**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | One of the information elements from the RAN may have location information in it. This contribution clarifies that that information should only be sent if location information is authorized. | | | | | | | | |
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| ***Summary of change:*** | | Clarifies that certain information elements should only be sent when location is authorized. | | | | | | | | |
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| ***Consequences if not approved:*** | | Location information may be sent when not authorized. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2.2.2.2, 6.3.2.2.3, 6.3.2.2.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | s3i240700 | | | | | | | | |

\*\*\*\* START OF FIRST CHANGE (MAIN DOCUMENT) \*\*\*\*

6.2.2.2.2 Registration

The IRI-POI in the AMF shall generate an xIRI containing an AMFRegistration record when the IRI-POI present in the AMF detects that a UE matching one of the target identifiers provided via LI\_X1 has successfully registered to the 5GS via 3GPP NG-RAN or non-3GPP access. Accordingly, the IRI-POI in the AMF generates the xIRI when the following event is detected:

- AMF sends a N1: REGISTRATION ACCEPT message to the target UE and the UE 5G Mobility Management (5GMM) state for the access type (3GPP NG-RAN or non-3GPP access) within the AMF is changed to 5GMM-REGISTERED.

**Table 6.2.2.2.2-1: Payload for AMFRegistration record**

| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| --- | --- | --- | --- | --- |
| registrationType | AMFRegistrationType | 1 | Specifies the type of registration, see TS 24.501 [13] clause 9.11.3.7. This is derived from the information received from the UE in the REGISTRATION REQUEST message. | M |
| registrationResult | AMFRegistrationResult | 1 | Specifies the result of registration, see TS 24.501 [13] clause 9.11.3.6. | M |
| slice | Slice | 0..1 | Provide, if available, one or more of the following:  - allowed NSSAI (see TS 24.501 [13] clause 9.11.3.37).  - configured NSSAI (see TS 24.501 [13] clause 9.11.3.37).  - rejected NSSAI (see TS 24.501 [13] clause 9.11.3.46).  This is derived from the information sent to the UE in the REGISTRATION ACCEPT message. | C |
| sUPI | SUPI | 1 | SUPI associated with the registration (see clause 6.2.2.4). | M |
| sUCI | SUCI | 0..1 | SUCI used in the registration, if available. | C |
| pEI | PEI | 0..1 | PEI provided by the UE during the registration, if available. | C |
| gPSI | GPSI | 0..1 | GPSI obtained in the registration, if available as part of the subscription profile. | C |
| gUTI | FiveGGUTI | 1 | 5G-GUTI provided as outcome of initial registration or used in other cases, see TS 24.501 [13] clause 5.5.1.2.2. | M |
| location | Location | 0..1 | Location information determined by the network during the registration, if available.  Shall be encoded using the *Location.locationInfo.userLocation* parameter and, when Dual Connectivity is activated, using the *Location.locationInfo.additionalCellIDs* parameter. If available, other parameters reportable via *Location* shall be included. | C |
| non3GPPAccessEndpoint | UEEndpointAddress | 0..1 | UE's local IP address used to reach the N3IWF, TNGF or TWIF, if available. IP addresses are given as 4 octets (for IPv4) or 16 octets (for IPv6) with the most significant octet first (network byte order). | C |
| fiveGSTAIList | TAIList | 0..1 | List of tracking areas associated with the registration area within which the UE is current registered, see TS 24.501 [13] clause 9.11.3.9 (see NOTE) | C |
| sMSoverNASIndicator | SMSOverNASIndicator | 0..1 | Indicates whether SMS over NAS is supported. Provide, if included in registrationResult, see TS 24.501 [13] clause 9.11.3.6. | C |
| oldGUTI | EPS5GGUTI | 0..1 | GUTI or 5G-GUTI, if provided in the REGISTRATION REQUEST message, see TS 24.501 [13] clause 5.5.1.2.2. | C |
| eMM5GRegStatus | EMM5GMMStatus | 0..1 | UE Status, if provided in the REGISTRATION REQUEST message, see TS 24.501 [13] clause 9.11.3.56. | C |
| nonIMEISVPEI | NonIMEISVPEI | 0..1 | MACAddress or EUI-64 used as UE equipment identity if IMEI or IMEISV based PEI is not available. Provide if known, see TS 24.501 [13] clause 8.2.26.4. | C |
