

CHANGE REQUEST

⌘ **33.108 CR CRNum** ⌘ rev - ⌘ Current version: **5.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

| | | |
|------------------------|---|---|
| Title: | ⌘ | Essential correction to the LI events generated during RAU, when PDP context is active |
| Source: | ⌘ | SA WG3-LI (Nokia, Alcatel, Siemens) |
| Work item code: | ⌘ | SEC1 |
| | | Date: ⌘ 24.09.2002 |
| Category: | ⌘ | F |
| | | Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction 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. |
| | | Release: ⌘ Rel-5 |
| | | Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) |

| | | |
|--------------------------------------|---|---|
| Reason for change: | ⌘ | Currently, 33.107 and 33.108 do not offer a proper matching of events generated once an inter-SGSN RAU is underway for a target, which has at least one PDP context active. In case PLMN changes, LEMF would expects a BEGIN record for 'Start of interception with PDP context active' event . Otherwise, the CONTINUE record would be more appropriate.The problem may be solved either in an intercepting GSN, or in a DF/MF. Remove the inconsistent descriptions for RAU event. |
| Summary of change: | ⌘ | Correction and clarification for CONTINUE record for 'Start of interception with PDP context active' event and for RAU event. |
| Consequences if not approved: | ⌘ | Misalignment of 33.107 with 33.108, ambiguity and possible inconsistent implementations. |

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|------------------------------|---|--|---|---|--|---|--|---|--|---|
| Clauses affected: | ⌘ | 6.5, 6.5.1.1, 6.5.1.2, 6.5.1.3 | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘ | Y | N | | X | | X | | X |
| Y | N | | | | | | | | | |
| | X | | | | | | | | | |
| | X | | | | | | | | | |
| | X | | | | | | | | | |
| Other comments: | ⌘ | | | | | | | | | |

6.5 IRI for packet domain

Intercept related information will in principle be available in the following phases of a data transmission:

1. At connection attempt when the target identity becomes active, at which time packet transmission may or may not occur (set up of a data context, target may be the originating or terminating party);
2. At the end of a connection, when the target identity becomes inactive (removal of a data context);
3. At certain times when relevant information are available.

In addition, information on non-transmission related actions of a target constitute IRI and is sent via HI2, e.g. information on subscriber controlled input.

The intercept related information (IRI) may be subdivided into the following categories:

1. Control information for HI2 (e.g. correlation information);
2. Basic data context information, for standard data transmission between two parties.

The events defined in ref [11] are used to generate records for the delivery via HI2.

There are eight different event types received at DF2 level. According to each event, a Record is sent to the LEMF if this is required. The following table gives the mapping between event type received at DF2 level and record type sent to the LEMF.

Table 6.1: Mapping between UMTS Data Events and HI2 records type

| Event | IRI Record Type |
|---|-----------------|
| GPRS attach | REPORT |
| GPRS detach | REPORT |
| PDP context activation (successful) | BEGIN |
| PDP context modification | CONTINUE |
| PDP context activation (unsuccessful) | REPORT |
| Start of intercept with PDP context active <u>(in case:</u> <u>- interception has been activated after PDP context setup;</u> <u>- or when PLMN changes</u> <u>- in case the intercepted subscriber enters an interception area and has at</u> <u>least one PDP context active)</u> | BEGIN |
| Start of intercept with PDP context active (otherwise) | CONTINUE |
| PDP context deactivation | END |
| Location update | REPORT |
| SMS | REPORT |
| ServingSystem | REPORT |

A set of information is used to generate the records. The records used transmit the information from mediation function to LEMF. This set of information can be extended in the GSN or DF2 MF, if this is necessary in a specific country. The following table gives the mapping between information received per event and information sent in records.

