3GPP TSG-SA3 LI Meeting #13
Rome, Italy, 14 – 16 April 2004

Tdoc ⌘ S3LI04_063r1

CR-Form-v7

CHANGE REQUEST

| ⌘ | **33.108** CR **CRNum** | ⌘ **rev** | **-** | ⌘ | Current version: | **6.5.0** | ⌘ |

*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 **X**

Title: ⌘	WGS 84 coordinates length correction	
Source: ⌘	SA3-LI	
Work item code:⌘	SEC1-LI	***Date:*** ⌘ 15-04-2004
Category: ⌘	**A**	***Release:*** ⌘ Rel-6

Use one 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.

Use one 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: ⌘	In the current version of TS 33.108 the **wGS84Coordinates** parameter may have a maximum length of 10 octets. This is not in line with the mentioned reference GSM 03.32, in which the coding of e.g. Ellipsoid Point with uncertainty Ellipse allows up to 11 octects. Moreover reference to old GSM 03.32 (last version is in rel-98) breaks self-consistency inside the same release of 3GPP specification.
Summary of change:⌘	The length of **wGS84Coordinates** is corrected by removing the size constraint. Reference to GSM 03.32 is replaced by a reference to 3GPP TS 23.032.
Consequences if not approved: ⌘	Wrong information transferred over HI2 interface to LEA.

Clauses affected: ⌘	2, B.3, B.3a	

	Y	N		
Other specs affected: ⌘		X	Other core specifications ⌘	
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	In correcting the parameter length, the same approach (removal of size constraint) which was agreed in SA3-LI#12 for QoS parameter is used.

*** FIRST MODIFICATION ***

2   References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1]   TR 101 331: "Telecommunications security; Lawful Interception (LI); requirements of Law Enforcement Agencies".

[2]   ES 201 158: "Telecommunications security; Lawful Interception (LI); Requirements for network functions".

[3]   ETR 330: "Security Techniques Advisory Group (STAG); A guide to legislative and regulatory environment".

[4]   GSM 09.02: "Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification".

[5]   ITU-T Recommendation X.680: "Specification of Abstract Syntax Notation One (ASN.1)".

[6]   ITU-T Recommendation X.690: "Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)".

[7]   ITU-T Recommendation X.880: "Information technology - Remote Operations: Concepts, model and notation".

[8]   ITU-T Recommendation X.882: "Information technology - Remote Operations: OSI realizations - Remote Operations Service Element (ROSE) protocol specification".

[9]   EN 300 940, GSM 04.08: "Digital cellular communications system (Phase 2+); Mobile radio interface layer 3 specification".

[10]   TS 101 509 "Digital cellular telecommunications system (Phase 2+); Lawful interception; Stage 2 (GSM 03.33).

[11]   GSM 03.03: "Digital cellular telecommunications system (Phase 2+); Numbering, addressing and identification".

[12]   GSM 09.60 (EN 301 347): "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); GPRS tunelling protocol (GTP) across Gn and Gp Interface".

[13]   STD 9 "File Transfer Protocol (FTP)", October 1985.

[14]   GSM 12.15 "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication Management; Charging & Billing; GSM call and event data for the Packet Switched (PS) domain)".

[15]   STD0005 "Internet Protocol".

[16]   STD0007 "Transmission Control Protocol".

[17]   3GPP TS 29.060 "GPRS Tunnelling Protocol".

[18]   3GPP TS 33.106 "Lawful Interception Requirements".

[19]   3GPP TS 33.107 "Lawful Interception Architecture and Functions".

[20]   3GPP TS 23.107 "QoS Concepts and Architecture".

[21]   3GPP TS 24.008: "3GPP Technical Specification Group Core Network; Mobile radio interface layer 3 specification".

[22]   ES 201 671 version 2.1.1: "Handover Interface for the lawful interception of telecommunications traffic".

