3GPP TSG_CN **Tdoc NP-000xxx**
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000.

Source: **TSG_N WG 4**

Title: **CRs to R98 and R99 Work Item Location Services (LCS)**

Agenda item:

Document for: **APPROVAL**

Introduction:

This document contains 5 CRs on R98 and R99 Work Item LCS, that have been agreed by TSG_N WG4, and is forwarded to TSG_N Plenary meeting #9 for approval.

SM	TDoc	SPEC	CR	REV	PHAS	VERS	SUBJECT	CAT
CN9	N4-000566	04.80	A018		R98	7.3.0	Addition of error type description for PositionMethodFailure	F
CN9	N4-000786	09.02	A310	1	R98	7.5.1	Correction to QoS indication	F
CN9	N4-000567	24.080	006		R99	3.3.0	Addition of error type description for PositionMethodFailure	A
CN9	N4-000787	29.002	175	1	R99	3.5.1	Correction to QoS indication	A
CN9	N4-000771	29.002	183		R99	3.5.1	LCS Support for CAMEL Phase 3	F

3GPP TSG CN WG4
Aug 28 – Sep 1, 2000
Seattle, USA

Document N4-000566
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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04.80	CR	A018	Current Version:	7.3.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-CN#09	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	X	

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio		Core Network	X

Source: N4 **Date:** 4 Aug 2000

Subject: Addition of error type description for PositionMethodFailure

Work item: Location Services

Category: *(only one category shall be marked with an X)*

F	Correction	X	
A	Corresponds to a correction in an earlier release		
B	Addition of feature		
C	Functional modification of feature		
D	Editorial modification		

Release:

Phase 2	
Release 96	
Release 97	
Release 98	X
Release 99	
Release 00	

Reason for change: The error type description for PositionMethodFailure is missing, although the error code is used in operation "LCS-MOLR".
Also local value for the error code is added in chapter 4.5.

Clauses affected: 4.3.2.29 (new), 4.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments: Category C1

4.3.2.29 PositionMethodFailure

This error is returned by the network when the network is unable to obtain any of the location information requested or none of the information obtained satisfies the requested LCS QoS or if requested LCS assistance data could not be transferred or requested deciphering keys for broadcast assistance data could not be returned.

