

Source: TSG_N WG4
Title: CRs to 3G Work Item "GPRS"
Agenda item: 6.13.4
Document for: APPROVAL

Introduction:

This document contains "9" CRs on Work Item "GPRS", that have been agreed by TSG_N WG4, and are forwarded to TSG_N Plenary meeting #8 for approval.

TDoc	SPEC	CR	REV	PHAS	VERS	SUBJECT	CAT	NEW_VERS
N4-000274	09.02	A296		R97	6.7.0	Clarification for ReportSM-DeliveryStatus operation	F	6.8.0
N4-000275	09.02	A297		R98	7.4.0	Clarification for ReportSM-DeliveryStatus operation	A	7.5.0
N4-000376	09.02	A298	1	R97	6.7.0	Use of NAM parameter with MAP-INSERT-SUBSCRIBER-DATA	F	6.8.0
N4-000377	09.02	A299	1	R98	7.4.0	Use of NAM parameter with MAP-INSERT-SUBSCRIBER-DATA	A	7.5.0
N4-000276	29.002	141		R99	3.4.0	Clarification for ReportSM-DeliveryStatus operation	A	3.5.0
N4-000378	29.002	144	1	R99	3.4.0	Use of NAM paramter with MAP-INSERT-SUBSCRIBER-DATA	A	3.5.0
N2-000070	29.060	092	1	R99	3.4.0	Clean up for 29.060	F	3.5.0
N4-000246	29.060	102		R99	3.4.0	Alignment of text with tables	F	3.5.0
N4-000296	29.060	119		R99	3.4.0	Clarification on the use of SGSN address at PDU notification	F	3.5.0

CHANGE REQUEST

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

09.02 CR A296

Current Version: **6.7.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**
 list expected approval meeting # here ↑

for approval
 for information

strategic
 non-strategic (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: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: **N4** **Date:** **15.5.2000**

Subject: Clarification for ReportSM-DeliveryStatus operation

Work item: GPRS

Category: F Correction **Release:** Phase 2
 A Corresponds to a correction in an earlier release Release 96
 (only one category shall be marked with an X) B Addition of feature Release 97
 C Functional modification of feature Release 98
 D Editorial modification Release 99
 Release 00

Reason for change: DeliveryOutcomeIndicator and additionalSM-DeliveryOutcome are optional parameters in ASN.1 but they both can not be set at the same time. This is to avoid the possibility that HLR receives two SM-DeliveryOutcome's for same subscriber.
 Also if the DeliveryOutcomeIndicator is set the additionalAbsentSubscriberDiagnosticSM shall be absent because absentSubscriberDiagnosticSM shall then include absent reason for GPRS subscriber.
 Category is C1 (essential correction)

Clauses affected: 17.7.6

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:

17.7.6 Short message data types

```
MAP-SM-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SM-DataTypes (16) version4 (4)}

DEFINITIONS

IMPLICIT TAGS

 ::=

BEGIN

EXPORTS
    RoutingInfoForSM-Arg,
    RoutingInfoForSM-Res,
    MO-ForwardSM-Arg,
    MO-ForwardSM-Res,
    MT-ForwardSM-Arg,
    MT-ForwardSM-Res,
    ReportSM-DeliveryStatusArg,
    ReportSM-DeliveryStatusRes,
    AlertServiceCentreArg,
    InformServiceCentreArg,
    ReadyForSM-Arg,
    ReadyForSM-Res,
    SM-DeliveryOutcome,
    AlertReason
;

IMPORTS
    AddressString,
    ISDN-AddressString,
    SignalInfo,
    IMSI,
    LMSI
FROM MAP-CommonDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-CommonDataTypes (18) version4 (4)}

    AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ER-DataTypes (17) version4 (4)}

    ExtensionContainer
FROM MAP-ExtensionDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version4 (4)}
;

.....
```

```

ReportSM-DeliveryStatusArg ::= SEQUENCE {
    msisdn                ISDN-AddressString,
    serviceCentreAddress  AddressString,
    sm-DeliveryOutcome    SM-DeliveryOutcome,
    absentSubscriberDiagnosticSM [0] AbsentSubscriberDiagnosticSM
                                OPTIONAL,
    extensionContainer    [1] ExtensionContainer
                                OPTIONAL,
    ...,
    gprsSupportIndicator  [2] NULL
                                OPTIONAL,
    -- gprsSupportIndicator is set only if the SMS-GMSC supports
    -- handling of two delivery outcomes
    deliveryOutcomeIndicator [3] NULL
                                OPTIONAL,
    -- DeliveryOutcomeIndicator is set when the SM-DeliveryOutcome
    -- is for GPRS
    additionalSM-DeliveryOutcome [4] SM-DeliveryOutcome
                                OPTIONAL,
    -- If received, additionalSM-DeliveryOutcome is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalSM-DeliveryOutcome shall be absent
    additionalAbsentSubscriberDiagnosticSM [5] AbsentSubscriberDiagnosticSM OPTIONAL
    -- If received additionalAbsentSubscriberDiagnosticSM is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalAbsentSubscriberDiagnosticSM
    -- shall be absent
}