[23]   J-STD-25-A: "Lawfully Authorized Electronic Surveillance".

[24]   ETSI TS 101 671 version 2.3.1: "Handover Interface for the lawful interception of telecommunications traffic".

[25]   3GPP TS 23.003 "3rd Generation Partnership Project; Technical Specification Group Core Network; Numbering, addressing, and identification".

[26]   RFC 3261: "SIP: Session Initiation Protocol".

[27]   RFC 1006: "ISO Transport Service on top of the TCP".

[28]   RFC 2126: "ISO Transport Service on top of TCP (ITOT)".

[29]   ITU-T Recommendation Q.763: "Formats and Codes of the ISDN User Part of Signalling System No. 7".

[30]   ETSI EN 300 356 (all parts): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface".

[31]   ETSI EN 300 403-1 (V1.2.2): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

[32]   ETSI EN 300 286-1: "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[33]   ITU-T Recommendation Q.763: "Signalling System No.7 - ISDN User Part formats and codes".

[34]   ITU-T Recommendation Q.931: "ISDN user-network interface layer 3 specification for basic call control".

[35]   3GPP TS 29.002: "3rd Generation Partnership Project; Technical Specification Group Core Network; Mobile Application Part (MAP) specification".

[36]   RFC 2806: "URLs for Telephone Calls".

[37]   3GPP TS 23.032 "3rd Generation Partnership Project; Technical Specification Group Core Network; Universal Geographical Area Description (GAD)".

*** NEXT MODIFICATION ***

B.3   Intercept related information (HI2)

Declaration of ROSE operation umts-sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data UmtsIRIsContent must be considered.