| mACRestIndicator | MACRestrictionIndicator | 0..1 | Indicates whether the non-IMEISV PEI MACAddress can be used as an equipment identifier. Required if non-IMEISVPEI is used, see TS 24.501 [13] clause 9.11.3.4. | C |
| pagingRestrictionIndicator | PagingRestrictionIndicator | 0..1 | Indicates if paging is restricted or the type of paging allowed. Shall be included if sent in the REGISTRATION REQUEST message. Encoded per TS 24.501 [13] clause 9.11.3.77, omitting the first two octets. | C |
| rATType | RATType | 0..1 | RAT Type shall be present if known by the AMF. RAT Type is determined by the AMF during registration. See TS 23.501 [2] clause 5.3.2.3 | C |
| rRCEstablishmentCause | RRCEstablishmentCause | 0..1 | Indicates the reason for UE RRC Connection Establishment. This parameter shall be populated with information provided by the serving RAN during NAS establishment in the Initial UE Message. See TS 38.413 [23] clause 9.3.1.111. | C |
| nGInformation | NGInformation | 0..1 | Provides application layer related information for the serving Global RAN Node provided by the NG-RAN node to the serving AMF during NG setup. This parameter shall be populated using information from the NG SETUP REQUEST and NG SETUP RESPONSE. See TS 38.413 [23] clauses 9.2.6.1 and 9.2.6.2. Shall only be sent when location information reporting is authorized. | C |
| nASTransportInitialInformation | NASTransportInitialInformation | 0..1 | Provides information related to the NAS Transport setup for the target UE over the NG interface. Shall be included when received by the AMF per TS 38.413 [23]. This parameter is only conditional for backward compatibility. See TS 38.413 [23] clause 9.2.5.1. | C |
| equivalentPLMNList | PLMNList | 0..1 | Provides a list of equivalent PLMNs in the REGISTRATION ACCEPT message. See clause TS 24.501 [13] clause 8.2.7.3. | C |
| fiveGMMCapability | FiveGMMCapability | 0..1 | Shall contain the target 5GMM capability information octets sent in the REGISTRATION REQUEST message, omitting the first two octets. Defined in TS 24.501 [13] clause 9.11.3.1. | C |
| initialRANUEContextSetup | InitialRANUEContextSetup | 0..1 | Provides information sent in the INITIAL CONTEXT SETUP message from the AMF to the RAN for a target. See TS 38.413 [23] clause 9.2.2.1. | C |
| mUSIMUERequestType | MUSIMUERequestType | 0..1 | Indicates a MUSIM UE has requested release of NAS signalling or has rejected paging. Shall be included if sent in the REGISTRATION REQUEST message. Encoded per UE Request Type omitting the first two octets. See TS 24.301 [51] clause 9.9.3.65. | C |
| sORTransparentContainer | SORTransparentContainer | 0..1 | Provides the list of preferred PLMN/access technology combinations. Included if sent in the NAS N1 message REGISTRATION ACCEPT. Given as a SoR Transparent container encoded per TS 24.501 [13] clause 9.11.3.51 omitting the first three octets. | C |
| unavailabilityPeriodDuration | UnavailabilityPeriodDuration | 0..1 | Period duration the UE is unavailable. Include if sent in the REGISTRATION REQUEST message. See TS 24.501 [13] clause 8.2.6.1. Encoded as GPRS Timer 3, see TS 24.008 [95] clause 10.5.7.4a, omitting the first two octets. | C |
| fiveGSUpdateType | FiveGSUpdateType | 0..1 | Shall contain the target 5GS Update Type information octets if sent in the REGISTRATION REQUEST message. Defined in TS 24.501 [13] clause 9.11.3.9A, omitting the first two octets. | C |
| uEAreaIndication | UEAreaIndication | 0..1 | Contains a country, area in a country or international area indication where UE is located, if available. If UE is outside of the area of any known country, i.e. international area, it contains the international area indication without a country. UEAreaIndication is derived from the data present in the UEAreaIndication information element defined in TS 29.572 [24] clause 6.1.6.2.42. | C |
| establishmentCauseNon3GPPAccess | EstablishmentCauseNon3GPPAccess | 0..1 | Provides the establishment cause for Non-3GPP access (N3AEC) sent to the AMF by the N3AF on behalf of the target. Encoded per TS 24.502 [128] clause 9.2.2 omitting the first octet. Shall be included for N3AEC. | C |
| NOTE: List shall be included each time there is a change to the registration area. | | | | |