Table 6.2: Mapping between Events information and IRI information

| parameter | description | HI2 ASN.1 parameter |
|----------------------------------|--|--|
| observed MSISDN | Target Identifier with the MSISDN of the target subscriber (monitored subscriber). | partyInformation (party-identity) |
| observed IMSI | Target Identifier with the IMSI of the target subscriber (monitored subscriber). | partyInformation (party-identity) |
| observed IMEI | Target Identifier with the IMEI of the target subscriber (monitored subscriber) | partyInformation (party-identity) |
| observed PDP address | PDP address used by the target.. | partyInformation (services-data-information) |
| event type | Description which type of event is delivered: PDP Context Activation, PDP Context Deactivation,GPRS Attach, etc. | gPRSevent |
| event date | Date of the event generation in the xGSN | timeStamp |
| event time | Time of the event generation in the xGSN | |
| access point name | The APN of the access point | partyInformation (services-data-information) |
| PDP type | This field describes the PDP type as defined in TS GSM 09.60, TS GSM 04.08, TS GSM 09.02 | partyInformation (services-data-information) |
| initiator | This field indicates whether the PDP context activation, deactivation, or modification is MS directed or network initiated. | initiator |
| correlation number | Unique number for each PDP context delivered to the LEMF, to help the LEA, to have a correlation between each PDP Context and the IRI. | gPRSCorrelationNumber |
| lawful interception identifier | Unique number for each lawful authorization. | lawfulInterceptionIdentifier |
| location information | This field provides the service area identity, RAI and/or location area identity that is present at the SGSN at the time of event record production. | locationOfTheTarget |
| SMS | The SMS content with header which is sent with the SMS-service | sMS |
| failed context activation reason | This field gives information about the reason for a failed context activation of the target subscriber. | gPRSOperationErrorCode |
| failed attach reason | This field gives information about the reason for a failed attach attempt of the target subscriber. | gPRSOperationErrorCode |
| service center address | This field identifies the address of the relevant server within the calling (if server is originating) or called (if server is terminating) party address parameters for SMS-MO or SMS-MT. | serviceCenterAddress |
| umts QOS | This field indicates the Quality of Service associated with the PDP Context procedure. | qOS |
| context deactivation reason | This field gives information about the reason for context deactivation of the target subscriber. | gPRSOperationErrorCode |
| network identifier | Operator ID plus SGSN or GGSN address. | networkIdentifier |
| iP assignment | Observed PDP address is statically or dynamically assigned. | iP-assignment |
| SMS originating address | Identifies the originator of the SMS message. | DataNodeAddress |
| SMS terminating address | Identifies the intended recipient of the SMS message. | DataNodeAddress |
| SMS initiator | Indicates whether the SMS is MO, MT, or Undefined | sms-initiator |
| serving SGSN number | An E.164 number of the serving SGSN. | servingSGSN-Number |
| serving SGSN address | An IP address of the serving SGSN. | servingSGSN-Address |

NOTE: LIID parameter must be present in each record sent to the LEMF.

6.5.1.1 REPORT record information

The REPORT record is used to report non-communication related subscriber actions (events) and for reporting unsuccessful packet-mode communication attempts.

The REPORT record shall be triggered when:

- the intercept subject's mobile station performs a GPRS attach procedure (successful or unsuccessful);
- the intercept subject's mobile station performs a GPRS detach procedure;
- the intercept subject's mobile station is unsuccessful at performing a PDP context activation procedure;
- the intercept subject's mobile station performs a cell, routing area, or combined cell and routing area update;
the intercept subject's mobile station sends an SMS-Mobile Originated (MO) communication. Dependent on national requirements, the triggering event shall occur either when the 3G SGSN receives the SMS from the target MS or, when the 3G SGSN receives notification that the SMS-Centre successfully received the SMS;
for GSM and UMTS systems deployed in the U.S., a REPORT record shall be triggered when the 3G SGSN receives an SMS-MO communication from the intercept subject's mobile station;
- the intercept subject's mobile station receives a SMS Mobile-Terminated (MT) communication. Dependent on national requirements, the triggering event shall occur either when the 3G SGSN receives the SMS from the SMS-Centre or, when the 3G SGSN receives notification that the target MS successfully received the SMS;
for GSM and UMTS systems deployed in the U.S., a REPORT record shall be triggered when the 3G SGSN receives an SMS-MT communication from the SMS-Centre destined for the intercept subject's mobile station;
- as a national option, a mobile terminal is authorized for service with another network operator or service provider.