ASN1 description of IRI (HI2 interface)

```
UmtsHI2Operations {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulintercept(2)
threeGPP(4) hi2(1) r6(6) version-34(34)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN
```

```
IMPORTS

        OPERATION,
        ERROR
            FROM Remote-Operations-Information-Objects
            {joint-iso-itu-t(2) remote-operations(4) informationObjects(5) version1(0)}

        LawfulInterceptionIdentifier,
        TimeStamp,
        Network-Identifier,
        National-Parameters,
        DataNodeAddress,
        IPAddress,
        IP-value,
        X25Address

            FROM HI2Operations
            {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
                lawfulIntercept(2) hi2(1) version3(3)}; -- TS 101 671 Edition 3
```

```
-- Object Identifier Definitions

-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2DomainId OBJECT IDENTIFIER   ::= {threeGPPSUBDomainId hi2(1) r6(6) version-34(34)}
```

```
umts-sending-of-IRI  OPERATION ::=
{
    ARGUMENT    UmtsIRIsContent
    ERRORS      { OperationErrors }
    CODE        global:{threeGPPSUBDomainId hi2(1) opcode(1)}
}
-- Class 2 operation . The timer shall be set to a value between 3 s and 240 s.
-- The timer.default value is 60s.
-- NOTE:    The same note as for HI management operation applies.
```

```
UmtsIRIsContent     ::= CHOICE
{
    umtsiRIContent          UmtsIRIContent,
    umtsIRISequence         UmtsIRISequence
}

UmtsIRISequence     ::= SEQUENCE OF UmtsIRIContent

-- Aggregation of UmtsIRIContent is an optional feature.
-- It may be applied in cases when at a given point in time
-- several IRI records are available for delivery to the same LEA destination.
-- As a general rule, records created at any event shall be sent
-- immediately and not withheld in the DF or MF in order to
-- apply aggragation.
-- When aggregation is not to be applied,
-- UmtsIRIContent needs to be chosen.
```

```
UmtsIRIContent      ::= CHOICE
{
    iRI-Begin-record        [1] IRI-Parameters, -- include at least one optional parameter
    iRI-End-record          [2] IRI-Parameters,
    iRI-Continue-record     [3] IRI-Parameters, -- include at least one optional parameter
    iRI-Report-record       [4] IRI-Parameters  -- include at least one optional parameter
}
```

```
unknown-version         ERROR ::= { CODE local:0}
missing-parameter       ERROR ::= { CODE local:1}
unknown-parameter-value ERROR ::= { CODE local:2}
unknown-parameter       ERROR ::= { CODE local:3}

OperationErrors ERROR ::=
{
    unknown-version |
    missing-parameter |
    unknown-parameter-value |
    unknown-parameter
}
-- This values may be sent by the LEMF, when an operation or a parameter is misunderstood.
```

```
-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules.
IRI-Parameters      ::= SEQUENCE
{
    hi2DomainId             [0] OBJECT IDENTIFIER,  -- 3GPP HI2 domain
    iRIversion              [23] ENUMERATED
    {
        version2 (2),
        …,
        version3 (3)(3),
        version4 (4)
    } OPTIONAL,
        -- if not present, it means version 1 is handled
    lawfulInterceptionIdentifier    [1] LawfulInterceptionIdentifier,
        -- This identifier is associated to the target.
    timeStamp               [3] TimeStamp,
        -- date and time of the event triggering the report.)
    initiator               [4] ENUMERATED
    {
        not-Available       (0),
        originating-Target  (1),
            -- in case of GPRS, this indicates that the PDP context activation, modification
            -- or deactivation is MS requested
        terminating-Target  (2),
            -- in case of GPRS, this indicates that the PDP context activation, modification or
            -- deactivation is network initiated
    ...
    } OPTIONAL,

    locationOfTheTarget     [8] Location OPTIONAL,
        -- location of the target subscriber
    partyInformation        [9] SET SIZE (1..10) OF PartyInformation OPTIONAL,
        -- This parameter provides the concerned party, the identiy(ies) of the party
        --)and all the information provided by the party.

    serviceCenterAddress    [13] PartyInformation OPTIONAL,
        -- e.g. in case of SMS message this parameter provides the address of  the relevant
        -- server within the calling (if server is originating) or called (if server is