```

CHANGE REQUEST

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

09.02 CR A297

Current Version: **7.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**
 list expected approval meeting # here ↑

for approval
 for information

strategic
 non-strategic (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: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: **N4** **Date:** **15.5.2000**

Subject: Clarification for ReportSM-DeliveryStatus operation

Work item: GPRS

Category: <i>(only one category shall be marked with an X)</i>	F Correction	<input type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input checked="" type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input checked="" type="checkbox"/>
D Editorial modification	<input type="checkbox"/>	Release 99	<input type="checkbox"/>	Release 00	<input type="checkbox"/>

Reason for change: DeliveryOutcomeIndicator and additionalSM-DeliveryOutcome are optional parameters in ASN.1 but they both can not be set at the same time. This is to avoid the possibility that HLR receives two SM-DeliveryOutcome's for same subscriber.

Also if the DeliveryOutcomeIndicator is set the additionalAbsentSubscriberDiagnosticSM shall be absent because absentSubscriberDiagnosticSM shall then include absent reason for GPRS subscriber.

Category is C1 (essential correction)

Clauses affected: 17.7.6

Other specs affected:	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

17.7.6 Short message data types

```
MAP-SM-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SM-DataTypes (16) version5 (5)}

DEFINITIONS

IMPLICIT TAGS

 ::=

BEGIN

EXPORTS
    RoutingInfoForSM-Arg,
    RoutingInfoForSM-Res,
    MO-ForwardSM-Arg,
    MO-ForwardSM-Res,
    MT-ForwardSM-Arg,
    MT-ForwardSM-Res,
    ReportSM-DeliveryStatusArg,
    ReportSM-DeliveryStatusRes,
    AlertServiceCentreArg,
    InformServiceCentreArg,
    ReadyForSM-Arg,
    ReadyForSM-Res,
    SM-DeliveryOutcome,
    AlertReason
;

IMPORTS
    AddressString,
    ISDN-AddressString,
    SignalInfo,
    IMSI,
    LMSI
FROM MAP-CommonDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-CommonDataTypes (18) version5 (5)}

    AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ER-DataTypes (17) version5 (5)}

    ExtensionContainer
FROM MAP-ExtensionDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version5 (5)}
;

.....
```

```

ReportSM-DeliveryStatusArg ::= SEQUENCE {
    msisdn                ISDN-AddressString,
    serviceCentreAddress  AddressString,
    sm-DeliveryOutcome    SM-DeliveryOutcome,
    absentSubscriberDiagnosticSM [0] AbsentSubscriberDiagnosticSM
                                OPTIONAL,
    extensionContainer    [1] ExtensionContainer          OPTIONAL,
    ...,
    gprsSupportIndicator  [2] NULL                        OPTIONAL,
    -- gprsSupportIndicator is set only if the SMS-GMSC supports
    -- handling of two delivery outcomes
    deliveryOutcomeIndicator [3] NULL                    OPTIONAL,
    -- DeliveryOutcomeIndicator is set when the SM-DeliveryOutcome
    -- is for GPRS
    additionalSM-DeliveryOutcome [4] SM-DeliveryOutcome  OPTIONAL,
    -- If received, additionalSM-DeliveryOutcome is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalSM-DeliveryOutcome shall be absent
    additionalAbsentSubscriberDiagnosticSM [5] AbsentSubscriberDiagnosticSM OPTIONAL
    -- If received additionalAbsentSubscriberDiagnosticSM is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalAbsentSubscriberDiagnosticSM
    -- shall be absent
}

