**3GPP TSG-CT WG4 Meeting #111-e C4-224**

**E-Meeting, 18th – 26th August 2022 was C4-224349**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **29.518** | **CR** | **0786** | **rev** | **1** | **Current version:** | **17.6.0** |  |
|  |
| *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 |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Indication of Network Assisted Positioning method |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | C4 |
|  |  |
| ***Work item code:*** | ID\_UAS, 5G\_eLCS\_ph2 |  | ***Date:*** | 2022-08-10 |
|  |  |  |  |  |
| ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | TS 33.256 defined the Location information veracity and location tracking authorization in 5GS in clause 5.3.2 as below：1. The USS sends the location request to UAS NF/NEF to request the UAV location or presence from network. The location request includes the GPSI of the UAV to request the location information or presence about an individual UE, or a geographic area when trying to find the information of all UAVs in an area. The LCS request also indicates the 5GS to obtain reliable UE location information, i.e. the location calculated and provided by the network. If the USS/TPAE does not specify target 3GPP UAV ID and request UAS NF for a list of the UAVs in the geographic area and served by the PLMN, clauses 5.3.1.3 and 5.3.4 in TS 23.256 [3] apply.2. The UAS NF/NEF first verifies the request in step 1 is authorized. When the USS sends a GPSI, this is done by checking whether the identifier of the USS sending the request matches the previously associated mapping between the GPSI and the USS identifier. When the USS request UAS NF for a list of the UAVs in the geographic area, this is done by checking the USS is authorized to receive the CAA level ID of all UAVs in a geographic area indicated by the USS. The UAS NF/NEF gets the relevant UAV(s) location information or presence from AMF or GMLC by the current location services supported by AMF or GMLC if passes the above authorization check. On the condition of the location services provided by AMF, the UE presence status is provided by reusing the Area of Interest mechanism. On the condition of the location services provided by GMLC, the GMLC indicates LMF via AMF to select Network Assisted Positioning method which relies on the location measurement from NG-RAN nodes, if receiving reliable location information request in step 1.Based on the reply LS S3-221254 below:**CT4 question:** *However, there is no clear definition of high reliability requirement in Stage2. There are 2 alternatives for implementation of this indication in CT4.**- If the positioning for UAS requires (or will potentially require in future) some specific treatment in GMLC/LMF, it is better to extend the LCS service type by Stage 1 and Stage 2.* *- If only the high reliability requirement is needed, i.e. the UAS NF/NEF will either use AMF with PRA mechanism or using GMLC/AMF/LMF with network assisted positioning, then an indication on GMLC API implemented by CT4 is sufficient.* *CT4 would like to ask SA3, SA2 kindly clarify the scenario and the definition of above high reliability requirement in stage 2, thus help CT4 to select the appropriate alternative in stage 3 implementation.* **SA3 answer:**In general, both alternatives are acceptable from the security perspective of view. SA3 tends to recommend alternative 2 for sake of progress.SA3 would also like to provide the background for information. As specified in TS 33.256, the location information from 5GS is used to check and verify the location information reported by UAV via the application layer. The location information from 5GS with high reliability is expected. ‘High reliability’ is clarified in the attached CR. There is an indication to indicate 5GS to obtain reliable UE location information and implicit indicate LMF to select Network Assisted Positioning method.  |
|  |  |
| ***Summary of change:*** | It proposes to add the indication as defined in 33.256 |
|  |  |
| ***Consequences if not approved:*** | It is not aligned with Stage2 |
|  |  |
| ***Clauses affected:*** | 2, 5.5.2.2.1, 6.4.6.2.2, A.5 |
|  |  |
|  | **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 introduces backward compatibile corrections to the OpenAPI files of Namf\_Location API. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* Begin of Changes \* \* \* \*

# 2 References

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[6] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[7] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[8] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[9] IETF RFC 2387: "The MIME Multipart/Related Content-type".

[10] IETF RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[11] 3GPP TS 24.501: "Non-Access-Stratum (NAS) Protocol for 5G System (5GS); Stage 3".

[12] 3GPP TS 38.413: "NG Radio Access Network (NG-RAN); NG Application Protocol (NGAP)".

[13] 3GPP TS 36.355: "Evolved Universal Terrestrial Radio Access (E-UTRA); LTE Positioning Protocol (LPP)".

[14] IETF RFC 6902: "JavaScript Object Notation (JSON) Patch".

[15] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General Aspects".