        -- terminating) party address parameters
    sMS                     [14] SMS-report OPTIONAL,
        -- this parameter provides the SMS content and associated information

    national-Parameters     [16] National-Parameters OPTIONAL,
    gPRSCorrelationNumber   [18] GPRSCorrelationNumber OPTIONAL,
    gPRSevent               [20] GPRSEvent OPTIONAL,
        -- This information is used to provide particular action of the target
        -- such as attach/detach
    sgsnAddress             [21] DataNodeAddress OPTIONAL,
    gPRSOperationErrorCode  [22] GPRSOperationErrorCode OPTIONAL,
    ggsnAddress             [24] DataNodeAddress OPTIONAL,
    qOS                     [25] UmtsQos OPTIONAL,
    networkIdentifier       [26] Network-Identifier OPTIONAL,
    sMSOriginatingAddress   [27] DataNodeAddress OPTIONAL,
    sMSTerminatingAddress   [28] DataNodeAddress OPTIONAL,
    iMSevent                [29] IMSevent OPTIONAL,
    sIPMessage              [30] OCTET STRING  OPTIONAL,
    servingSGSN-number      [31] OCTET STRING (SIZE (1..20))   OPTIONAL,
    servingSGSN-address     [32] OCTET STRING (SIZE (5..17))   OPTIONAL,
                                -- Octets are coded according to 3GPP TS 23.003 [25]
    ...
}
-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules
```

```
-- PARAMETERS FORMATS
```

```
PartyInformation          ::= SEQUENCE
{
    party-Qualifier    [0]  ENUMERATED
    {
        gPRS-Target(3),
        ...
    },
    partyIdentity      [1] SEQUENCE
    {
        imei                [1] OCTET STRING (SIZE (8)) OPTIONAL,
            -- See MAP format [4]

        imsi                [3] OCTET STRING (SIZE (3..8)) OPTIONAL,
            -- See MAP format [4] International Mobile
            -- Station Identity E.212 number beginning with Mobile Country Code

        msISDN              [6] OCTET STRING (SIZE (1..9)) OPTIONAL,
            -- MSISDN of the target, encoded in the same format as the AddressString
            -- parameters defined in MAP format document [4], § 14.7.8

        e164-Format         [7] OCTET STRING   (SIZE (1 .. 25)) OPTIONAL,
            -- E164 address of the node in international format. Coded in the same format as
            -- the calling party number  parameter of the ISUP (parameter part:[5])

        sip-url             [8] OCTET STRING    OPTIONAL,
            -- See [26]

        ...,
        tel-url             [9] OCTET STRING    OPTIONAL,
            -- See [36]
    },

    services-Data-Information   [4] Services-Data-Information OPTIONAL,
        -- This parameter is used to transmit all the information concerning the
        -- complementary information associated to the basic data call
    ...
}
```

```
Location    ::= SEQUENCE
{
    globalCellID      [2] GlobalCellID   OPTIONAL,
        --see MAP format (see [4])
    rAI               [4] Rai    OPTIONAL,
        -- the Routeing Area Identifier is coded in accordance with the § 10.5.5.15 of
        -- document [9] without the Routing Area Identification IEI (only the
        -- last 6 octets are used)
    gsmLocation       [5] GSMLocation OPTIONAL,
    umtsLocation      [6] UMTSLocation OPTIONAL,
    sAI               [7] Sai OPTIONAL,
        -- format:  PLMN-ID 3 octets (no. 1 – 3)
        --          LAC    2 octets (no. 4 – 5)
        --          SAC    2 octets (no. 6 – 7)
        --          (according to 3GPP TS 25.413)
    ...
}
```

```
GlobalCellID    ::= OCTET STRING  (SIZE (5..7))
Rai             ::= OCTET STRING (SIZE (6))
Sai             ::= OCTET STRING (SIZE (7))
```

```
GSMLocation     ::= CHOICE
{
    geoCoordinates  [1] SEQUENCE
    {
        latitude        [1] PrintableString (SIZE(7..10)),
                            -- format :    XDDMMSS.SS
        longitude       [2] PrintableString (SIZE(8..11)),
                            -- format :    XDDDMMSS.SS
        mapDatum        [3] MapDatum DEFAULT wGS84,
        ...
    },
        -- format :    XDDDMMSS.SS
        --             X            : N(orth), S(outh), E(ast), W(est)
        --             DD or DDD  : degrees (numeric characters)
        --             MM         : minutes (numeric characters)
```

```
            --          SS.SS      : seconds, the second part (.SS) is optionnal
            -- Example :
            --          latitude short form    N502312
            --          longitude long form    E1122312.18

