**3GPP TSG RAN WG1 #112R1-230xxxx**

**Athens, Greece, February 27th - March 3rd, 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** | **-** | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Rel-16 editorial corrections for TS 38.215 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Intel | | | | | | | | | |
| ***Source to TSG:*** | RAN1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_pos-Core | | | | |  | ***Date:*** | | | 2023-03-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | In TS38.305, the abbreviation of UL angle of arrive is UL-AOA. And the abbrevations of azimuth angle of arrival and zenith angle of arrival are A-AoA and Z-AoA repectively. Same abbrevations are used in 38.455. However, in 38.215, ‘-‘ is missed for UL-AOA.  In addition, there is a typo in the current 38.215.   |  | | --- | | TS38.305   * 4.3.15 **UL-AoA**   The UL-AoA positioning method makes use of the measured azimuth angle of arrival (A-AoA) and zenith angle of arrival (Z-AoA) at multiple RPs of uplink signals transmitted from the UE. The RPs measure A-AoA and Z-AoA of the received signals using assistance data received from the positioning server, and the resulting measurements are used along with other configuration information to estimate the location of the UE.  The operation of the UL-AoA positioning method is described in clause 8.14. | | | | | | | | | |
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| ***Summary of change:*** | | The abbreviation of UL-AoA is updated according to 38.305.  A typo is fixed. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistency of abbreviations of UL-AoA exists in different specifications. A typo exists in 38.215. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.4 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

5.2.4 UL Angle of Arrival (UL-AoA)

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| **Definition** | UL Angle of Arrival (UL AoA) is defined as the estimated azimuth angle (A-AoA) and vertical angle (Z-AoA) of a UE with respect to a reference direction, wherein the reference direction is defined:  - In the global coordinate system (GCS), wherein estimated azimuth angle is measured relative to geographical North and is positive in a counter-clockwise direction and estimated vertical angle is measured relative to zenith and positive to horizontal direction  - In the local coordinate system (LCS), wherein estimated azimuth angle is measured relative to x-axis of LCS and positive in a counter-clockwise direction and estimated vertical angle is measured relative to z-axis of LCS and positive to x-y plane direction. The bearing, downtilt and slant angles of LCS are defined according to TS 38.901 [15].  The UL-AoA is determined at the gNB antenna for an UL channel corresponding to this UE. |

< Unchanged parts are omitted >