Table 6.3: GPRS Attach REPORT Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|--|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| event type | C | Provide GPRS Attach event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| network identifier | M | Shall be provided. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| failed attach reason | C | Provide information about the reason for failed attach attempts of the target subscriber. |

Table 6.4: GPRS Detach REPORT Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|--|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| event type | C | Provide GPRS Detach event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| network identifier | M | Shall be provided. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |

Table 6.5: PDP Context Activation (unsuccessful) REPORT Record

| Parameter | MOC | Description/Conditions |
|----------------------------------|-----|---|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| observed PDP address | C | Provide to identify either the: <ul style="list-style-type: none"> - static address requested by the intercept subject's MS in association with a subject-initiated PDP context activation request for unsuccessful PDP context activation requests; or - address offered by the network in association with a network-initiated PDP context activation request when the intercept subject's MS rejects the network-initiated PDP context activation. |
| iP assignment | C | Provide to indicate observed PDP address is statically or dynamically assigned. |
| event type | C | Provide PDP Context Activation event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| access point name | C | Provide to identify either the: <ul style="list-style-type: none"> - packet data network to which the intercept subject requested to be connected when the intercept subject's mobile station is unsuccessful at performing a PDP context activation procedure (MS to Network); or - access point of the packet data network that requested to be connected to the MS when the intercept subject's mobile station rejects a network-initiated PDP context activation (Network to MS). |
| PDP type | C | Provide to describe the PDP type of the observed PDP address. The PDP Type defines the end user protocol to be used between the external packet data network and the MS. |
| Initiator | C | Provide to indicate whether the PDP context activation is network-initiated, intercept-subject-initiated, or not available. |
| network identifier | M | Shall be provided. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| failed context activation reason | C | Provide information about the reason for failed context activation attempts of the target subscriber. |
| umts QOS | C | Provide to identify the QOS parameters. |

Table 6.6: Location Information Update (with No PDP Context Active) REPORT Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|--|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| event type | C | Provide Location Information Update event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| network identifier | M | Shall be provided. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |

Table 6.7: SMS-MO and SMS-MT Communication REPORT Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|---|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| event type | C | Provide SMS event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| network identifier | M | Shall be provided. |
| lawful intercept identifier | M | Shall be provided. |
| SMS originating address | O | Provide to identify the originating and destination address of the SMS message |
| SMS destination address | | |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| SMS | C | Provide to deliver SMS content, including header which is sent with the SMS-service. |
| service center address | C | Provide to identify the address of the relevant SMS-C server. If SMS content is provided, this parameter is optional. |
| SMS initiator | M | Indicates whether the SMS is MO, MT, or Undefined. |

Table 6.8: Serving System REPORT Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|---|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| event type | C | Provide Serving System event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| network identifier | M | Network identifier of the HLR reporting the event. |
| lawful intercept identifier | M | Shall be provided. |
| servingSGSN-Number | C | Provide to identify the E.164 number of the serving SGSN. |
| servingSGSN-Address | C | Provide to identify the IP address of the serving SGSN. |

6.5.1.2 BEGIN record information

The BEGIN record is used to convey the first event of packet-data communication interception.