[16] 3GPP TS 29.502: "5G System, Session Management Services; Stage 3".

[17] 3GPP TS 38.455: "NR Positioning Protocol A (NRPPa)".

[18] 3GPP TS 29.531: "Network Slice Selection Services; Stage 3".

[19] IETF RFC 7540: "Hypertext Transfer Protocol Version 2 (HTTP/2)".

[20] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[21] Void.

[22] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[23] OpenAPI Initiative, "OpenAPI Specification Version 3.0.0".

[24] 3GPP TS 36.413: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); S1 Application Protocol (S1AP)".

[25] 3GPP TS 29.572: "5G System, Location Management Services; Stage 3".

[26] Void.

[27] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[28] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[29] 3GPP TS 29.510: "Network Function Repository Services; Stage 3".

[30] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".

[31] Void.

[32] 3GPP TS 29.507: "5G System; Access and Mobility Policy Control Service; Stage 3".

[33] 3GPP TS 23.527: "5G System; Restoration Procedures".

[34] 3GPP TS 29.525: "5G System; UE Policy Control Service; Stage 3".

[35] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[36] IETF RFC 7807: "Problem Details for HTTP APIs".

[37] 3GPP TR 21.900: "Technical Specification Group working methods".

[38] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[39] 3GPP TS 23.216: "Single Radio Voice Call Continuity (SRVCC); Stage 2".

[40] IETF RFC 6901: "JavaScript Object Notation (JSON) Pointer".

[41] 3GPP TS 29.274: "3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3".

[42] 3GPP TS 23.273: "5G System (5GS) Location Services (LCS); Stage 2".

[43] 3GPP TS 24.080: "Mobile radio interface layer 3 supplementary services specification; Formats and coding".

[44] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[45] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[46] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services Stage 3".

[47] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[48] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System (5GS)".

[49] 3GPP TS 33.401: "3GPP System Architecture Evolution (SAE); Security architecture".

[50] 3GPP TS 29.010: "Information element mapping between Mobile Station - Base Station System (MS - BSS) and Base Station System - Mobile-services Switching Centre (BSS - MSC); Signalling Procedures and the Mobile Application Part (MAP)".

[51] 3GPP TS 23.304: "Proximity based Services (ProSe) in the 5G System (5GS)".

[52] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".

[53] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS); Stage 3".

[54] 3GPP TS 24.554: " Proximity-services (ProSe) in 5G System (5GS) protocol aspects; Stage 3".

[55] 3GPP TS 23.247: "Architectural enhancements for 5G multicast-broadcast services".

[56] 3GPP TS 23.256: "Support of Uncrewed Aerial Systems (UAS) connectivity, identification and tracking; Stage 2".

[x1] 3GPP TS 33.256: "Security aspects of Uncrewed Aerial Systems (UAS)".

\* \* \* Next Change \* \* \* \*

#### 5.5.2.2 ProvidePositioningInfo

##### 5.5.2.2.1 General

The ProvidePositioningInfo service operation is used in the following procedure:

- 5GC-MT-LR Procedure without UDM Query (see 3GPP TS 23.273 [42], clause 6.10.2)

- 5GC-MT-LR Procedure (see 3GPP TS 23.273 [42], clause 6.1)

- Initiation and Reporting of Location Events (see 3GPP TS 23.273 [42], clause 6.3.1)

- Location Continuity for Handover of an Emergency session from NG-RAN (see 3GPP TS 23.273 [42], clause 6.10.3)

The ProvidePositioningInfo service operation shall be invoked by the NF Service Consumer (e.g. GMLC) to request the current or deferred geodetic and optionally local and/or civic location of the UE. The service operation triggers the AMF to invoke the service towards the LMF.

The NF Service Consumer shall invoke the service operation by sending POST to the URI of the "provide-pos-info" custom operation on the "Individual UE Context" resource (See clause 6.4.3.2.4.2). See also figure 5.5.2.2.1-1.



Figure 5.5.2.2.1-1: NF Service Consumer requests the positioning information of the UE

1. The NF Service Consumer shall send a POST request to the resource URI of "provide-pos-info" custom operation of the "Individual UE context" resource of the AMF. The payload body of the POST request may contain an indication of a positioning request from emergency services or commercial services client, the required QoS, Supported GAD shapes, scheduled location time and reliable UE Location Request. If the NF service consumer wants the location change information or deferred location information to be notified (e.g. during a handover procedure or for activation or completion of deferred location), it also provides a callback URI on which the EventNotify service operation is executed (see clause 5.5.2.3).

