**3GPP TSG-CT WG4 Meeting #98eC4-20xxxx**

**Electronic meeting, 02nd – 12th June 2020 was C4-203375**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.080** | **CR** | **0068** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

|  |
| --- |
|  |
| ***Title:***  | Supplementary LCS Service Operations |
|  |  |
| ***Source to WG:*** | CATT |
| ***Source to TSG:*** | C4 |
|  |  |
| ***Work item code:*** | 5G\_eLCS |  | ***Date:*** | 2020-05-08 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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:*** | The UE initiated CancelDeferredLocation operation should be differentiated with LCS client CancelDeferredLocation operation because they are triggered from UE and LCS client respectively. Furthermore, UE Location Privacy Setting procedure is defined to update UE Location Privacy Indication information in UE’s subscription in current TS 23.273. And, UE Location Privacy Indication information may be included in Location Notification Return Result message to update UE Location Privacy Indication information in UDLM(see subclause 6.1.2, TS 23.273). |
|  |  |
| ***Summary of change:*** | 1. Add MSCancelDeferredLocation operation to differentiate with network initiated cancel deferred location procedure.
2. Add LocationPrivacySetting opertion to specify UE initiated Location Privacy Setting procedure.
3. Include UE Location Privacy Indication information in Location Notification procedure
 |
|  |  |
| ***Consequences if not approved:*** | 1. Miss UE initiated CancelDeferredLocation procedure
2. Miss the capablity of UE initiated Location Privacy Setting
 |
|  |  |
| ***Clauses affected:*** | 4.2.2.x(new), 4.2.2.y(new), 4.4.2, 4.4.3.76, 4.4.3.z1(new), 4.4.3.z2(new), 4.4.3.z3(new), 4.4.3.z4(new) , 4.4.3.z5(new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | The changes add a new backward compatible feature.  |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* First Change \* \* \* \*

## 1.1 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] 3GPP TR 21.905: "3G Vocabulary".

[2] 3GPP TS 22.024: "Description of Charge Advice Information (CAI)".

[3] 3GPP TS 44.006: "Mobile Station ‑ Base Station System (MS ‑ BSS) interface Data Link (DL) layer specification".

[4] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".

[5] 3GPP TS 24.008: "Mobile radio interface layer 3 specification".

[6] 3GPP TS 24.010: "Mobile radio interface layer 3; Supplementary services specification; General aspects".

[7] 3GPP TS 24.080: "Mobile radio interface layer 3 supplementary services specification; Formats and coding".

[8] 3GPP TS 24.090: "Unstructured supplementary services operation ‑ Stage 3".

[9] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[10] 3GPPTS 29.011: "Signalling interworking for supplementary services".

[11] ITU-T Recommendation X.680: "Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[11b] ITU-T Recommendation X.681: "Information technology – Abstract Syntax Notation One (ASN.1): Information object specification".

[12] ITU-T Recommendation X.690: "Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".

[13] ITU-T Recommendation X.880: "Data networks and open system communication - Open System Interconnection - Service definitions - Remote operations: Concepts, model and notation".

[14] 3GPP TS 49.031: "Location Services (LCS); Base Station Application Part LCS Extension (BSSAP-LE)".

[15] 3GPP TS 24.171: "NAS Signalling for Control Plane LCS in Evolved Packet System".

[16] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS)".

[17] 3GPP TS 36.355: "Evolved Universal Terrestrial Radio Access (E-UTRA); LTE Positioning Protocol (LPP)".

[xx] RFC 3339: "Date and Time on the Internet: Timestamps ".

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

## 4.2 Operation types

Table 4.1 summarizes the operations defined for supplementary services in this specification and shows which of these operations are call related and call independent. The terms "call related" and "call independent" are defined in 3GPP TS 24.010 [6]. Refer to 3GPP TS 24.171 [15] for operations for E-UTRAN LCS..