**Table 6.2.2.2.2-2: Payload for UEAreaIndication**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| Country | UTF8String (SIZE (2)) | 0..1 | Indicates the country or the area of country where the UE is located. Contains the two-letter ISO 3166 country code in capital ASCII letters, e.g., DE or US. Shall be encoded as described in TS 29.572 [24] table 6.1.6.2.42-1. | C |
| internationalAreaIndication | BOOLEAN | 0..1 | Indicates international area.  Set to true if UE is located in international area and set to false (default) if UE is not located in international area. | C |
| NOTE: Either country or internationalAreaIndication shall be present. | | | | |

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

6.3.2.2.3 Attach

The IRI-POI in the MME shall generate an xIRI containing an MMEAttach record when the IRI-POI present in the MME detects that a UE matching one of the target identifiers provided via LI\_X1 has successfully attached to EPS. Accordingly, the IRI-POI in the MME generates the xIRI when the following event is detected:

- MME sends an S1: ATTACH ACCEPT message to the target UE and the UE EPS Mobility Management (EMM) state within the MME is changed to EMM-REGISTERED.

**Table 6.3.2-2: Payload for MMEAttach record**

| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| --- | --- | --- | --- | --- |
| attachType | EPSAttachType | 1 | Specifies the type of EPS Attach, see TS 24.301 [51] clause 9.9.3.11. This is derived from the information received from the UE in the Attach Request message. | M |
| attachResult | EPSAttachResult | 1 | Specifies the result of the attach procedure, see TS 24.301 [51] clause 9.9.3.10. | M |
| iMSI | IMSI | 1 | IMSI associated with the registration. | M |
| iMEI | IMEI | 0..1 | IMEI associated with the registration, if available. | C |
| mSISDN | MSISDN | 0..1 | mSISDN associated with the registration, if available. | C |
| gUTI | GUTI | 0..1 | GUTI provided as outcome of initial attach or used in other cases, see TS 24.301 [51] clause 5.5.1.2.4. | C |
| location | Location | 0..1 | Location information determined by the network during the registration or known at the MME, if available.  Shall include all location information for the target UE available at the MME encoded as one of the following (see NOTE 2):  *- as a Location.fourGLocationInfo.ePSLocationInformation* parameter*.*  *- as a Location.fourGLocationInfo.ePSUserLocationInformation* parameter*.*  If available, other parameters reportable via *Location* shall be included. | C |
| ePSTAIList | TAIList | 0..1 | List of tracking areas associated with the registration area within which the UE is currently registered, see TS 24.301 [51] clause 9.9.3.33. (see NOTE 1) | C |
| sMSServiceStatus | EPSSMSServiceStatus | 0..1 | Indicates the availability of SMS Services. Shall be provided if present in the ATTACH ACCEPT. | C |
| oldGUTI | GUTI | 0..1 | Old GUTI used in the registration, if available. | C |
| eMM5GRegStatus | EMM5GMMStatus | 0..1 | UE Status, if provided in the REGISTRATION REQUEST message, see TS 24.501 [13] clause 9.11.3.56. | C |
| pagingRestrictionIndicator | PagingRestrictionIndicator | 0..1 | Indicates if paging is restricted or the type of paging allowed. Include if sent in the Attach Request message. Encoded per TS 24.301 [51] clause 9.9.3.66, omitting the first two octets. | C |
| rATType | RATType | 0..1 | RAT Type shall be present if known by the MME. RAT Type is determined by the MME during the attach procedure. See TS 23.401 [50] clause 4.3.5.3. | C |
| rRCEstablishmentCause | EPSRRCEstablishmentCause | 0..1 | Indicates the reason for UE RRC Connection Establishment. This parameter shall be populated with information provided by the serving RAN during NAS establishment in the Initial UE Message. See TS 36.413 [38] clause 9.2.1.3a. | C |
| s1Information | S1Information | 0..1 | Provides application layer related information for the serving Global RAN Node provided by the eNB node to the serving MME during S1 setup. This parameter shall be populated using information from the S1 SETUP REQUEST and S1 SETUP RESPONSE. See TS 36.413 [38] clauses 9.1.8.4 and 9.1.8.5. Shall only be sent when location information reporting is authorized. | C |
| nASTransportInitialInformation | EPSNASTransportInitialInformation | 0..1 | Provides information related to the NAS Transport setup for the target UE over the S1 interface. Shall be included when received by the MME per TS 36.413 [38]. This parameter is only conditional for backward compatibility. See TS 36.413 [38] clause 9.1.7.1. | C |
| equivalentPLMNList | PLMNList | 0..1 | Provides a list of equivalent PLMNs in the Attach Accept message. See clause TS 24.301 [51] clauses 8.2.1.1 and 8.2.1.8. | C |
| ePSUENetworkCapability | EPSUENetworkCapability | 0..1 | Shall contain the target UE network capability information octets sent in the Attach Request message, omitting the first two octets. Defined in TS 24.301 [51] clause 9.9.3.34. | C |
| initialRANUEContextSetup | EPSRANUEContext | 0..1 | Provides information sent in the INITIAL CONTEXT SETUP message from the MME to the RAN for a target. See TS 36.413 [38] clause 9.1.4.1. | C |
| mUSIMUERequestType | MUSIMUERequestType | 0..1 | Indicates a MUSIM UE has requested release of NAS signalling or has rejected paging. Include if sent in the REGISTRATION REQUEST message. Encoded per UE Request Type omitting the first two octets. See TS 24.301 [51] clause 9.9.3.65. | C |
| ePSNetworkPolicy | EPSNetworkPolicy | 0..1 | Indicates network policy information to the UE during attach or tracking area update procedures. Include if present in the ATTACH ACCEPT message. Encoded per Network policy type. See TS 24.301 [38] clause 9.9.3.52. | C |
| NOTE 1: List shall be included each time there is a change to the registration area.  NOTE 2: The location information was sent as a *userLocation (Location.locationInfo.userLocation)* between versions 18.0.0 and 18.2.0 of the present document. The location information may also be present in this field for backwards compatibility. | | | | |