****** NEXT MODIFIED SECTION ******

4.5 Operations and errors implementation

For the actual implementation of supplementary services, operations and errors have to be defined by value. The following ASN.1 module, imports operation types from the ASN.1 module described in subclause 4.2 and operation and error types from MAP. It defines operations by allocating operations and errors a local value. For the involved operations and errors the same local values as in MAP are allocated.

```
SS-Protocol {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Access (2) modules (3) ss-Protocol (3) version5 (5)}

DEFINITIONS ::=

BEGIN

IMPORTS

-- imports operation types

-- imports operation type from MAP-MobileServiceOperations
ForwardCheckSS-Indication
FROM MAP-MobileServiceOperations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-MobileServiceOperations (5) version5 (5)}

-- imports operation types from MAP-SupplementaryServiceOperations
RegisterSS, EraseSS, ActivateSS, DeactivateSS, InterrogateSS, RegisterPassword, GetPassword,
ProcessUnstructuredSS-Request, UnstructuredSS-Request, UnstructuredSS-Notify, EraseCC-Entry
FROM MAP-SupplementaryServiceOperations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-SupplementaryServiceOperations (8) version5 (5)}

-- imports operation types from SS-Operations
ProcessUnstructuredSS-Data, NotifySS, ForwardChargeAdvice, BuildMPTY, HoldMPTY, RetrieveMPTY,
SplitMPTY, ExplicitCT, ForwardCUG-Info, AccessRegisterCCEntry, CallDeflection, UserUserService,
LCS-LocationNotification, LCS-MOLR
FROM SS-Operations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
   ss-Operations (0) version5 (5)}

-- imports error types

-- imports error types from MAP-Errors
UnknownSubscriber, BearerServiceNotProvisioned, TeleserviceNotProvisioned,
IllegalSS-Operation, SS-ErrorStatus, SS-NotAvailable, SS-SubscriptionViolation,
SS-Incompatibility, SystemFailure, DataMissing, UnexpectedDataValue, PW-RegistrationFailure,
NegativePW-Check, FacilityNotSupported, CallBarred, NumberOfPW-AttemptsViolation,
AbsentSubscriber, IllegalSubscriber, IllegalEquipment, USSD-Busy, UnknownAlphabet,
ShortTermDenial, LongTermDenial, ForwardingViolation, ForwardingFailed, PositionMethodFailure

FROM MAP-Errors {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-Errors (10) version5 (5)}

-- imports error types from SS-Errors
ResourcesNotAvailable, MaxNumberOfMPTY-ParticipantsExceeded,
InvalidDeflectedToNumber, SpecialServiceCode, DeflectionToServedSubscriber,
RejectedByNetwork, RejectedByUser

FROM SS-Errors {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
   ss-Errors (1) version5 (5)}
;

-- allocation of local values to operations

registerSS  RegisterSS ::= localValue 10
eraseSS     EraseSS ::= localValue 11
activateSS  ActivateSS ::= localValue 12
```

```
deactivateSS    DeactivateSS ::= localValue 13
interrogateSS   InterrogateSS ::= localValue 14
notifySS    NotifySS ::= localValue 16
registerPassword    RegisterPassword ::= localValue 17
getPassword     GetPassword ::= localValue 18
processUnstructuredSS-Data  ProcessUnstructuredSS-Data ::= localValue 19
forwardCheckSS-Indication   ForwardCheckSS-Indication ::= localValue 38
processUnstructuredSS-Request   ProcessUnstructuredSS-Request ::= localValue 59
unstructuredSS-Request  UnstructuredSS-Request ::= localValue 60
unstructuredSS-Notify   UnstructuredSS-Notify ::= localValue 61
eraseCCEntry    EraseCC-Entry ::= localValue 77
callDeflection  CallDeflection ::= localValue 117
userUserService UserUserService ::= localValue 118
accessRegisterCCEntry   AccessRegisterCCEntry ::= localValue 119
forwardCUG-Info ForwardCUG-Info ::= localValue 120
splitMPTY   SplitMPTY ::= localValue 121
retrieveMPTY    RetrieveMPTY ::= localValue 122
holdMPTY    HoldMPTY ::= localValue 123
buildMPTY   BuildMPTY ::= localValue 124
forwardChargeAdvice ForwardChargeAdvice ::= localValue 125
explicitCT  ExplicitCT ::= localValue 126
lcs-LocationNotification    LCS-LocationNotification:: localValue 116
lcs-MOLR    LCS-MOLR:: localValue 115


-- allocation of local values to errors

unknownSubscriber   UnknownSubscriber ::= localValue 1
illegalSubscriber   IllegalSubscriber ::= localValue 9
bearerServiceNotProvisioned BearerServiceNotProvisioned ::= localValue 10
teleserviceNotProvisioned   TeleserviceNotProvisioned ::= localValue 11
illegalEquipment    IllegalEquipment ::= localValue 12
callBarred  CallBarred ::= localValue 13
illegalSS-Operation IllegalSS-Operation ::= localValue 16
ss-ErrorStatus  SS-ErrorStatus ::= localValue 17
ss-NotAvailable SS-NotAvailable ::= localValue 18
ss-SubscriptionViolation    SS-SubscriptionViolation ::= localValue 19
ss-Incompatibility  SS-Incompatibility ::= localValue 20
facilityNotSupported    FacilityNotSupported ::= localValue 21
absentSubscriber    AbsentSubscriber ::= localValue 27
shortTermDenial ShortTermDenial ::= localValue 29
longTermDenial  LongTermDenial ::= localValue 30
systemFailure   SystemFailure ::= localValue 34
dataMissing DataMissing ::= localValue 35
unexpectedDataValue UnexpectedDataValue ::= localValue 36
pw-RegistrationFailure  PW-RegistrationFailure ::= localValue 37
negativePW-Check    NegativePW-Check ::= localValue 38
numberOfPW-AttemptsViolation    NumberOfPW-AttemptsViolation ::= localValue 43
positionMethodFailure  PositionMethodFailure ::= localValue 54
unknownAlphabet UnknownAlphabet ::= localValue 71
ussd-Busy   USSD-Busy ::= localValue 72
rejectedByUser  RejectedByUser ::= localValue 121
rejectedByNetwork   RejectedByNetwork ::= localValue 122
deflectionToServedSubscriber    DeflectionToServedSubscriber ::= localValue 123
specialServiceCode  SpecialServiceCode ::= localValue 124
invalidDeflectedToNumber    InvalidDeflectedToNumber ::= localValue 125
maxNumberOfMPTY-ParticipantsExceeded    MaxNumberOfMPTY-ParticipantsExceeded ::= localValue 126
resourcesNotAvailable   ResourcesNotAvailable ::= localValue 127

END
```

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3GPP TSG CN WG4
28 August - 1 September 2000
Seattle (WA), USA

Document N4-000786
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or for SMG, use the format P-99-xxx

CHANGE REQUEST

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09.02	**CR**	**A310r1**	Current Version:	7.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#09 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [X]
(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N4 **Date:** 16 Aug 2000

Subject: Correction to QoS indication

Work item: Location Services (LCS)

Category: *(only one category shall be marked with an X)*

		Release:	
Correction	[X]	Phase 2	[ ]
Corresponds to a correction in an earlier release	[ ]	Release 96	[ ]
Addition of feature	[ ]	Release 97	[ ]
Functional modification of feature	[ ]	Release 98	[X]
Editorial modification	[ ]	Release 99	[ ]
		Release 00	[ ]

Reason for change: Currently the QoS indication defines the required horizontal and vertical accuracies using a 7 bit uncertainty code in GSM 03.32 which expresses distance. However, the definition of the related confidence is missing. Thus a clarification, that the confidence related to the distance is 67 %, is added.