Table 4.1: Relevance of supplementary service operations

|  |  |  |
| --- | --- | --- |
| **Operation name** | Call related SS | Call independent SS |
| registerSS | - | + |
| eraseSS | - | + |
| activateSS | - | + |
| deactivateSS | - | + |
| interrogateSS | - | + |
| registerPassword | - | + |
| getPassword | - | + |
| processUnstructuredSS-Data | + | + |
| forwardCheckSS-Indication | - | + |
| processUnstructuredSS-Request | - | + |
| unstructuredSS-Request | - | + |
| unstructuredSS-Notify | - | + |
| forwardChargeAdvice | + | - |
| notifySS | + | - |
| forwardCUG-Info | + | - |
| buildMPTY | + | - |
| holdMPTY | + | - |
| retrieveMPTY | + | - |
| splitMPTY | + | - |
| explicitCT | + | - |
| accessRegisterCCEntry | + | - |
| eraseCCEntry | - | + |
| callDeflection | + | - |
| userUserService | + | - |
| lcs-LocationNotification | - | + |
| lcs-MOLR | - | + |
| lcs-AreaEventRequest | - | + |
| lcs-AreaEventReport | - | + |
| lcs-AreaEventCancellation | - | + |
| lcs-PeriodicLocationRequest | - | + |
| lcs-LocationUpdate | - | + |
| lcs-PeriodicLocationCancellation lcs-PeriodicTriggeredInvoke | -- | ++ |
| lcs-EventReport | - | + |
| lcs-CancelDeferredLocation | - | + |
| lcs-MSCancelDeferredLocation | - | + |
| lcs-LocationPrivacySetting | - | + |
| NOTE: The processUnstructuredSS-Data operation may be used call related by a GSM Phase 1 MS. |

The following ASN.1 module defines operations by allocating them a local value. For the involved operations the same local values as in MAP are allocated.

.$SS-Operations {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)

 ss-Operations (0) version14 (14)}

DEFINITIONS ::=

BEGIN

EXPORTS

*-- exports operations*

*-- operations defined in this specification*

processUnstructuredSS-Data, notifySS, forwardChargeAdvice, forwardCUG-Info, buildMPTY, holdMPTY, retrieveMPTY, splitMPTY, explicitCT, accessRegisterCCEntry, callDeflection, userUserService,

lcs-LocationNotification, lcs-MOLR, lcs-AreaEventRequest, lcs-AreaEventReport, lcs-AreaEventCancellation, lcs-PeriodicLocationRequest, lcs-LocationUpdate, lcs-PeriodicLocationCancellation,

 lcs-PeriodicTriggeredInvoke, lcs-EventReport, lcs-CancelDeferredLocation;

IMPORTS

OPERATION FROM

Remote-Operations-Information-Objects {

 joint-iso-itu-t remote-operations(4)

 informationObjects(5) version1(0)}

*-- The MAP operations:*

*-- registerSS, eraseSS, activateSS, deactivateSS, interrogateSS, registerPassword,*

*-- getPassword, processUnstructuredSS-Request, unstructuredSS-Request, unstructuredSS-Notify*

*-- forwardCheckSS-Indication*

*-- are imported from MAP-Operations in SS-Protocol module.*

*-- imports SS-data types*

NotifySS-Arg,

ForwardChargeAdviceArg,

ForwardCUG-InfoArg,

SS-UserData,

AccessRegisterCCEntryArg,

CallDeflectionArg,

UserUserServiceArg,

LocationNotificationArg,

LocationNotificationRes,

LCS-MOLRArg,

LCS-MOLRRes,

LCS-AreaEventRequestArg,

LCS-AreaEventReportArg,

LCS-AreaEventCancellationArg,

LCS-PeriodicLocationRequestArg,

LCS-PeriodicLocationRequestRes,

LCS-LocationUpdateArg,

LCS-LocationUpdateRes,

LCS-PeriodicLocationCancellationArg,

LCS-PeriodicTriggeredInvokeArg,

LCS-PeriodicTriggeredInvokeRes,

LCS-EventReportArg,

LCS-EventReportRes,

LCS-CancelDeferredLocationArg

FROM SS-DataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)

 ss-DataTypes (2) version14 (14)}

-- imports MAP-SS-data types

RegisterCC-EntryRes

FROM MAP-SS-DataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0)

 gsm-Network (1) modules (3) map-SS-DataTypes (14) version18 (18)}

*-- imports MAP-errors*

illegalSS-Operation, ss-ErrorStatus, ss-NotAvailable, ss-SubscriptionViolation,

ss-Incompatibility, systemFailure, facilityNotSupported, callBarred, unexpectedDataValue, shortTermDenial, longTermDenial, dataMissing, forwardingViolation, forwardingFailed, positionMethodFailure, resourceLimitation

