**3GPP TSG-CT WG6 Meeting #119bis*****C6-240522***

**Maastricht, Netherlands; 20th – 23rd August 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **31.124** | **CR** | **0774** | **rev** | **1** | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <http://www.3gpp.org/Change-Requests>.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps | **x** | ME | **x** | Radio Access Network | **x** | Core Network | **x** |

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|  | | | | | | | | | | |
| ***Title:*** | Add testcase of Geographical location information discovery in 5G | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Mobile | | | | | | | | | |
| ***Source to TSG:*** | CT6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UEConTest\_R16 | | | | |  | ***Date:*** | | | 2024-08-22 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Geographical location discovery procedure is described in 31.111:”The proactive command Geographical Location Request and the envelope command Geographical Location Reporting allows the UICC to request and receive the current geographical location information from the ME when the ME is equipped with a positioning feature and it is enabled (e.g. autonomous GPS, Assisted GPS or Assisted GNSS).”  There is no test case about Geographical location discovery in 31.124. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add testcase of Geographical location information discovery in 5G. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The test cases are not covered with Geographical location information discovery. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.4, 27.22.x(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | C6-240455 | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*start of changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 3.4 Applicability table

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **27.22.4.6** |  | **POLL INTERVAL** |  |  |  |  |  |  |  |
|  | 1.1 | duration | R99 |  | M | E.1/22 | No |  |  |
| **27.22.4.7** |  | **REFRESH** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **27.22.X** |  | **Geographical location discovery** |  |  |  |  |  |  |  |
|  | X.X | Geographical location discovery, Preferred GAD shapes is Ellipsoid point with altitude, NG-RAN | Rel-15 |  | CXXX | E.1/181 AND  E.1/238) | NG-SS only |  |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*next of changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

|  |  |  |
| --- | --- | --- |
| C101 | IF A.1/1 THEN M ELSE N/A | -- O\_Cap\_Conf |
| … | … | … |
| C235 | IF (A.1/187 AND A.1/196) THEN M ELSE N/A | -- pc\_NG\_RAN AND pc\_CAG |
| CXXX | IF (A.1/81 AND A.1/187) THEN M ELSE N/A | -- O\_Geo\_Location\_Discovery AND pc\_NG\_RAN |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*next of changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 27.22.x Geographical location discovery

27.22.x.1 Definition and applicability

See clause 3.2.2.

27.22.x.2 Conformance requirement

The ME shall support the Geographical Location Request Command and Geographical Location Reporting Command as defined in:

- TS 31.111 [15] clause 6.4.40, clause 6.6.40 and clause 7.10.

27.22.x.3 Test purpose

To verify that the ME performs the proactive command Geographical Location Request and the envelope command Geographical Location Reporting allows the UICC to request and receive the current geographical location information from the ME when the ME is equipped with a positioning feature and it is enabled (e.g. autonomous GPS, Assisted GPS or Assisted GNSS).

27.22.x.4 Method of test

27.22..x.4.1 Initial conditions

The ME is connected to the USIM Simulator and connected to the NG-SS.

The NG-RAN parameters of the NG-SS are:

- Mobile Country Code (MCC) = 001;

- Mobile Network Code (MNC) = 01;

- Tracking Area Code (TAC) = 000001;

The elementary files are coded as the default NG-RAN UICC .

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME is equipped with a positioning feature and it is enabled.

27.22.x.4.2 Procedure

Expected Sequence x.1 (Geographical location discovery, Preferred GAD shapes is Ellipsoid point with altitude, NG-RAN)

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | MESSAGE / Action | Comments |
| 1 | ME → NG-SS | ME successfully REGISTER with NG-RAN cell. |  |
| 2 | UICC → ME | PROACTIVE COMMAND Geographical Location Request x.1.1 |  |
| 3 | ME → UICC | FETCH |  |
| 4 | UICC → ME | PROACTIVE COMMAND: Geographical Location Request x.1.1 |  |
| 5 | ME → UICC | TERMINAL RESPONSE: Geographical Location Request x.1.1 | [normal ending] |
| 6 | ME → UICC | ENVELOPE Geographical Location Reporting x.1.1 | [The ME provides the GAD shapes of Ellipsoid point with altitude ] |

PROACTIVE COMMAND: Geographical Location Request x.1.1

Logically:

Command details

Command number: 1

Command type: Geographical Location Request

Command qualifier: 0

Device identities

Source device: UICC

Destination device: ME

Geographical Location Parameters

Horizontal accuracy: horizontal accuracy not specified / best effort

Vertical coordinate: vertical coordinate is requested, (i.e. 3D location fix is preferred) but accuracy is not specified (best effort)

Velocity: Horizontal velocity requested

Preferred GAD shapes: Ellipsoid point with altitude

Preferred NMEA sentences: RMC

Preferred Maximum Response Time: 2^7 seconds

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 11 | 81 | 03 | 01 | 16 | 00 | 82 | 02 | 81 | 82 | 76 |
|  | 06 | 81 | 81 | 01 | 08 | 01 | 07 |  |  |  |  |  |

TERMINAL RESPONSE: Geographical Location Request x.1.1

Logically:

Command details

Command number: 1

Command type: Geographical Location Request

Command qualifier: 0

Device identities

Source device: ME

Destination device: UICC

Result

General Result: Command performed successfully

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | 81 | 03 | 01 | 16 | 00 | 82 | 02 | 82 | 81 | 83 | 01 | 00 |

ENVELOPE: Geographical Location Reporting x.1.1

Logically:

Device identities

Source device: ME

Destination device: UICC

GAD shapes

GAD shape: Degrees of latitude, Degrees of longitude and Altitude 8038D13852BC9A0071 (as an example)

Velocity: Horizontal Velocity 005B0006 (as an example)

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | DD | 15 | 82 | 02 | 82 | 81 | 77 | 0F | 09 | Note1 | 04 | Note2 |

Note 1: The GAD shape values are present. The values of these nine bytes shall not be verified.

Note 2: The Velocity values are present. The values of these four bytes shall not be verified.

27.22.x.5 Test requirement

The ME shall operate in the manner defined in expected sequences x.1.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*end of changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*