Clauses affected: 17.7.13

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

2

3

17.7.13 Location service data types

```
MAP-LCS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-LCS-DataTypes (25) version5 (5)}

****     NEXT MODIFIED SECTION     ****

Horizontal-Accuracy ::= OCTET STRING (SIZE (1))
     -- bit 8 = 0
     -- bits 7-1 = 7 bit Uncertainty Code defined in GSM 03.32. The horizontal location
     -- error should be less than the error indicated by the uncertainty code with  67%
     -- confidence.

Vertical-Accuracy ::= OCTET STRING (SIZE (1))
     -- bit 8 = 0
     -- bits 7-1 = 7 bit Vertical Uncertainty Code defined in GSM 03.32. The vertical location
     -- error should be less than the error indicated by the uncertainty code with 67 %
     -- confidence.
```

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Aug 28 – Sep 1, 2000
Seattle, USA

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CHANGE REQUEST

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24.080	CR	006	Current Version:	3.3.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-CN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	X	

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio		Core Network	X

Source: N4 **Date:** 4 Aug 2000

Subject: Addition of error type description for PositionMethodFailure

Work item: Location Services

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release	X		Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The error type description for PositionMethodFailure is missing, although the error code is used in operation "LCS-MOLR".
Also local value for the error code is added in chapter 4.5.

Clauses affected: 4.3.2.29 (new), 4.5

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

4.3.2.29 PositionMethodFailure

This error is returned by the network when the network is unable to obtain any of the location information requested or none of the information obtained satisfies the requested LCS QoS or if requested LCS assistance data could not be transferred or requested deciphering keys for broadcast assistance data could not be returned.