    utmCoordinates  [2] SEQUENCE
    {
        utm-East        [1] PrintableString (SIZE(10)),
        utm-North       [2] PrintableString (SIZE(7)),
            -- example  utm-East    32U0439955
            --          utm-North   5540736
        mapDatum        [3] MapDatum DEFAULT wGS84,
        ...
    },

    utmRefCoordinates   [3] SEQUENCE
    {
        utmref-string       PrintableString (SIZE(13)),
        mapDatum            MapDatum DEFAULT wGS84,
        ...
    },
        -- example  32UPU91294045

    wGS84Coordinates    [4] OCTET STRING (SIZE(7..10))
        -- format is as defined in GSM 03.32[37]; polygon type of shape is not allowed.
}

MapDatum ::= ENUMERATED
{
    wGS84,
    wGS72,
    eD50,   -- European Datum 50
    ...
}
```

```
UMTSLocation ::= CHOICE {
    point                   [1] GA-Point,
    pointWithUnCertainty    [2] GA-PointWithUnCertainty,
    polygon                 [3] GA-Polygon
}
```

```
GeographicalCoordinates ::= SEQUENCE {
    latitudeSign            ENUMERATED { north, south },
    latitude                INTEGER (0..8388607),
    longitude               INTEGER (-8388608..8388607),
    ...
}
```

```
GA-Point ::= SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    ...
}
```

```
GA-PointWithUnCertainty ::=SEQUENCE {
    geographicalCoordinates     GeographicalCoordinates,
    uncertaintyCode             INTEGER (0..127)
}
```

```
maxNrOfPoints                   INTEGER ::= 15
```

```
GA-Polygon ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF
    SEQUENCE {
        geographicalCoordinates     GeographicalCoordinates,
        ...
    }
```

```
SMS-report      ::= SEQUENCE
{
    sMS-Contents    [3] SEQUENCE
    {
        sms-initiator       [1] ENUMERATED  -- party which sent the  SMS
        {
            target          (0),
            server          (1),
            undefined-party (2),
            ...
```

```
        },
        transfer-status      [2] ENUMERATED
        {
            succeed-transfer   (0),          -- the transfer of the SMS message succeeds
            not-succeed-transfer(1),
            undefined          (2),
            ...
        } OPTIONAL,
        other-message        [3] ENUMERATED  -- in case of terminating call, indicates if
                                             -- the server will send other SMS
        {
            yes          (0),
            no           (1),
            undefined    (2),
            ...
        } OPTIONAL,
        content              [4] OCTET STRING (SIZE (1 .. 270)) OPTIONAL,
                                    -- Encoded in the format defined for the SMS mobile
        ...
    }
}
```

```
GPRSCorrelationNumber ::= OCTET STRING (SIZE(8..20))
```

```
GPRSEvent ::= ENUMERATED
{
    pDPContextActivation                 (1),
    startOfInterceptionWithPDPContextActive (2),
    pDPContextDeactivation               (4),
    gPRSAttach                           (5),
    gPRSDetach                           (6),
    locationInfoUpdate                   (10),
    sMS                                  (11),
    pDPContextModification               (13),
    servingSystem                        (14),
    ...
}
-- see ref [10]
```

```
IMSevent ::= ENUMERATED
{
    sIPmessage  (1),
    ...
}
```

```
Services-Data-Information ::= SEQUENCE
{
    gPRS-parameters [1] GPRS-parameters OPTIONAL,
    ...
}
```

```
GPRS-parameters ::= SEQUENCE
{
    pDP-address-allocated-to-the-target    [1] DataNodeAddress OPTIONAL,
    aPN                      [2] OCTET STRING (SIZE(1..100)) OPTIONAL,
    pDP-type                 [3] OCTET STRING (SIZE(2)) OPTIONAL,
    ...
}
```

```
GPRSOperationErrorCode ::= OCTET STRING (SIZE(2))
-- refer to standard [9] for values(GMM cause or SM cause parameter).
```

```
UmtsQos ::= CHOICE
{
    qosMobileRadio [1] OCTET STRING,
        -- The qosMobileRadio parameter shall be coded in accordance with the § 10.5.6.5 of
        -- document [9] or [21] without the Quality of service IEI and Length of
        -- quality of service IE (. That is, first
        -- two octets carrying 'Quality of service IEI' and 'Length of quality of service
        -- IE' shall be excluded).
    qosGn [2] OCTET STRING
        -- qosGn parameter shall be coded in accordance with § 7.7.34 of document [17]
}
```

```
END -- OF UmtsHI2Operations
```