FROM MAP-Errors {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)

 map-Errors (10) version18 (18)}

*-- imports SS-Errors*

resourcesNotAvailable, maxNumberOfMPTY-ParticipantsExceeded, deflectionToServedSubscriber, invalidDeflectedToNumber, specialServiceCode, rejectedByUser, rejectedByNetwork

FROM SS-Errors {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)

 ss-Errors (1) version14 (14)}

;

*-- operations definition*

processUnstructuredSS-Data OPERATION ::= { *-- Timer T(PUSSD)= 15s to 30s*

 ARGUMENT SS-UserData

 RESULT SS-UserData

 *-- optional*

 ERRORS {

 systemFailure |

 unexpectedDataValue}

 CODE local:19 }

notifySS OPERATION ::= {

 ARGUMENT NotifySS-Arg

 CODE local:16 }

forwardChargeAdvice OPERATION ::= { *-- Timer T(AoC)= 1s to 40s*

 ARGUMENT ForwardChargeAdviceArg

 RETURN RESULT TRUE

 CODE local:125 }

forwardCUG-Info OPERATION ::= {

 ARGUMENT ForwardCUG-InfoArg

 CODE local:120 }

buildMPTY OPERATION ::= { *-- Timer T(BuildMPTY)= 5s to 30s*

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-NotAvailable |

 ss-Incompatibility |

 systemFailure |

 resourcesNotAvailable |

 maxNumberOfMPTY-ParticipantsExceeded}

 CODE local:124 }

holdMPTY OPERATION ::= { *-- Timer T(HoldMPTY)= 5s to 30s*

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure}

 CODE local:123 }

retrieveMPTY OPERATION ::= { *-- Timer T(RetrieveMPTY)= 5s to 30s*

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure}

 CODE local:122 }

splitMPTY OPERATION ::= { *-- Timer T(SplitMPTY)= 5s to 30s*

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure}

 CODE local:121 }

explicitCT OPERATION ::= { *-- Timer T(ECT)= 5s to 15s*

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-NotAvailable |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure |

 resourcesNotAvailable |

 callBarred}

 CODE local:126 }

accessRegisterCCEntry OPERATION ::= { *-- Timer T(AccRegCCEntry)= 30s*

 ARGUMENT AccessRegisterCCEntryArg

 RESULT RegisterCC-EntryRes

 ERRORS {

 systemFailure |

 dataMissing |

 unexpectedDataValue |

 callBarred |

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-Incompatibility |

 shortTermDenial |

 longTermDenial |

 facilityNotSupported}

 CODE local:119 }

-- the timer value is defined by T308, see also in TS 24.008 for definition of timer T308

callDeflection OPERATION ::= { *-- Timer T(CD)= 30s*

 ARGUMENT CallDeflectionArg

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-NotAvailable |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure |

 resourcesNotAvailable |

 forwardingViolation |

 callBarred |

 deflectionToServedSubscriber |

 invalidDeflectedToNumber |

 specialServiceCode |

 forwardingFailed}

 CODE local:117 }

-- the timer value is defined by T305, see also in TS 24.008 for definition of timer T305

-- extensionContainer shall not be used with this operation

userUserService OPERATION ::= { *-- Timer T(UUS3)= 10s*

 ARGUMENT UserUserServiceArg

 RETURN RESULT TRUE

 ERRORS {

 illegalSS-Operation |

 ss-ErrorStatus |

 ss-NotAvailable |

 ss-Incompatibility |

 facilityNotSupported |

 systemFailure |

 resourcesNotAvailable |

 rejectedByNetwork |

 rejectedByUser}

 CODE local:118 }

-- The timer value for UUS3 is 10s; it is applicable only if UUS3 is activated by FACILITY

-- message. If UUS service (UUS1, UUS2 or UUS3) is activated by SETUP message, no timers are

-- needed. In those cases Return Result or Return Error must be received within certain call

-- control messages, see 3GPP TS 24.087.