```

CHANGE REQUEST

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

09.02 CR A298r1

Current Version: **6.7.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#8**
list expected approval meeting # here ↑

for approval for information **X**

strategic (for SMG use only)
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:** **17 May 2000**

Subject: Use of NAM parameter with MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN (Release 97)

Work item: GPRS

Category:	F Correction	<input checked="" type="checkbox"/>	Release:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input checked="" type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input type="checkbox"/>
				Release 00	<input type="checkbox"/>

Reason for change: Category C1:
To clarify that the Network Access Method Parameter should be mandatory when used with the MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN as part of GPRS subscriber location updating, to ensure interworking problems do not occur.

Clauses affected:

Other specs affected:	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

8.8.1 MAP-INSERT-SUBSCRIBER-DATA service

8.8.1.1 Definition

This service is used by an HLR to update a VLR with certain subscriber data in the following occasions:

- the operator has changed the subscription of one or more supplementary services, basic services or data of a subscriber. Note that in case of withdrawal of a Basic or Supplementary service this primitive shall not be used;
- the operator has applied, changed or removed Operator Determined Barring;
- the subscriber has changed data concerning one or more supplementary services by using a subscriber procedure;
- the HLR provides the VLR with subscriber parameters at location updating of a subscriber or at restoration. In this case, this service is used to indicate explicitly that a supplementary service is not provisioned, if the supplementary service specification requires it. The only supplementary services which have this requirement are the CLIR and COLR services. Network access mode is provided only in restoration.

Also this service is used by an HLR to update a SGSN with certain subscriber data in the following occasions:

- if the GPRS subscription has changed;
- if the network access mode is changed;
- the operator has applied, changed or removed Operator Determined Barring;
- the HLR provides the SGSN with subscriber parameters at GPRS location updating of a subscriber.

It is a confirmed service and consists of the primitives shown in table 6.8/1.

8.8.1.2 Service primitives

Table 8.8/1: MAP-INSERT-SUBSCRIBER-DATA

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	C	C(=)		
MSISDN	C	C(=)		
Category	C	C(=)		
Subscriber Status	C	C(=)		
Bearer service List	C	C(=)	C	C(=)
Teleservice List	C	C(=)	C	C(=)
Forwarding information List	C	C(=)		
Call barring information List	C	C(=)		
CUG information List	C	C(=)		
SS-Data List	C	C(=)		
eMLPP Subscription Data	C	C(=)		
Operator Determined Barring General data	C	C(=)	C	C(=)
Operator Determined Barring HPLMN data	C	C(=)		
Roaming Restriction Due To Unsupported Feature	C	C(=)		
Regional Subscription Data	C	C(=)		
VLR CAMEL Subscription Info	C	C(=)		
Voice Broadcast Data	C	C(=)		
Voice Group Call Data	C	C(=)		
Network access mode	C	C(=)		
GPRS Subscription Data	C	C(=)		
Roaming Restricted In SGSN Due To Unsupported Feature	C	C(=)		
North American Equal Access preferred Carrier Id List	U	C(=)		
LSA Information	C	C(=)		
SS-Code List			C	C(=)
LMU Identifier	C	C(=)		
LCS Information	C	C(=)		
Regional Subscription Response			C	C(=)
Supported CAMEL Phases			C	C(=)
User error			U	C(=)
Provider error				O

8.8.1.3 Parameter use

Network access mode

This parameter defines if the subscriber has access to MSC/VLR and/or to SGSN. This parameter is used by SGSN and MSC/VLR. In VLR, the parameter is used only as part of Restore Data Procedure and the parameter is not stored in the VLR. This parameter shall always be sent to the SGSN as part of the GPRS subscriber data at GPRS location updating. It shall be sent to the SGSN if it is changed as a result of administrative action.