B.3a Interception related information (HI2 CS)

For North America the use of J-STD-25 A[23] is recommended.

Declaration of ROSE operation sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data IRI-Content must be considered.

ASN1 description of IRI (HI2 CS interface)

```
UmtsCS-HI2Operations
{ itu-t (0) identified-organization (4) etsi (0) securityDomain (2) lawfulIntercept (2) threeGPP(4)
hi2CS (3) version-12 (12)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN
```

```
IMPORTS OPERATION,
    ERROR
        FROM Remote-Operations-Information-Objects
        {joint-iso-itu-t (2) remote-operations(4) informationObjects(5) version1(0)}

    LawfulInterceptionIdentifier,
    TimeStamp,
    Intercepted-Call-State,
    PartyInformation,
    CallContentLinkCharacteristics,
    CommunicationIdentifier,
    CC-Link-Identifier,
    National-Parameters

    FROM HI2Operations
        {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
            lawfulIntercept(2) hi2(1) version3(3)} - Version 3 of TS 101 671 ASN.1

    Location,
    SMS-report

    FROM UmtsHI2Operations
        {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
            lawfulintercept(2) threeGPP(4) hi2(1) r6(6) version-34(34)};


-- Object Identifier Definitions

-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2CSDomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2CS(3) version-12(12)}
```

```
umtsCS-sending-of-IRI  OPERATION ::=
{
    ARGUMENT     UmtsCS-IRIsContent
    ERRORS       { OperationErrors }
    CODE         global:{ threeGPPSUBDomainID hi2CS(3) opcode(1)}
}
-- Class 2 operation. The timer shall be set to a value between 3 s and 240 s.
-- The timer.default value is 60s.
-- NOTE: The same note as for HI management operation applies.
```

```
UmtsCS-IRIsContent        ::= CHOICE
{
    iRIContent            UmtsCS-IRIContent,
    iRISequence           UmtsCS-IRISequence
)
```

```
UmtsCS-IRISequence      ::= SEQUENCE OF UmtsCS-IRIContent
    -- Aggregation of UmtsCS-IRIContent is an optional feature.
    -- It may be applied in cases when at a given point in time several IRI records are
    -- available for delivery to the same LEA destination.
    -- As a general rule, records created at any event shall be sent immediately and shall
    -- not held in the DF or MF in order to apply aggregation.
-- When aggregation is not to be applied, UmtsCS-IRIContent needs to be chosen.

UmtsCS-IRIContent       ::= CHOICE
{
    iRI-Begin-record        [1] IRI-Parameters,
        --at least one optional parameter must be included within the iRI-Begin-Record
    iRI-End-record          [2] IRI-Parameters,
    iRI-Continue-record     [3] IRI-Parameters,
        --at least one optional parameter must be included within the iRI-Continue-Record
    iRI-Report-record       [4] IRI-Parameters,
        --at least one optional parameter must be included within the iRI-Report-Record
    ...
}
```

```
unknown-version         ERROR ::= { CODE local:0}
missing-parameter       ERROR ::= { CODE local:1}
unknown-parameter-value ERROR ::= { CODE local:2}
unknown-parameter       ERROR ::= { CODE local:3}

OperationErrors ERROR ::=
{
    unknown-version |
    missing-parameter |
    unknown-parameter-value |
    unknown-parameter
}
--These values may be sent by the LEMF, when an operation or a parameter is misunderstood.
```

```
IRI-Parameters      ::= SEQUENCE
{
    hi2CSDomainId                       [0] OBJECT IDENTIFIER OPTIONAL, -- 3GPP HI2 CS domain

    iRIversion                          [23] ENUMERATED
    {
        version1(1),
        ...,
        version2(2)
    } OPTIONAL,
        -- if not present, it means version 1 is handled
    lawfulInterceptionIdentifier        [1] LawfulInterceptionIdentifier,
        -- This identifier is associated to the target.
    communicationIdentifier             [2] CommunicationIdentifier,
        -- used to uniquely identify an intercepted call.

    timeStamp                           [3] TimeStamp,
        -- date and time of the event triggering the report.
    intercepted-Call-Direct             [4] ENUMERATED
    {
        not-Available(0),
        originating-Target(1),
        terminating-Target(2),
    ...
    } OPTIONAL,