****** NEXT MODIFIED SECTION ******

4.5 Operations and errors implementation

For the actual implementation of supplementary services, operations and errors have to be defined by value. The following ASN.1 module, imports operation types from the ASN.1 module described in subclause 4.2 and operation and error types from MAP. It defines operations by allocating operations and errors a local value. For the involved operations and errors the same local values as in MAP are allocated.

```
SS-Protocol {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Access (2) modules (3) ss-Protocol (3) version6 (6)}

DEFINITIONS ::=

BEGIN

IMPORTS

-- imports operation types

-- imports operation type from MAP-MobileServiceOperations
ForwardCheckSS-Indication
FROM MAP-MobileServiceOperations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-MobileServiceOperations (5) version6 (6)}

-- imports operation types from MAP-SupplementaryServiceOperations
RegisterSS, EraseSS, ActivateSS, DeactivateSS, InterrogateSS, RegisterPassword, GetPassword,
ProcessUnstructuredSS-Request, UnstructuredSS-Request, UnstructuredSS-Notify, EraseCC-Entry
FROM MAP-SupplementaryServiceOperations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-SupplementaryServiceOperations (8) version6 (6)}

-- imports operation types from SS-Operations
ProcessUnstructuredSS-Data, NotifySS, ForwardChargeAdvice, BuildMPTY, HoldMPTY, RetrieveMPTY,
SplitMPTY, ExplicitCT, ForwardCUG-Info, AccessRegisterCCEntry, CallDeflection, UserUserService,
LCS-LocationNotification, LCS-MOLR
FROM SS-Operations {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
   ss-Operations (0) version6 (6)}

-- imports error types

-- imports error types from MAP-Errors
UnknownSubscriber, BearerServiceNotProvisioned, TeleserviceNotProvisioned,
IllegalSS-Operation, SS-ErrorStatus, SS-NotAvailable, SS-SubscriptionViolation,
SS-Incompatibility, SystemFailure, DataMissing, UnexpectedDataValue, PW-RegistrationFailure,
NegativePW-Check, FacilityNotSupported, CallBarred, NumberOfPW-AttemptsViolation,
AbsentSubscriber, IllegalSubscriber, IllegalEquipment, USSD-Busy, UnknownAlphabet,
ShortTermDenial, LongTermDenial, ForwardingViolation, ForwardingFailed, PositionMethodFailure

FROM MAP-Errors {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3)
   map-Errors (10) version6 (6)}

-- imports error types from SS-Errors
ResourcesNotAvailable, MaxNumberOfMPTY-ParticipantsExceeded,
InvalidDeflectedToNumber, SpecialServiceCode, DeflectionToServedSubscriber,
RejectedByNetwork, RejectedByUser

FROM SS-Errors {
   ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3)
   ss-Errors (1) version6 (6)}
;

-- allocation of local values to operations

registerSS  RegisterSS ::= localValue 10
eraseSS     EraseSS ::= localValue 11
activateSS  ActivateSS ::= localValue 12
```

```
deactivateSS    DeactivateSS ::= localValue 13
interrogateSS   InterrogateSS ::= localValue 14
notifySS    NotifySS ::= localValue 16
registerPassword    RegisterPassword ::= localValue 17
getPassword     GetPassword ::= localValue 18
processUnstructuredSS-Data  ProcessUnstructuredSS-Data ::= localValue 19
forwardCheckSS-Indication   ForwardCheckSS-Indication ::= localValue 38
processUnstructuredSS-Request   ProcessUnstructuredSS-Request ::= localValue 59
unstructuredSS-Request  UnstructuredSS-Request ::= localValue 60
unstructuredSS-Notify   UnstructuredSS-Notify ::= localValue 61
eraseCCEntry    EraseCC-Entry ::= localValue 77
callDeflection  CallDeflection ::= localValue 117
userUserService UserUserService ::= localValue 118
accessRegisterCCEntry   AccessRegisterCCEntry ::= localValue 119
forwardCUG-Info ForwardCUG-Info ::= localValue 120
splitMPTY   SplitMPTY ::= localValue 121
retrieveMPTY    RetrieveMPTY ::= localValue 122
holdMPTY    HoldMPTY ::= localValue 123
buildMPTY   BuildMPTY ::= localValue 124
forwardChargeAdvice ForwardChargeAdvice ::= localValue 125
explicitCT  ExplicitCT ::= localValue 126
lcs-LocationNotification    LCS-LocationNotification:: localValue 116
lcs-MOLR    LCS-MOLR:: localValue 115


-- allocation of local values to errors

unknownSubscriber   UnknownSubscriber ::= localValue 1
illegalSubscriber   IllegalSubscriber ::= localValue 9
bearerServiceNotProvisioned BearerServiceNotProvisioned ::= localValue 10
teleserviceNotProvisioned   TeleserviceNotProvisioned ::= localValue 11
illegalEquipment    IllegalEquipment ::= localValue 12
callBarred  CallBarred ::= localValue 13
illegalSS-Operation IllegalSS-Operation ::= localValue 16
ss-ErrorStatus  SS-ErrorStatus ::= localValue 17
ss-NotAvailable SS-NotAvailable ::= localValue 18
ss-SubscriptionViolation    SS-SubscriptionViolation ::= localValue 19
ss-Incompatibility  SS-Incompatibility ::= localValue 20
facilityNotSupported    FacilityNotSupported ::= localValue 21
absentSubscriber    AbsentSubscriber ::= localValue 27
shortTermDenial ShortTermDenial ::= localValue 29
longTermDenial  LongTermDenial ::= localValue 30
systemFailure   SystemFailure ::= localValue 34
dataMissing DataMissing ::= localValue 35
unexpectedDataValue UnexpectedDataValue ::= localValue 36
pw-RegistrationFailure  PW-RegistrationFailure ::= localValue 37
negativePW-Check    NegativePW-Check ::= localValue 38
numberOfPW-AttemptsViolation    NumberOfPW-AttemptsViolation ::= localValue 43
positionMethodFailure  PositionMethodFailure ::= localValue 54
unknownAlphabet UnknownAlphabet ::= localValue 71
ussd-Busy   USSD-Busy ::= localValue 72
rejectedByUser  RejectedByUser ::= localValue 121
rejectedByNetwork   RejectedByNetwork ::= localValue 122
deflectionToServedSubscriber    DeflectionToServedSubscriber ::= localValue 123
specialServiceCode  SpecialServiceCode ::= localValue 124
invalidDeflectedToNumber    InvalidDeflectedToNumber ::= localValue 125
maxNumberOfMPTY-ParticipantsExceeded    MaxNumberOfMPTY-ParticipantsExceeded ::= localValue 126
resourcesNotAvailable   ResourcesNotAvailable ::= localValue 127

END
```

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3GPP TSG CN WG4
28 August - 1 September 2000
Seattle (WA), USA

Document N4-000787
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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29.002	**CR**	**175r1**	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#09 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [X]
(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*
(U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N4 **Date:** 16 Aug 2000

Subject: Correction to QoS indication

Work item: Location Services (LCS)

Category: *(only one category shall be marked with an X)*

		Release:	
Correction	[ ]	Phase 2	[ ]
Corresponds to a correction in an earlier release	[X]	Release 96	[ ]
Addition of feature	[ ]	Release 97	[ ]
Functional modification of feature	[ ]	Release 98	[ ]
Editorial modification	[ ]	Release 99	[X]
		Release 00	[ ]

Reason for change: Currently the QoS indication defines the required horizontal and vertical accuracies using a 7 bit uncertainty code in GSM 03.32 which expresses distance. However, the definition of the related confidence is missing. Thus a clarification, that the confidence related to the distance is 67 %, is added.