-- extensionContainer shall not be used with this operation.

lcs-LocationNotification OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LocationNotificationArg

 RESULT LocationNotificationRes

 ERRORS {

 systemFailure |

 unexpectedDataValue}

 CODE local:116 }

lcs-MOLR OPERATION ::= { *-- Timer T(LCSL)= 10s to 300s*

 ARGUMENT LCS-MOLRArg

 RESULT LCS-MOLRRes

 ERRORS {

 systemFailure |

 unexpectedDataValue |

 dataMissing |

 facilityNotSupported |

 ss-SubscriptionViolation |

 positionMethodFailure}

 CODE local:115 }

lcs-AreaEventRequest OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-AreaEventRequestArg

 RETURN RESULT TRUE

 ERRORS {

 systemFailure |

 facilityNotSupported |

 unexpectedDataValue}

 CODE local:114 }

lcs-AreaEventReport OPERATION ::= { *-- Timer T(LCSL)= 10s to 300s*

 ARGUMENT LCS-AreaEventReportArg

 RETURN RESULT TRUE

 ERRORS {

 systemFailure |

 unexpectedDataValue |

 facilityNotSupported}

 CODE local:113 }

lcs-AreaEventCancellation OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-AreaEventCancellationArg

 RETURN RESULT TRUE

 ERRORS {

 systemFailure |

 facilityNotSupported |

 unexpectedDataValue}

 CODE local:112 }

lcs-PeriodicLocationRequest OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-PeriodicLocationRequestArg

 RESULT LCS-PeriodicLocationRequestRes

 ERRORS {

 systemFailure |

 facilityNotSupported |

 unexpectedDataValue |

 dataMissing }

 CODE local: 111 }

lcs-LocationUpdate OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-LocationUpdateArg

 RESULT LCS-LocationUpdateRes

 ERRORS {

 systemFailure |

 unexpectedDataValue}

 CODE local: 110 }

lcs-PeriodicLocationCancellation OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-PeriodicLocationCancellationArg

 RETURN RESULT TRUE

 ERRORS {

 systemFailure |

 unexpectedDataValue}

 CODE local: 109 }

lcs-PeriodicTriggeredInvoke OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-PeriodicTriggeredInvokeArg

 RESULT LCS-PeriodicTriggeredInvokeRes

 ERRORS {

 systemFailure |

 facilityNotSupported |

 unexpectedDataValue |

 dataMissing |

 resourceLimitation }

 CODE local: 108 }

lcs-EventReport OPERATION ::= { *-- Timer T(LCSL)= 10s to 300s*

 ARGUMENT LCS-EventReportArg

 RESULT LCS-EventReportRes

 ERRORS {

 systemFailure |

 facilityNotSupported |

 ss-SubscriptionViolation |

 unexpectedDataValue |

 dataMissing |

 resourceLimitation }

 CODE local: 107 }

lcs-CancelDeferredLocation OPERATION ::= { *-- Timer T(LCSN)= 10s to 20s*

 ARGUMENT LCS-CancelDeferredLocationArg

 RETURN RESULT TRUE

 ERRORS {

 systemFailure |

 unexpectedDataValue}

 CODE local: 106 }

.#END

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

#### 4.2.2.x lcs-MSCancelDeferredLocation (MS -->network)

This operation is invoked by an MS to request the network to cancel a periodic or triggered reporting procedure. This operation is applicable to 5GS.

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

#### 4.2.2.y lcs-LocationPrivacySetting (MS --> network)

This operation is invoked by an MS to request network to update its Location Privacy Indication information. This operation is applicable to 5GS.

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

### 4.4.2 ASN.1 data types

This clause provides an ASN.1 module defining the abstract data types in operations and errors specification. Only data types which are specific for this specification are defined. All other data types are imported from MAP together with the import of operations and errors.