All parameters are described in subclause 7.6. The following clarifications are applicable:

IMSI

It is only included if the service is not used in an ongoing transaction (e.g. location updating). This parameter is used by the VLR and the SGSN.

CHANGE REQUEST

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

09.02 CR A299r1

Current Version: **7.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**
list expected approval meeting # here ↑

for approval for information **X**

strategic (for SMG use only)
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:** 17 May 2000

Subject: Use of NAM parameter with MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN (Release 98)

Work item: GPRS

Category:	F Correction	<input type="checkbox"/>	Releases:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	X		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	X
	D Editorial modification	<input type="checkbox"/>		Release 99	<input type="checkbox"/>
				Release 00	<input type="checkbox"/>

Reason for change: Category C1:
To clarify that the Network Access Method Parameter should be mandatory when used with the MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN as part of GPRS subscriber location updating, to ensure interworking problems do not occur.

Clauses affected:

Other specs affected:

Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
MS test specifications	<input type="checkbox"/>	→ List of CRs:	
BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

8.8.1 MAP-INSERT-SUBSCRIBER-DATA service

8.8.1.1 Definition

This service is used by an HLR to update a VLR with certain subscriber data in the following occasions:

- the operator has changed the subscription of one or more supplementary services, basic services or data of a subscriber. Note that in case of withdrawal of a Basic or Supplementary service this primitive shall not be used;
- the operator has applied, changed or removed Operator Determined Barring;
- the subscriber has changed data concerning one or more supplementary services by using a subscriber procedure;
- the HLR provides the VLR with subscriber parameters at location updating of a subscriber or at restoration. In this case, this service is used to indicate explicitly that a supplementary service is not provisioned, if the supplementary service specification requires it. The only supplementary services which have this requirement are the CLIR and COLR services. Network access mode is provided only in restoration.

Also this service is used by an HLR to update a SGSN with certain subscriber data in the following occasions:

- if the GPRS subscription has changed;
- if the network access mode is changed;
- the operator has applied, changed or removed Operator Determined Barring;
- the HLR provides the SGSN with subscriber parameters at GPRS location updating of a subscriber.

It is a confirmed service and consists of the primitives shown in table 6.8/1.

8.8.1.2 Service primitives

Table 8.8/1: MAP-INSERT-SUBSCRIBER-DATA

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	C	C(=)		
MSISDN	C	C(=)		
Category	C	C(=)		
Subscriber Status	C	C(=)		
Bearer service List	C	C(=)	C	C(=)
Teleservice List	C	C(=)	C	C(=)
Forwarding information List	C	C(=)		
Call barring information List	C	C(=)		
CUG information List	C	C(=)		
SS-Data List	C	C(=)		
eMLPP Subscription Data	C	C(=)		
Operator Determined Barring General data	C	C(=)	C	C(=)
Operator Determined Barring HPLMN data	C	C(=)		
Roaming Restriction Due To Unsupported Feature	C	C(=)		
Regional Subscription Data	C	C(=)		
VLR CAMEL Subscription Info	C	C(=)		
Voice Broadcast Data	C	C(=)		
Voice Group Call Data	C	C(=)		
Network access mode	C	C(=)		
GPRS Subscription Data	C	C(=)		
Roaming Restricted In SGSN Due To Unsupported Feature	C	C(=)		
North American Equal Access preferred Carrier Id List	U	C(=)		
LSA Information	C	C(=)		
SS-Code List			C	C(=)
LMU Identifier	C	C(=)		
LCS Information	C	C(=)		
Regional Subscription Response			C	C(=)
Supported CAMEL Phases			C	C(=)
User error			U	C(=)
Provider error				O

8.8.1.3 Parameter use

Network access mode

This parameter defines if the subscriber has access to MSC/VLR and/or to SGSN. This parameter is used by SGSN and MSC/VLR. In VLR, the parameter is used only as part of Restore Data Procedure and the parameter is not stored in the VLR. This parameter shall always be sent to the SGSN as part of the subscriber data at GPRS location updating. It shall be sent to the SGSN or VLR as appropriate if it is to be changed as a result of administrative action.