    intercepted-Call-State              [5] Intercepted-Call-State OPTIONAL,
        -- Not required for UMTS. May be included for backwards compatibility to GSM
    ringingDuration                     [6] OCTET STRING (SIZE (3)) OPTIONAL,
        -- Duration in seconds. BCD coded : HHMMSS
```

```
            -- Not required for UMTS. May be included for backwards compatibility to GSM
    conversationDuration            [7] OCTET STRING (SIZE (3)) OPTIONAL,
        -- Duration in seconds. BCD coded : HHMMSS
        -- Not required for UMTS. May be included for backwards compatibility to GSM
    locationOfTheTarget             [8] Location OPTIONAL,
        -- location of the target subscriber
    partyInformation                [9] SET SIZE (1..10) OF PartyInformation OPTIONAL,
        -- This parameter provides the concerned party (Originating, Terminating or forwarded
        -- party), the identity(ies) of the party and all the information provided by the party.
    callContentLinkInformation      [10] SEQUENCE
    {
        cCLink1Characteristics     [1] CallContentLinkCharacteristics OPTIONAL,
            -- information concerning the Content of Communication Link Tx channel established
            -- toward the LEMF (or the sum signal channel, in case of mono mode).
        cCLink2Characteristics     [2] CallContentLinkCharacteristics OPTIONAL,
            -- information concerning the Content of Communication Link Rx channel established
            -- toward the LEMF.
        ...
    } OPTIONAL,
    release-Reason-Of-Intercepted-Call [11] OCTET STRING (SIZE (2)) OPTIONAL,
        -- Release cause coded in [31] format.
        -- This parameter indicates the reason why the
        -- intercepted call cannot be established or why the intercepted call has been
        -- released after the active phase.
    nature-Of-The-intercepted-call    [12] ENUMERATED
    {
        --Not required for UMTS. May be included for backwards compatibility to GSM
        --Nature of the intercepted "call":
        gSM-ISDN-PSTN-circuit-call(0),
            -- the possible UUS content is sent through the HI2 or HI3 "data" interface
            -- the possible call content call is established through the HI3 „circuit„ interface
        gSM-SMS-Message(1),
            -- the SMS content is sent through the HI2 or HI3 "data" interface
        uUS4-Messages(2),
            -- the UUS content is sent through the HI2 or HI3 "data" interface
        tETRA-circuit-call(3),
            -- the possible call content call is established through the HI3 "circuit" interface
            -- the possible data are sent through the HI3 "data" interface
        teTRA-Packet-Data(4),
            -- the data are sent through the HI3 "data" interface
        gPRS-Packet-Data(5),
            -- the data are sent through the HI3 "data" interface
        ...
    } OPTIONAL,
    serviceCenterAddress            [13] PartyInformation OPTIONAL,
        -- e.g. in case of SMS message this parameter provides the address of  the relevant
        -- server within the calling (if server is originating) or called
        -- (if server is terminating) party address parameters
    sMS                             [14] SMS-report OPTIONAL,
        -- this parameter provides the SMS content and associated information
    cC-Link-Identifier              [15] CC-Link-Identifier OPTIONAL,
        -- Depending on a network option, this parameter may be used to identify a CC link
        -- in case of multiparty calls.
    national-Parameters             [16] National-Parameters OPTIONAL,
    ...,
    umts-Cs-Event                   [33] Umts-Cs-Event OPTIONAL
    -- Care should be taken to ensure additional parameter numbering does not conflict with
    -- ETSI TS 101 671 or Annex B.3 of this document (PS HI2).
}


Umts-Cs-Event ::= ENUMERATED
{
    call-establishment             (1),
    answer                         (2),
    supplementary-Service          (3),
    handover                       (4),
    release                        (5),
    sMS                            (6),
    location-update                (7),
    subscriber-Controlled-Input    (8),
    ...
}

END – OF UmtsCS-HI2Operations
```

*** END OF MODIFICATIONS ***