.$SS-DataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)

 ss-DataTypes (2) version14 (14)}

DEFINITIONS

IMPLICIT TAGS ::=

BEGIN

*-- exports all data types defined in this module*IMPORTS

SS-Code

FROM MAP-SS-Code {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)

 map-SS-Code (15) version18 (18)}

*-- imports MAP-SS-DataTypes*

SS-Status, USSD-DataCodingScheme, USSD-String, CCBS-Feature

*-- USSD-DataCodingScheme, USSD-String were introduced because of CNAP.*

FROM MAP-SS-DataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)

 map-SS-DataTypes (14) version18 (18)}

CUG-Index,

NotificationToMSUser

FROM MAP-MS-DataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)

 map-MS-DataTypes (11) version18 (18)}

maxSignalInfoLength,

ISDN-AddressString,

ISDN-SubaddressString,

AlertingPattern,

LCSClientExternalID,

AddressString,

LCSServiceTypeID,

AgeOfLocationInformation,

GSN-Address

FROM MAP-CommonDataTypes {

 itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)

 map-CommonDataTypes (18) version18 (18)}

LocationType,

DeferredLocationEventType,

LCSClientName,

LCS-QoS,

Horizontal-Accuracy,

ResponseTime,

Ext-GeographicalInformation,

VelocityEstimate,

SupportedGADShapes,

Add-GeographicalInformation,

LCSRequestorID,

LCS-ReferenceNumber,

LCSCodeword,

AreaEventInfo,

ReportingPLMNList,

PeriodicLDRInfo,

SequenceNumber,

OccurrenceInfo,

IntervalTime

\*\*\*\*\*\*Skipped for clarity\*\*\*\*\*\*

LocationNotificationRes ::= SEQUENCE {

 verificationResponse [0] VerificationResponse OPTIONAL,

 locationPrivacyIndication [1] LCS-LocationPrivacyIndication, OPTIONAL

 validTimePeriod [2] LCS-ValidTimePeriod, OPTIONAL,

 ...}

-- Parameters locationPrivacyIndication or validTimePeriod may be included by a UE for 5GS access. Parameter validTimePeriod only may be included if parameter locatonPrivacyIndication is included.

\*\*\*\*\*\*Skipped for clarity\*\*\*\*\*\*

LCS-CancelDeferredLocationArg ::= SEQUENCE {

 referenceNumberExt [0] LCS-ReferenceNumberExt,

 h-gmlc-callBackUri [2] UTF8String,

 ... }

LCS-LocationPrivacySettingArg ::= SEQUENCE {

 locationPrivacyIndication [0] LocationPrivacyIndication,

 validTimePeriod [1] ValidTimePeriod, OPTIONAL,

 ... }

LocationPrivacyIndication ::= ENUMERATED {

 locationDisallowed (0),

 locationAllowed (1),

 ... }

ValidTimePeriod ::= SEQUENCE {

 startTime [0] DateTime, OPTIONAL,

 endTime [1] DateTime, OPTIONAL,

 ... }

DateTime ::= OCTET STRING (SIZE (4))

-- The timestamp indicates validity time of MS indicated Location Privacy Indication. Octets are coded according to RFC 3339 [xx]

.#END

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

#### 4.4.3.76 LCS-CancelDeferredLocationArg

The LCS-CancelDeferredLocationArg identifier refers to the location cancel request sent to the MS by the network or sent to the network by the MS for deferred periodic or triggered location for 5GS.

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

#### 4.4.3.z1 LCS-LocationPrivacySettingArg

TheLCS-LocationPrivacySettingArg identifier refers to parameters(s) for the MS indicated Location Privacy Indication information and optional validity time for the indication sent to the network by the MS.

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

#### 4.4.3.z2 locationPrivacyIndication

The LocationPrivacyIndication identifier refers to MS indicated Location Privacy Indication.

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

#### 4.4.3.z3 validTimePeriod

The validTimePeriod identifier refers to validity period for the MS indicated Location Privacy Indication.

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

#### 4.4.3.z4 startTime

The startTime identifier refers to validity time (in UTC time) when MS indicated Location Privacy Indication become valid.

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

#### 4.4.3.z5 endTime

The endTime identifier refers to the validity time (in UTC time) when MS indicated Location Privacy Indication become invalid.

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