\*\*\*\* START OF NEXT CHANGE (MAIN DOCUMENT) \*\*\*\*

6.3.2.2.6 Start of interception with EPS attached UE

The IRI-POI in the MME shall generate an xIRI containing an MMEStartOfInterceptionWithEPSAttachedUE record when the IRI-POI present in the MME detects that interception is activated on a UE that has already attached to the EPS. A UE is considered already attached to the EPS when the EMM state for that UE is EMM-REGISTERED. Therefore, the IRI-POI present in the MME shall generate the xIRI MMEStartOfInterceptionWithEPSAttachedUE record when it detects that a new interception for a UE is activated (i.e. provisioned by the LIPF) and the EPS mobility management state within the MME for that UE is EMM-REGISTERED.

**Table 6.3.2-6: Payload for MMEStartOfInterceptionWithEPSAttachedUE record**

| **Field name** | **Type** | **Cardinality** | **Description** | **M/C/O** |
| --- | --- | --- | --- | --- |
| attachType | EPSAttachType | 1 | Specifies the type of EPS Attach, see TS 24.301 [51] clause 9.9.3.11. This is derived from the information stored in the UE Context at the MME, see TS 23.401 [50] clause 5.7.2. | M |
| attachResult | EPSAttachResult | 1 | Specifies the result of the attach procedure, see TS 24.301 [51] clause 9.9.3.10. This is derived from the information stored in the UE Context at the MME, see TS 23.401 [50] clause 5.7.2. | M |
| iMSI | IMSI | 1 | IMSI associated with the target UE Context at the MME, see TS 23.401 [50] clause 5.7.2. | M |
| iMEI | IMEI | 0..1 | IMEI associated with the target UE Context at the MME, if available, see TS 23.401 [50] clause 5.7.2. | C |
| mSISDN | MSISDN | 0..1 | mSISDN associated with the target UE Context at the MME, if available. | C |
| gUTI | GUTI | 0..1 | Current GUTI associated with the target UE context at the MME, if available, see TS 23.401 [50] clause 5.7.2. | C |
| location | Location | 0..1 | Location information stored in the UE Context at the MME, if available, see TS 23.401 [50] clause 5.7.2.  Shall include all location information for the target UE available at the MME encoded as one of the following (see NOTE):  *- as a Location.fourGLocationInfo.ePSLocationInformation* parameter*.*  *- as a Location.fourGLocationInfo.ePSUserLocationInformation* parameter*.*  When Dual Connectivity is activated, the *additionalCellIDs* parameter *(Location.fourGLocationInfo.ePSLocationInformation.mMELocationInformation.additionalCellIDs)* shall also be populated, see clause 7.3.3. If available, other parameters reportable via *Location* shall be included. | C |
| ePSTAIList | TAIList | 0..1 | List of tracking areas associated with the registration area within which the UE is currently registered, see TS 24.301 [51] clause 9.9.3.33 and TS 23.401 [50] clause 5.7.2. | C |
| sMSServiceStatus | EPSSMSServiceStatus | 0..1 | Indicates the availability of SMS Services. Shall be provided if present in the UE Context at the MME, see TS 23.401 [50] clause 5.7.2. | C |