2a. On success, "200 OK" shall be returned, the payload body containing the LCS correlation identifier, the location estimate, its age and accuracy and the information about the positioning method. If the request is invoked during a handover the response body shall also include the target AMF node identifier as specified in clause 6.10.3 of 3GPP TS 23.273 [42].

2b. On accept, "204 No Content" shall be returned to acknowledge that AMF supports a deferred location request and a deferred location is accepted as specified in step 6 of clause 6.3.1 of 3GPP TS 23.273 [42];

2c. On failure or redirection, one of the HTTP status code listed in Table 6.4.3.2.4.2.2-2 shall be returned. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.4.3.2.4.2.2-2.

\* \* \* Next Change \* \* \* \*

##### 6.4.6.2.2 Type: RequestPosInfo

Table 6.4.6.2.2-1: Definition of type RequestPosInfo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| lcsClientType | ExternalClientType | M | 1 | This IE shall contain the type of LCS client (Emergency, Lawful Interception etc.,.) issuing the location request |
| lcsLocation | LocationType | M | 1 | This IE shall contain the type of location measurement requested, such as current location,current or last known location, deferred location, etc.(NOTE 2) |
| supi | Supi | C | 0..1 | If the SUPI is available, this IE shall be present. |
| gpsi | Gpsi | C | 0..1 | If the GPSI is available, this IE shall be present. |
| priority | LcsPriority | O | 0..1 | If present, this IE shall contain the priority of the LCS client issuing the positioning request. |
| lcsQoS | LocationQoS | O | 0..1 | If present, this IE shall contain the quality of service requested, such as the accuracy of the positioning measurement and the response time of the positioning operation.Multiple QoS Class (lcsQosClass sets to "MULTIPLE\_QOS") shall only be used when AMF support MUTIQOS feature. |
| velocityRequested | VelocityRequested | O | 0..1 | If present, this IE shall contain an indication of whether or not the Velocity of the target UE is requested. |
| lcsSupportedGADShapes | SupportedGADShapes | O | 0..1 | If present, this IE shall contain one GAD shape supported by the LCS client. |
| additionalSuppGADShapes | array(SupportedGADShapes) | C | 1..N | Shall be absent if lcsSupportedGADShapes is absent. Shall be present if the LCS client supports more than one GAD shape. |
| locationNotificationUri | Uri | O | 0..1 | The callback URI on which location change event notification is reported. |
| supportedFeatures | SupportedFeatures | C | 0..1 | This IE shall be present if at least one optional feature defined in clause 6.4.8 is supported.  |
| oldGuami | Guami | C | 0..1 | This IE shall be present during an AMF planned removal procedure when the NF Service Consumer initiates a request towards the target AMF, for a UE associated to an AMF that is unavailable (see clause 5.21.2.2 of 3GPP TS 23.501 [2]). |
| pei | Pei | C | 0..1 | This IE shall be present if supi and gpsi are not available. |
| lcsServiceType | LcsServiceType | O | 0..1 | This IE contains the LCS service type for an external client.(NOTE 1) |
| ldrType | LdrType | C | 0..1 | This IE contains the type of LDR for a deferred location request. This IE shall be present when lcsLocation is set to "DEFERRED\_LOCATION". |
| hgmlcCallBackURI | Uri | C | 0..1 | This IE contrains the callback URI of the H-GMLC for a deferred location request. This IE shall be present when lcsLocation is set to "DEFERRED\_LOCATION". |
| ldrReference | LdrReference | C | 0..1 | This IE contains the LDR Reference Number for a deferred location request This IE shall be present when lcsLocation is set to "DEFERRED\_LOCATION". |
| periodicEventInfo | PeriodicEventInfo | C | 0..1 | This IE contains information for periodic event reporting for a deferred location request. This IE shall be present when ldrType is set to "PERIODIC".  |
| areaEventInfo | AreaEventInfo | C | 0..1 | This IE contains information for area event reporting for a deferred location request. This IE shall be present when ldrType is set to "ENTERING\_INTO\_AREA", "LEAVING\_FROM\_AREA" or "BEING\_INSIDE\_AREA". |
| motionEventInfo | MotionEventInfo | C | 0..1 | This IE contains information for motion event reporting for a deferred location request. This IE shall be present when ldrType is set to "MOTION". |
| externalClientIdentification | ExternalClientIdentification | O | 0..1 | This IE provides the external LCS client identification (e.g. the name of the LCS client).(NOTE 1) |
| afID | NfInstanceId | O | 0..1 | This IE provides the identification of an AF that initiated the location request.(NOTE 1) |
| codeWord | CodeWord | O | 0..1 | This IE provides a codeword for a location request which is provided by an external Client or AF and is sent to and verified by a target UE as part of privacy verification.(NOTE 1) |
| uePrivacyRequirements | UePrivacyRequirements | O | 0..1 | If present, the IE provides the indication of location related notification or verification for the target UE, the indication of codeword check in UE |
| scheduledLocTime | DateTime | O | 0..1 | If present, the IE provides the scheduled time that the UE needs to be located. |
| reliableLocReq | boolean | C | 0..1 | This IE shall be included with the value "true" to indicate that reliable UE location information is required, as specified in 3GPP TS 33.256 [x1] clause 5.3.2.When present, this IE shall be set as following:- true: the reliable UE location information is required- false (default): the reliable UE location information is not required |
| NOTE 1: At least one of these IEs should be present when uePrivacyCallSessionUnrelatedClass indicates notification and/or verification for the target UE.NOTE 2: If the lcsLocation IE is set to value "NOTIFICATION\_VERIFICATION\_ONLY", then the lcsServiceAuthInfo attribute in the uePrivacyRequirements IE, if present, shall be set to either "NOTIFICATION\_ONLY" or "NOTIFICATION\_AND\_VERIFICATION\_ONLY". |