All parameters are described in subclause 7.6. The following clarifications are applicable:

IMSI

It is only included if the service is not used in an ongoing transaction (e.g. location updating). This parameter is used by the VLR and the SGSN.

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 141

Current Version: **3.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**
 list expected approval meeting # here ↑

for approval
 for information

strategic
 non-strategic (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: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: **N4** **Date:** **15.5.2000**

Subject: **Clarification for ReportSM-DeliveryStatus operation**

Work item: **GPRS**

Category: F Correction
 A Corresponds to a correction in an earlier release
 B Addition of feature
 C Functional modification of feature
 D Editorial modification
 (only one category shall be marked with an X)

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

Reason for change: DeliveryOutcomeIndicator and additionalSM-DeliveryOutcome are optional parameters in ASN.1 but they both can not be set at the same time. This is to avoid the possibility that HLR receives two SM-DeliveryOutcome's for same subscriber.

Also if the DeliveryOutcomeIndicator is set the additionalAbsentSubscriberDiagnosticSM shall be absent because absentSubscriberDiagnosticSM shall then include absent reason for GPRS subscriber.

Category is C1 (essential correction)

Clauses affected: **17.7.6**

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:

17.7.6 Short message data types

```
MAP-SM-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SM-DataTypes (16) version6 (6)}

DEFINITIONS

IMPLICIT TAGS

 ::=

BEGIN

EXPORTS
    RoutingInfoForSM-Arg,
    RoutingInfoForSM-Res,
    MO-ForwardSM-Arg,
    MO-ForwardSM-Res,
    MT-ForwardSM-Arg,
    MT-ForwardSM-Res,
    ReportSM-DeliveryStatusArg,
    ReportSM-DeliveryStatusRes,
    AlertServiceCentreArg,
    InformServiceCentreArg,
    ReadyForSM-Arg,
    ReadyForSM-Res,
    SM-DeliveryOutcome,
    AlertReason
;

IMPORTS
    AddressString,
    ISDN-AddressString,
    SignalInfo,
    IMSI,
    LMSI
FROM MAP-CommonDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-CommonDataTypes (18) version5 (5)}

    AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ER-DataTypes (17) version5 (5)}

    ExtensionContainer
FROM MAP-ExtensionDataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version5 (5)}
;

.....
```

```

ReportSM-DeliveryStatusArg ::= SEQUENCE {
    msisdn                ISDN-AddressString,
    serviceCentreAddress  AddressString,
    sm-DeliveryOutcome    SM-DeliveryOutcome,
    absentSubscriberDiagnosticSM [0] AbsentSubscriberDiagnosticSM
                                OPTIONAL,
    extensionContainer    [1] ExtensionContainer          OPTIONAL,
    ...,
    gprsSupportIndicator  [2] NULL                        OPTIONAL,
    -- gprsSupportIndicator is set only if the SMS-GMSC supports
    -- handling of two delivery outcomes
    deliveryOutcomeIndicator [3] NULL                    OPTIONAL,
    -- DeliveryOutcomeIndicator is set when the SM-DeliveryOutcome
    -- is for GPRS
    additionalSM-DeliveryOutcome [4] SM-DeliveryOutcome  OPTIONAL,
    -- If received, additionalSM-DeliveryOutcome is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalSM-DeliveryOutcome shall be absent
    additionalAbsentSubscriberDiagnosticSM [5] AbsentSubscriberDiagnosticSM OPTIONAL
    -- If received additionalAbsentSubscriberDiagnosticSM is for GPRS
    -- If DeliveryOutcomeIndicator is set, then AdditionalAbsentSubscriberDiagnosticSM
    -- shall be absent
}

```


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 144r1

Current Version: **3.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#8**
list expected approval meeting # here ↑

for approval for information **X**

strategic (for SMG use only)
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:** 17 May 2000

Subject: Use of NAM parameter with MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN

Work item: GPRS

Category:	F Correction	<input type="checkbox"/>	Releases:	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	X		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	X
				Release 00	<input type="checkbox"/>

Reason for change: To clarify that the Network Access Method Parameter should be mandatory when used with the MAP-INSERT-SUBSCRIBER-DATA service between HLR and SGSN as part of GPRS subscriber location updating, to ensure interworking problems do not occur.

