  |
| 20:58:50 | UE maks a VoWiFi call | cell-info-age: 10s | cell-info-age: 0s |
| 20:59:20 | The coverage of the cellular radio access network is lost |  |  |
| 20:59:50 | UE maks another VoWiFi call | cell-info-age: 70s | cell-info-age: 30s |

The different implementations may be triggered by the following statement in TS 24.229: "the cell-info-age parameter indicates *the relative time since the information about the cell identity was collected by the UE*".Literally, the implementation 1 seems correct. However, technically, the implementation 2 can reflect the actual situation. |
|  |  |
| ***Summary of change:*** | It is proposed to adopt the implementation 2. For better understanding, add an EXAMPLE in subclause 7.2.15.3. |
|  |  |
| ***Consequences if not approved:*** | There are different implementations. The IMS core network may mistakenly determines the network access status of the UE. |
|  |  |
| ***Clauses affected:*** | 7.2.15.3 |
|  |  |
|  | **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:*** |  |

\* \* \* First Change \* \* \* \*

#### 7.2.15.3 Usage of the Cellular-Network-Info header field

The Cellular-Network-Info header field is populated with the following contents:

1) the access-type field is set to one of "3GPP-GERAN","3GPP-UTRAN-FDD", "3GPP-UTRAN-TDD", "3GPP-E-UTRAN-FDD", "3GPP-E-UTRAN-TDD", "3GPP-E-UTRAN-ProSe-UNR", "3GPP-NR-FDD", "3GPP-NR-TDD", "3GPP-NR-U-FDD", "3GPP-NR-U-TDD", "3GPP2-1X", "3GPP2-1X-HRPD", "3GPP2-UMB", "3GPP2-1X-Femto" as appropriate to the additional access technology the information is provided about;

2) if the access-type field is set to "3GPP-GERAN", a cgi-3gpp parameter set to the Cell Global Identity obtained from lower layers of the UE. The Cell Global Identity is a concatenation of MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value), LAC (4 hexadeciaml digits) and CI (as described in 3GPP TS 23.003 [3]. The "cgi-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212];

3) if the access-type field is equal to "3GPP-UTRAN-FDD", or "3GPP-UTRAN-TDD", a "utran-cell-id-3gpp" parameter set to a concatenation of the MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value), LAC (4 hexadecimal digits) as described in 3GPP TS 23.003 [3] and the UMTS Cell Identity (7 hexadecimal digits) as described in 3GPP TS 25.331 [9A]), obtained from lower layers of the UE. The "utran-cell-id-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212];

4) if the access-type field is equal to "3GPP-E-UTRAN-FDD" or "3GPP-E-UTRAN-TDD", a "utran-cell-id-3gpp" parameter set to a concatenation of the MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value), Tracking Area Code (4 hexadecimal digits when accessing to EPC and 6 hexadecimal digits when accessing to 5GCN) as described in 3GPP TS 23.003 [3]) and the E-UTRAN Cell Identity (ECI) (7 hexadecimal digits) as described in 3GPP TS 23.003 [3]). The "utran-cell-id-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212];

EXAMPLE: If MCC is 111, MNC is 22, TAC is 33C4 and ECI is 76B4321, then Cellular-Network-Info header field looks like follows: Cellular-Network-Info: 3GPP-E-UTRAN-FDD;utran-cell-id-3gpp=1112233C476B4321

5) if the access-type field is equal to "3GPP-E-UTRAN-ProSe-UNR", a "utran-cell-id-3gpp" parameter set to a concatenation of the MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value) and the E-UTRAN Cell Identity (ECI) (7 hexadecimal digits) as described in 3GPP TS 23.003 [3] obtained from the ProSe-UE-to-network relay that the UE is connected to as specified in 3GPP TS 24.334 [8ZD]. The "utran-cell-id-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212];

EXAMPLE: If MCC is 111, MNC is 22 and ECI is 76B4321, then Cellular-Network-Info header field looks like follows: Cellular-Network-Info: 3GPP-E-UTRAN-ProSe-UNR;utran-cell-id-3gpp=1112276B4321.