Clauses affected: 17.7.13

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

2

3

17.7.13 Location service data types

```
MAP-LCS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-LCS-DataTypes (25) version6 (6)}

****     NEXT MODIFIED SECTION     ****

Horizontal-Accuracy ::= OCTET STRING (SIZE (1))
     -- bit 8 = 0
     -- bits 7-1 = 7 bit Uncertainty Code defined in GSM 03.32. The horizontal location
     -- error should be less than the error indicated by the uncertainty code with 67 %
     -- confidence.

Vertical-Accuracy ::= OCTET STRING (SIZE (1))
     -- bit 8 = 0
     -- bits 7-1 = 7 bit Vertical Uncertainty Code defined in GSM 03.32. The vertical location
     -- error should be less than the error indicated by the uncertainty code with 67 %
     -- confidence.
```

3GPP TSG CN WG4
Seattle, USA, 28 Aug – 1 Sep, 2000

Document N4-000771
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

29.002	CR	183	Current Version:	3.5.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	CN#09	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	X	

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]
(at least one should be marked with an X)

Source: N4 **Date:** 31 Aug 2000

Subject: LCS Support for CAMEL Phase 3

Work item: LCS

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Identify an LCS client subtype for CAMEL phase 3 – to enable an SMLC to correctly restrict the geographic shape description

Clauses affected: 17.7.8

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments: .