| eMM5GRegStatus | EMM5GMMStatus | 0..1 | UE Status, if present in the UE Context at the MME, see TS 24.501 [13] clause 9.11.3.56. | C |
| pagingRestrictionIndicator | PagingRestrictionIndicator | 0..1 | Indicates if paging is restricted or the type of paging allowed. Shall be included if known at the NF context. Encoded per TS 24.301 [51] clause 9.9.3.66, omitting the first two octets. | C |
| rATType | RATType | 0..1 | RAT Type shall be present if known by the MME. RAT Type is determined by the MME during the attach procedure. Shall be included if known at the NF context. See TS 23.401 [50] clause 4.3.5.3. | C |
| rRCEstablishmentCause | EPSRRCEstablishmentCause | 0..1 | Indicates the reason for UE RRC Connection Establishment. Shall be included if known at the NF context. See TS 36.413 [38] clause 9.2.1.3a. | C |
| s1Information | S1Information | 0..1 | Provides application layer related information for the serving Global RAN Node provided by the eNB node to the serving MME during S1 setup. Shall be included if known at the NF context. See TS 36.413 [38] clauses 9.1.8.4 and 9.1.8.5. Shall only be sent if location information reporting is authorized. | C |
| nASTransportInitialInformation | EPSNASTransportInitialInformation | 0..1 | Provides information related to the NAS Transport setup for the target UE over the S1 interface. Shall be included when received by the MME per TS 36.413 [38]. This parameter is only conditional for backward compatibility. See TS 36.413 [38] clause 9.1.7.1. | C |
| equivalentPLMNList | PLMNList | 0..1 | Provides a list of equivalent PLMNs. Shall be included if known at the NF. See clause TS 24.301 [51] clauses 8.2.1.1 and 8.2.1.8. | C |
| ePSUENetworkCapability | EPSUENetworkCapability | 0..1 | Shall contain the target UE network capability information Shall be included if known at the NF context. Encoded per TS 24.301 [51] clause 9.9.3.34 omitting the first two octets. | C |
| initialRANUEContextSetup | EPSRANUEContext | 0..1 | Provides information about the RAN context for the UE as known at the MME. Shall be included if known at the NF context. See TS 36.413 [38] clause 9.1.4.1. | C |
| ePSNetworkPolicy | EPSNetworkPolicy | 0..1 | Indicates network policy information to the UE during attach or tracking area update procedures. Shall be included if known at the NF context. Encoded per Network policy type. See TS 24.301 [38] clause 9.9.3.52. | C |
| NOTE: The location information was sent as a *userLocation (Location.locationInfo.userLocation)* between versions 18.0.0 and 18.2.0 of the present document. The location information may also be present in this field for backwards compatibility. | | | | |

The IRI-POI present in the MME generating an xIRI containing an MMEStartOfInterceptionWithEPSAttachedUE record shall set the Payload Direction field in the PDU header to *not applicable* (see ETSI TS 103 221-2 [8] clause 5.2.6).

\*\*\*\* END OF ALL CHANGES \*\*\*\*