6) if the access-type field is set to "3GPP2-1X", a ci-3gpp2 parameter set to the ASCII representation of the hexadecimal value of the string obtained by the concatenation of SID (16 bits), NID (16 bits), PZID (8 bits) and BASE\_ID (16 bits) (see 3GPP2 C.S0005-D [85]) in the specified order. The length of the ci-3gpp2 parameter shall be 14 hexadecimal characters. The hexadecimal characters (A through F) shall be coded using the uppercase ASCII characters. If the UE does not know the values for any of the above parameters, the UE shall use the value of 0 for that parameter. For example, if the SID is unknown, the UE shall represent the SID as 0x0000;

NOTE: The SID value is represented using 16 bits as opposed to 15 bits as specified in 3GPP2 C.S0005-D [85].

EXAMPLE: If SID = 0x1234, NID = 0x5678, PZID = 0x12, BASE\_ID = 0xFFFF, the ci-3gpp2 value is set to the string "1234567812FFFF".

7) if the access-type field is set to "3GPP2-1X-HRPD", a ci-3gpp2 parameter set to the ASCII representation of the hexadecimal value of the string obtained by the concatenation of Sector ID (128 bits) and Subnet length (8 bits) (see 3GPP2 C.S0024-B [86]) and Carrier-ID, if available, (see 3GPP2 X.S0060 [86B]) in the specified order. The length of the ci-3gpp2 parameter shall be 34 or 40 hexadecimal characters depending on whether the Carrier-ID is included. The hexadecimal characters (A through F) shall be coded using the uppercase ASCII characters;

EXAMPLE: If the Sector ID = 0x12341234123412341234123412341234, Subnet length = 0x11, and the Carrier-ID=0x555444, the ci-3gpp2 value is set to the string "1234123412341234123412341234123411555444".

8) if the access-type field is set to "3GPP2-UMB" 3GPP2 C.S0084-000 [86A], a ci-3gpp2 parameter is set to the ASCII representation of the hexadecimal value of the Sector ID (128 bits) defined in 3GPP2 C.S0084-000 [86A]. The length of the ci-3gpp2 parameter shall be 32 hexadecimal characters. The hexadecimal characters (A through F) shall be coded using the uppercase ASCII characters;

EXAMPLE: If the Sector ID = 0x12341234123412341234123412341234, the ci-3gpp2 value is set to the string "12341234123412341234123412341234".

9) if the access-type field is set to "3GPP2-1X-Femto", a ci-3gpp2-femto parameter set to the ASCII representation of the hexadecimal value of the string obtained by the concatenation of femto MSCID (24 bit), femto CellID (16 bit), FEID (64bit), macro MSCID (24 bits) and macro CellID (16 bits) (3GPP2 X.P0059-200 [86E]) in the specified order. The length of the ci-3gpp2-femto parameter is 36 hexadecimal characters. The hexadecimal characters (A through F) are coded using the uppercase ASCII characters;

10) the cell-info-age parameter indicates the relative time since the information about the cell identity collected by the UE was lost. The value of the parameter is a number indicating seconds;

EXAMPLE: If the UE is camped on cellular radio access network, the cell-info-age value is set to "0". If the UE is not camped on cellular radio access network, the cell-info-age value is set to the relative time since the coverage of the cellular radio access network the UE most recently camped on was lost.

11) if the access-type field is equal to "3GPP-NR-FDD" or "3GPP-NR-TDD", a "utran-cell-id-3gpp" parameter set to a concatenation of the MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value), Tracking Area Code (6 hexadecimal digits) as described in 3GPP TS 23.003 [3] and the NR Cell Identity (NCI) (9 hexadecimal digits). The "utran-cell-id-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212]; and

12) if the access-type field is equal to "3GPP-NR-U-FDD" or "3GPP-NR-U-TDD", a "utran-cell-id-3gpp" parameter set to a concatenation of the MCC (3 decimal digits), MNC (2 or 3 decimal digits depending on MCC value), Tracking Area Code (6 hexadecimal digits) as described in 3GPP TS 23.003 [3] and the NR Cell Identity (NCI) (9 hexadecimal digits). The "utran-cell-id-3gpp" parameter is encoded in ASCII as defined in RFC 20 [212].

\* \* \* End of Changes \* \* \* \*