17.7.8 Common data types

```
MAP-CommonDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-CommonDataTypes (18) version6 (6)}

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

   -- general data types and values
   AddressString,
   ISDN-AddressString,
   maxISDN-AddressLength,
   FTN-AddressString,
   ISDN-SubaddressString,
   ExternalSignalInfo,
   Ext-ExternalSignalInfo,
   AccessNetworkSignalInfo,
   SignalInfo,
   maxSignalInfoLength,
   AlertingPattern,

   -- data types for numbering and identification
   IMSI,
   TMSI,
   Identity,
   SubscriberId,
   IMEI,
   HLR-List,
   LMSI,
   GlobalCellId,
   NetworkResource,
   NAEA-PreferredCI,
   NAEA-CIC,
   ASCI-CallReference,
   SubscriberIdentity,

   -- data types for CAMEL
   CellGlobalIdOrServiceAreaIdOrLAI,

   -- data types for subscriber management
   BasicServiceCode,
   Ext-BasicServiceCode,
   EMLPP-Info,
   EMLPP-Priority,
   MC-SS-Info,
   MaxMC-Bearers,
   MC-Bearers,
   Ext-SS-Status,

   -- data types for geographic location
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID
;

IMPORTS
   TeleserviceCode,
   Ext-TeleserviceCode
FROM MAP-TS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-TS-Code (19) version6 (6)}

   BearerServiceCode,
   Ext-BearerServiceCode
FROM MAP-BS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
```

```
   gsm-Network (1) modules (3) map-BS-Code (20) version6 (6)}

   SS-Code
FROM MAP-SS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-Code (15) version6 (6)}

   ExtensionContainer
FROM MAP-ExtensionDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version6 (6)}
;


-- general data types

TBCD-STRING ::= OCTET STRING
     -- This type (Telephony Binary Coded Decimal String) is used to
     -- represent several digits from 0 through 9, *, #, a, b, c, two
     -- digits per octet, each digit encoded 0000 to 1001 (0 to 9),
     -- 1010 (*), 1011 (#), 1100 (a), 1101 (b) or 1110 (c); 1111 used
     -- as filler when there is an odd number of digits.

     -- bits 8765 of octet n encoding digit 2n
     -- bits 4321 of octet n encoding digit 2(n-1) +1

AddressString ::= OCTET STRING (SIZE (1..maxAddressLength))
     -- This type is used to represent a number for addressing
     -- purposes. It is composed of
     --   a)   one octet for nature of address, and numbering plan
     --        indicator.
     --   b)   digits of an address encoded as TBCD-String.

     -- a)     The first octet includes a one bit extension indicator, a
     --        3 bits nature of address indicator and a 4 bits numbering
     --        plan indicator, encoded as follows:

     -- bit 8: 1  (no extension)

     -- bits 765: nature of address indicator
     --   000  unknown
     --   001  international number
     --   010  national significant number
     --   011  network specific number
     --   100  subscriber number
     --   101  reserved
     --   110  abbreviated number
     --   111  reserved for extension

     -- bits 4321: numbering plan indicator
     --   0000  unknown
     --   0001  ISDN/Telephony Numbering Plan (Rec CCITT E.164)
     --   0010  spare
     --   0011  data numbering plan (CCITT Rec X.121)
     --   0100  telex numbering plan (CCITT Rec F.69)
     --   0101  spare
     --   0110  land mobile numbering plan (CCITT Rec E.212)
     --   0111  spare
     --   1000  national numbering plan
     --   1001  private numbering plan
     --   1111  reserved for extension

     --   all other values are reserved.

     -- b)     The following octets representing digits of an address
     --        encoded as a TBCD-STRING.

maxAddressLength  INTEGER ::= 20

ISDN-AddressString ::=
              AddressString (SIZE (1..maxISDN-AddressLength))
     -- This type is used to represent ISDN numbers.

maxISDN-AddressLength  INTEGER ::= 9

FTN-AddressString ::=
              AddressString (SIZE (1..maxFTN-AddressLength))
     -- This type is used to represent forwarded-to numbers.
```

```
maxFTN-AddressLength  INTEGER ::= 15
```

```
ISDN-SubaddressString ::=
              OCTET STRING (SIZE (1..maxISDN-SubaddressLength))
     -- This type is used to represent ISDN subaddresses.
     -- It is composed of
     --   a)   one octet for type of subaddress and odd/even indicator.
     --   b)   20 octets for subaddress information.

     --   a)   The first octet includes a one bit extension indicator, a
     --        3 bits type of subaddress and a one bit odd/even indicator,
     --        encoded as follows:

     --   bit 8: 1  (no extension)

     --   bits 765: type of subaddress
     --        000  NSAP (X.213/ISO 8348 AD2)
     --        010  User Specified
     --        All other values are reserved

     --   bit 4: odd/even indicator
     --        0  even number of address signals
     --        1  odd number of address signals
     --        The odd/even indicator is used when the type of subaddress
     --        is "user specified" and the coding is BCD.

     --   bits 321: 000 (unused)

     --   b) Subaddress information.
     --   The NSAP X.213/ISO8348AD2 address shall be formatted as specified
     --   by octet 4 which contains the Authority and Format Identifier
     --   (AFI). The encoding is made according to the "preferred binary
     --   encoding" as defined in X.213/ISO834AD2. For the definition
     --   of this type of subaddress, see CCITT Rec I.334.

     --   For User-specific subaddress, this field is encoded according
     --   to the user specification, subject to a maximum length of 20
     --   octets. When interworking with X.25 networks BCD coding should
     --   be applied.
```

```
maxISDN-SubaddressLength  INTEGER ::= 21
```

```
ExternalSignalInfo ::= SEQUENCE {
     protocolId                          ProtocolId,
     signalInfo                          SignalInfo,
     -- Information about the internal structure is given in
     -- subclause 7.6.9.
     extensionContainer                  ExtensionContainer              OPTIONAL,
     -- extensionContainer must not be used in version 2
     ...}
```

```
SignalInfo ::= OCTET STRING (SIZE (1..maxSignalInfoLength))
```

```
maxSignalInfoLength  INTEGER ::= 200
     -- This NamedValue represents the theoretical maximum number of
     -- octets which are available to carry a single data type,
     -- without requiring segmentation to cope with the network layer
     -- service. However, the actual maximum size available for a data
     -- type may be lower, especially when other information elements
     -- have to be included in the same component.
```

```
ProtocolId ::= ENUMERATED {
     gsm-0408  (1),
     gsm-0806  (2),
     gsm-BSSMAP  (3),
     -- Value 3 is reserved and must not be used
     ets-300102-1  (4)}
```

```
Ext-ExternalSignalInfo ::= SEQUENCE {
     ext-ProtocolId                      Ext-ProtocolId,
     signalInfo                          SignalInfo,
     -- Information about the internal structure is given in
     -- subclause 7.6.9.10
     extensionContainer                  ExtensionContainer              OPTIONAL,
     ...}
```

```
Ext-ProtocolId ::= ENUMERATED {
     ets-300356  (1),
     ...
      }
-- exception handling:
-- For Ext-ExternalSignalInfo sequences containing this parameter with any
-- other value than the ones listed the receiver shall ignore the whole
-- Ext-ExternalSignalInfo sequence.
```

```
AccessNetworkSignalInfo ::= SEQUENCE {
     accessNetworkProtocolId             AccessNetworkProtocolId,
     signalInfo                          SignalInfo,
     -- Information about the internal structure is given in
     -- subclause 7.6.9.4
     extensionContainer                  ExtensionContainer               OPTIONAL,
     ...}
```

```
AccessNetworkProtocolId ::= ENUMERATED {
     gsm-0806   (1),
     ts3G-25413 (2),
     ...}
     -- exception handling:
     -- For AccessNetworkSignalInfo sequences containing this parameter with any
     -- other value than the ones listed the receiver shall ignore the whole
     -- AccessNetworkSignalInfo sequence.
```

```
AlertingPattern ::= OCTET STRING (SIZE (1) )
     -- This type is used to represent Alerting Pattern

     --   bits 8765 : 0000 (unused)

     --   bits 43 : type of Pattern
     --        00 level
     --        01 category
     --        10 category
     --        all other values are reserved.

     --   bits 21 : type of alerting

alertingLevel-0   AlertingPattern ::= '00000000'B
alertingLevel-1   AlertingPattern ::= '00000001'B
alertingLevel-2   AlertingPattern ::= '00000010'B
     -- all other values of Alerting level are reserved
     -- Alerting Levels are defined in GSM 02.07

alertingCategory-1   AlertingPattern ::= '00000100'B
alertingCategory-2   AlertingPattern ::= '00000101'B
alertingCategory-3   AlertingPattern ::= '00000110'B
alertingCategory-4   AlertingPattern ::= '00000111'B
alertingCategory-5   AlertingPattern ::= '00001000'B
     -- all other values of Alerting Category are reserved
     -- Alerting categories are defined in GSM 02.07
```