The BEGIN record shall be triggered when:

- successful PDP context activation;
- the interception of a subject's communications is started and at least one PDP context is active. If more than one PDP context is active, a BEGIN record shall be generated for each PDP context that is active
- during the inter-SGSN RAU, when target has got at least one PDP context active and the PLNM has changed.
- the subscriber entered an interception area and has at least one PDP context active

Table 6.9: PDP Context Activation (successful) BEGIN Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|--|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| observed PDP address | C | Provide to identify one of the following: <ul style="list-style-type: none"> - static address requested by the intercept subject's MS, and allocated by the Network for a successful PDP context activation; - address allocated dynamically by the network to the intercept subject MS in association with a PDP context activation (i.e., address is sent by the Network in an Activate PDP Context Accept) for a successful PDP context activation procedure when the PDP Context activation request does not contain a static PDP address; or - address offered by the network in association with a network-initiated PDP context activation request when the intercept subject's MS accepts the network-initiated PDP context activation request. |
| iP assignment | C | Provide to indicate observed PDP address is statically or dynamically assigned. |
| event type | C | Provide PDP Context Activation event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| access point name | C | Provide to identify the: <ul style="list-style-type: none"> - packet data network to which the intercept subject requested to be connected when the intercept subject's MS is successful at performing a PDP context activation procedure (MS to Network). - access point of the packet data network that requested to be connected to the MS when the intercept subject's MS accepts a network-initiated PDP context activation (Network to MS). |
| PDP type | C | Provide to describe the PDP type of the observed PDP address. The PDP Type defines the end user protocol to be used between the external packet data network and the MS. |
| Initiator | C | Provide to indicate whether the PDP context activation is network-initiated, intercept-subject-initiated, or not available. |
| network identifier | M | Shall be provided. |
| correlation number | C | Provide to uniquely identify the PDP context delivered to the LEMF and to correlate IRI records with CC. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| umts QOS | C | Provide to identify the QOS parameters. |

Table 6.10: Start Of Interception (with PDP Context Active) BEGIN Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|--|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| observed PDP address | C | Provide to identify the: <ul style="list-style-type: none"> - static address requested by the intercept subject's MS, and allocated by the Network for a successful PDP context activation. - address allocated dynamically by the network to the intercept subject MS in association with a PDP context activation (i.e., address is sent by the Network in an Activate PDP Context Accept) for a successful PDP context activation procedure when the PDP Context activation request does not contain a static PDP address. - address offered by the network in association with a network-initiated PDP context activation request when the intercept subject's MS accepts the network-initiated PDP context activation request. |
| event type | C | Provide Start Of Interception With PDP Context Active event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| access point name | C | Provide to identify the: <ul style="list-style-type: none"> - packet data network to which the intercept subject requested to be connected when the intercept subject's MS is successful at performing a PDP context activation procedure (MS to Network). - access point of the packet data network that requested to be connected to the MS when the intercept subject's MS accepts a network-initiated PDP context activation (Network to MS). |
| PDP type | C | Provide to describe the PDP type of the observed PDP address. The PDP Type defines the end user protocol to be used between the external packet data network and the MS. |
| Initiator | C | Provide to indicate whether the PDP context activation is network-initiated, intercept-subject-initiated, or not available. |
| network identifier | M | Shall be provided. |
| correlation number | C | Provide to uniquely identify the PDP context delivered to the LEMF and to correlate IRI records with CC. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| umts QOS | C | Provide to identify the QOS parameters. |

6.5.1.3 CONTINUE record information

The CONTINUE record is used to convey events during an active packet-data communication PDP Context.

The CONTINUE record shall be triggered when:

- ____—An active PDP context is modified;
- during the inter-SGSN RAU, when target has got at least one PDP context active and the PLMN does not change.