\* \* \* Next Change \* \* \* \*

# A.5 Namf\_Location

*(... text not shown for clarity ...)*

 schemas:

 RequestPosInfo:

 description: Data within Provide Positioning Information Request

 type: object

 properties:

 lcsClientType:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/ExternalClientType'

 lcsLocation:

 $ref: '#/components/schemas/LocationType'

 supi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 gpsi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 priority:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LcsPriority'

 lcsQoS:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocationQoS'

 velocityRequested:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/VelocityRequested'

 lcsSupportedGADShapes:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/SupportedGADShapes'

 additionalLcsSuppGADShapes:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/SupportedGADShapes'

 minItems: 1

 locationNotificationUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 oldGuami:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Guami'

 pei:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

 lcsServiceType:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LcsServiceType'

 ldrType:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LdrType'

 hgmlcCallBackURI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 ldrReference:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LdrReference'

 periodicEventInfo:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/PeriodicEventInfo'

 areaEventInfo:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/AreaEventInfo'

 motionEventInfo:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/MotionEventInfo'

 externalClientIdentification:

 $ref: 'TS29515\_Ngmlc\_Location.yaml#/components/schemas/ExternalClientIdentification'

 afID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 codeWord:

 $ref: 'TS29515\_Ngmlc\_Location.yaml#/components/schemas/CodeWord'

 uePrivacyRequirements:

 $ref: 'TS29515\_Ngmlc\_Location.yaml#/components/schemas/UePrivacyRequirements'

 scheduledLocTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 reliableLocReq:

 type: boolean

 default: false

 required:

 - lcsClientType

 - lcsLocation

 ProvidePosInfo:

 description: Data within Provide Positioning Information Response

 type: object

 properties:

 locationEstimate:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 localLocationEstimate:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LocalArea'

 accuracyFulfilmentIndicator:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/AccuracyFulfilmentIndicator'

 ageOfLocationEstimate:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/AgeOfLocationEstimate'

 timestampOfLocationEstimate:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 velocityEstimate:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/VelocityEstimate'

 positioningDataList:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/PositioningMethodAndUsage'

 minItems: 0

 maxItems: 9

 gnssPositioningDataList:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GnssPositioningMethodAndUsage'

 minItems: 0

 maxItems: 9

 ecgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ecgi'

 ncgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ncgi'

 targetServingNode:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 targetMmeName:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DiameterIdentity'

 targetMmeRealm:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DiameterIdentity'

 utranSrvccInd:

 type: boolean

 civicAddress:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

 barometricPressure:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/BarometricPressure'

 altitude:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/Altitude'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 servingLMFIdentification:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/LMFIdentification'

 locationPrivacyVerResult:

 $ref: '#/components/schemas/LocationPrivacyVerResult'

 achievedQos:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/MinorLocationQoS'

*(... text not shown for clarity ...)*

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