-- data types for numbering and identification

```
IMSI ::= TBCD-STRING (SIZE (3..8))
     -- digits of MCC, MNC, MSIN are concatenated in this order.
```

```
Identity ::= CHOICE {
     imsi                                IMSI,
     imsi-WithLMSI                       IMSI-WithLMSI}
```

```
IMSI-WithLMSI ::= SEQUENCE {
     imsi                                IMSI,
     lmsi                                LMSI,
     -- a special value 00000000 indicates that the LMSI is not in use
     ...}
```

```
ASCI-CallReference ::= TBCD-STRING (SIZE (1..8))
     -- digits of VGCS/VBC-area,Group-ID are concatenated in this order.
```

```
TMSI ::= OCTET STRING (SIZE (1..4))
```

```
SubscriberId ::= CHOICE {
     imsi                                [0] IMSI,
```

```
    tmsi                                [1] TMSI}
```

```
IMEI ::= TBCD-STRING (SIZE (8))
    --   Refers to International Mobile Station Equipment Identity
    --   and Software Version Number (SVN) defined in TS GSM 03.03.
    --   If the SVN is not present the last octet shall contain the
    --   digit 0 and a filler.
    --   If present the SVN shall be included in the last octet.
```

```
HLR-Id ::= IMSI
    -- leading digits of IMSI, i.e. (MCC, MNC, leading digits of
    -- MSIN) forming HLR Id defined in TS GSM 03.03.
```

```
HLR-List ::= SEQUENCE SIZE (1..maxNumOfHLR-Id) OF
                                        HLR-Id
```

```
maxNumOfHLR-Id  INTEGER ::= 50
```

```
LMSI ::= OCTET STRING (SIZE (4))
```

```
GlobalCellId ::= OCTET STRING (SIZE (5..7))
    -- Refers to Cell Global Identification defined in TS GSM 03.03.
    -- The internal structure is defined as follows:
    -- octet 1 bits 4321                Mobile Country Code 1st digit
    --         bits 8765                Mobile Country Code 2nd digit
    -- octet 2 bits 4321                Mobile Country Code 3rd digit
    --         bits 8765                Mobile Network Code 3rd digit
    --                                  or filler (1111) for 2 digit MNCs
    -- octet 3 bits 4321                Mobile Network Code 1st digit
    --         bits 8765                Mobile Network Code 2nd digit
    -- octets 4 and 5                   Location Area Code according to TS GSM 04.08
    -- octets 6 and 7                   Cell Identity (CI) according to TS GSM 04.08
```

```
NetworkResource ::= ENUMERATED {
    plmn  (0),
    hlr  (1),
    vlr  (2),
    pvlr  (3),
    controllingMSC  (4),
    vmsc  (5),
    eir  (6),
    rss  (7)}
```

```
NAEA-PreferredCI ::= SEQUENCE {
    naea-PreferredCIC                   [0] NAEA-CIC,
    extensionContainer                  [1] ExtensionContainer          OPTIONAL,
    ...}
```

```
NAEA-CIC ::= OCTET STRING (SIZE (3))
    -- The internal structure is defined by the Carrier Identification
    -- parameter in ANSI T1.113.3. Carrier codes between “000” and “999” may
    -- be encoded as 3 digits using “000” to “999” or as 4 digits using
    -- “0000” to “0999”. Carrier codes between “1000” and “9999” are encoded
    -- using 4 digits.
```

```
SubscriberIdentity ::= CHOICE {
    imsi                                [0] IMSI,
    msisdn                              [1] ISDN-AddressString
    }
```

```
LCSClientExternalID ::= SEQUENCE {
    externalAddress                     [0] AddressString               OPTIONAL,
    extensionContainer                  [1] ExtensionContainer          OPTIONAL,
    ... }
```

```
LCSClientInternalID ::= ENUMERATED {
    broadcastService                    (0),
    o-andM-HPLMN                        (1),
    o-andM-VPLMN                        (2),
    anonymousLocation                   (3),
    targetMSsubscribedService           (4),
    ... }
-- for a CAMEL phase 3 PLMN operator client, the value targetMSsubscribedService shall be used
```

```
-- data types for CAMEL
```

```
CellGlobalIdOrServiceAreaIdOrLAI ::= CHOICE {
     cellGlobalIdOrServiceAreaIdFixedLength   [0] CellGlobalIdOrServiceAreaIdFixedLength,
     laiFixedLength                           [1] LAIFixedLength}
```

```
CellGlobalIdOrServiceAreaIdFixedLength ::= OCTET STRING (SIZE (7))
     -- Refers to Cell Global Identification or Service Are Identification
     -- defined in 3G TS 23.003.
     -- The internal structure is defined as follows:
     -- octet 1 bits 4321                Mobile Country Code 1st digit
     --         bits 8765                Mobile Country Code 2nd digit
     -- octet 2 bits 4321                Mobile Country Code 3rd digit
     --         bits 8765                Mobile Network Code 3rd digit
     --                                  or filler (1111) for 2 digit MNCs
     -- octet 3 bits 4321                Mobile Network Code 1st digit
     --         bits 8765                Mobile Network Code 2nd digit
     -- octets 4 and 5                   Location Area Code according to 3G TS 24.008
     -- octets 6 and 7                   Cell Identity (CI) value or
     --                                  Service Area Code (SAC) value
     --                                  according to 3G TS 23.003
```

```
LAIFixedLength ::= OCTET STRING (SIZE (5))
     -- Refers to Location Area Identification defined in TS GSM 03.03.
     -- The internal structure is defined as follows:
     -- octet 1 bits 4321                Mobile Country Code 1st digit
     --         bits 8765                Mobile Country Code 2nd digit
     -- octet 2 bits 4321                Mobile Country Code 3rd digit
     --         bits 8765                Mobile Network Code 3rd digit
     --                                  or filler (1111) for 2 digit MNCs
     -- octet 3 bits 4321                Mobile Network Code 1st digit
     --         bits 8765                Mobile Network Code 2nd digit
     -- octets 4 and 5                   Location Area Code according to TS GSM 04.08
```