Table 6.11: PDP Context Modification CONTINUE Record

| Parameter | MOC | Description/Conditions |
|-----------------------------|-----|---|
| observed MSISDN | C | Provide at least one and others when available. |
| observed IMSI | | |
| observed IMEI | | |
| observed PDP address | C | The observed address after modification Provide to identify the: <ul style="list-style-type: none"> - static address requested by the intercept subject's MS, and allocated by the Network for a successful PDP context activation. - address allocated dynamically by the network to the intercept subject MS in association with a PDP context activation (i.e., address is sent by the Network in an Activate PDP Context Accept) for a successful PDP context activation procedure when the PDP Context activation request does not contain a static PDP address. - address offered by the network in association with a network-initiated PDP context activation request when the intercept subject's MS accepts the network-initiated PDP context activation request. |
| event type | C | Provide the PDP Context Modification event type. |
| event date | M | Provide the date and time the event is detected. |
| event time | | |
| access point name | C | Provide to identify the: <ul style="list-style-type: none"> - packet data network to which the intercept subject requested to be connected when the intercept subject's MS is successful at performing a PDP context activation procedure (MS to Network). - access point of the packet data network that requested to be connected to the MS when the intercept subject's MS accepts a network-initiated PDP context activation (Network to MS). |
| PDP type | C | Provide to describe the PDP type of the observed PDP address. The PDP Type defines the end user protocol to be used between the external packet data network and the MS. |
| initiator | C | Provide to indicate whether the PDP context activation is network-initiated, intercept-subject-initiated, or not available. |
| network identifier | M | Shall be provided. |
| correlation number | C | Provide to uniquely identify the PDP context delivered to the LEMF used to correlate IRI records with CC. |
| lawful intercept identifier | M | Shall be provided. |
| location information | C | Provide, when authorized, to identify location information for the intercept subject's MS. |
| umts QOS | C | Provide to identify the QOS parameters. |

Table 6.11a: Start Of Interception (with PDP Context Active) CONTINUE Record

| <u>Parameter</u> | <u>MOC</u> | <u>Description/Conditions</u> |
|------------------------------------|------------|--|
| <u>observed MSISDN</u> | <u>C</u> | <u>Provide at least one and others when available.</u> |
| <u>observed IMSI</u> | | |
| <u>observed IMEI</u> | | |
| <u>observed PDP address</u> | <u>C</u> | <u>Provide to identify the:</u> <ul style="list-style-type: none"> - <u>static address requested by the intercept subject's MS, and allocated by the Network for a successful PDP context activation.</u> - <u>address allocated dynamically by the network to the intercept subject MS in association with a PDP context activation (i.e., address is sent by the Network in an Activate PDP Context Accept) for a successful PDP context activation procedure when the PDP Context activation request does not contain a static PDP address.</u> - <u>address offered by the network in association with a network-initiated PDP context activation request when the intercept subject's MS accepts the network-initiated PDP context activation request.</u> |
| <u>event type</u> | <u>C</u> | <u>Provide the Continue interception with active PDP event type.</u> |
| <u>event date</u> | <u>M</u> | <u>Provide the date and time the event is detected.</u> |
| <u>event time</u> | | |
| <u>access point name</u> | <u>C</u> | <u>Provide to identify the:</u> <ul style="list-style-type: none"> - <u>packet data network to which the intercept subject requested to be connected when the intercept subject's MS is successful at performing a PDP context activation procedure (MS to Network).</u> - <u>access point of the packet data network that requested to be connected to the MS when the intercept subject's MS accepts a network-initiated PDP context activation (Network to MS).</u> |
| <u>PDP type</u> | <u>C</u> | <u>Provide to describe the PDP type of the observed PDP address. The PDP Type defines the end user protocol to be used between the external packet data network and the MS.</u> |
| <u>network identifier</u> | <u>M</u> | <u>Shall be provided.</u> |
| <u>correlation number</u> | <u>C</u> | <u>Provide to uniquely identify the PDP context delivered to the LEMF used to correlate IRI records with CC.</u> |
| <u>lawful intercept identifier</u> | <u>M</u> | <u>Shall be provided.</u> |
| <u>location information</u> | <u>C</u> | <u>Provide, when authorized, to identify location information for the intercept subject's MS.</u> |
| <u>QOS</u> | <u>C</u> | <u>Provide to identify the QOS parameters.</u> |