-- data types for subscriber management

```
BasicServiceCode ::= CHOICE {
     bearerService                       [2] BearerServiceCode,
     teleservice                         [3] TeleserviceCode}
```

```
Ext-BasicServiceCode ::= CHOICE {
     ext-BearerService                   [2] Ext-BearerServiceCode,
     ext-Teleservice                     [3] Ext-TeleserviceCode}
```

```
EMLPP-Info ::= SEQUENCE {
     maximumentitledPriority             EMLPP-Priority,
     defaultPriority                     EMLPP-Priority,
     extensionContainer                  ExtensionContainer              OPTIONAL,
     ...}
```

```
EMLPP-Priority ::= INTEGER (0..15)
     -- The mapping from the values A,B,0,1,2,3,4 to the integer-value is
     -- specified as follows where A is the highest and 4 is the lowest
     -- priority level
     -- the integer values 7-15 are spare and shall be mapped to value 4
```

```
priorityLevelA                           EMLPP-Priority ::= 6
priorityLevelB                           EMLPP-Priority ::= 5
priorityLevel0                           EMLPP-Priority ::= 0
priorityLevel1                           EMLPP-Priority ::= 1
priorityLevel2                           EMLPP-Priority ::= 2
priorityLevel3                           EMLPP-Priority ::= 3
priorityLevel4                           EMLPP-Priority ::= 4
```

```
MC-SS-Info ::= SEQUENCE {
     ss-Code                             [0] SS-Code,
     ss-Status                           [1] Ext-SS-Status,
     nbrSB                               [2] MaxMC-Bearers,
     nbrUser                             [3] MC-Bearers,
     extensionContainer                  [4] ExtensionContainer          OPTIONAL,
     ...}
```

```
MaxMC-Bearers ::= INTEGER (2..maxNumOfMC-Bearers)
```

```
MC-Bearers ::= INTEGER (1..maxNumOfMC-Bearers)
```

```
maxNumOfMC-Bearers  INTEGER ::= 7
```

```
Ext-SS-Status ::= OCTET STRING (SIZE (1..5))

    -- OCTET 1:
    --
    -- bits 8765: 0000 (unused)
    -- bits 4321: Used to convey the "P bit","R bit","A bit" and "Q bit",
    --            representing supplementary service state information
    --            as defined in TS GSM 03.11

    -- bit 4: "Q bit"

    -- bit 3: "P bit"

    -- bit 2: "R bit"

    -- bit 1: "A bit"

    -- OCTETS 2-5: reserved for future use. They shall be discarded if
    -- received and not understood.
```

```
   -- data types for geographic location

AgeOfLocationInformation ::= INTEGER (0..32767)
-- the value represents the elapsed time in minutes since the last
-- network contact of the mobile station (i.e. the actuality of the
-- location information).
-- value “0” indicates that the MS is currently in contact with the
--           network
-- value “32767” indicates that the location information is at least
--               32767 minutes old
```

```
END
```