Clauses affected:

Other specs affected:	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:

8.8.1 MAP-INSERT-SUBSCRIBER-DATA service

8.8.1.1 Definition

This service is used by an HLR to update a VLR with certain subscriber data in the following occasions:

- the operator has changed the subscription of one or more supplementary services, basic services or data of a subscriber. Note that in case of withdrawal of a Basic or Supplementary service this primitive shall not be used;
- the operator has applied, changed or removed Operator Determined Barring;
- the subscriber has changed data concerning one or more supplementary services by using a subscriber procedure;
- the HLR provides the VLR with subscriber parameters at location updating of a subscriber or at restoration. In this case, this service is used to indicate explicitly that a supplementary service is not provisioned, if the supplementary service specification requires it. The only supplementary services which have this requirement are the CLIR and COLR services. Network access mode is provided only in restoration. If the Super-Charger functionality is supported the HLR may not need to provide the VLR with subscriber parameters at location updating of a subscriber. See TS 23.116.

Also this service is used by an HLR to update an SGSN with certain subscriber data in the following occasions:

- if the GPRS subscription has changed;
- if the network access mode is changed;
- the operator has applied, changed or removed Operator Determined Barring;
- the HLR provides the SGSN with subscriber parameters at GPRS location updating of a subscriber. If the Super-Charger functionality is supported the HLR may not need to provide the SGSN with subscriber parameters. See 3G TS 23.116.

It is a confirmed service and consists of the primitives shown in table 8.8/1.

8.8.1.2 Service primitives

Table 8.8/1: MAP-INSERT-SUBSCRIBER-DATA

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	C	C(=)		
MSISDN	C	C(=)		
Category	C	C(=)		
Subscriber Status	C	C(=)		
Bearer service List	C	C(=)	C	C(=)
Teleservice List	C	C(=)	C	C(=)
Forwarding information List	C	C(=)		
Call barring information List	C	C(=)		
CUG information List	C	C(=)		
SS-Data List	C	C(=)		
eMLPP Subscription Data	C	C(=)		
MC-Subscription Data	C	C(=)		
Operator Determined Barring General data	C	C(=)	C	C(=)
Operator Determined Barring HPLMN data	C	C(=)		
Roaming Restriction Due To Unsupported Feature	C	C(=)		
Regional Subscription Data	C	C(=)		
VLR CAMEL Subscription Info	C	C(=)		
Voice Broadcast Data	C	C(=)		
Voice Group Call Data	C	C(=)		
Network access mode	C	C(=)		
GPRS Subscription Data	C	C(=)		
Roaming Restricted In SGSN Due To Unsupported Feature	C	C(=)		
North American Equal Access preferred Carrier Id List	U	C(=)		
SGSN Camel Subscription Info	C	C(=)		
LSA Information	C	C(=)		
IST Alert Timer	C	C(=)		
SS-Code List			C	C(=)
LMU Identifier	C	C(=)		
LCS Information	C	C(=)		
CS Allocation/Retention priority	C	C(=)		
Super-Charger Supported In HLR	C	C(=)		
Regional Subscription Response			C	C(=)
Supported CAMEL Phases			C	C(=)
User error			U	C(=)
Provider error				O

8.8.1.3 Parameter use

All parameters are described in subclause 7.6. The following clarifications are applicable:

Network access mode

This parameter defines if the subscriber has access to MSC/VLR and/or to SGSN. This parameter is used by SGSN and MSC/VLR. In VLR, the parameter is used only as part of Restore Data Procedure and the parameter is not stored in the VLR. This parameter shall always be sent to the SGSN as part of the GPRS subscriber data at GPRS location updating. It shall be sent to the SGSN if it is changed as a result of administrative action.

IMSI

It is only included if the service is not used in an ongoing transaction (e.g. location updating). This parameter is used by the VLR and the SGSN.

3G CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
29.060	CR 092r1	Current Version: 3.4.0
3G specification number ↑	↑ CR number as allocated by 3G support team	
For submission to TSG CN#08 <i>list TSG meeting no. here ↑</i>	For approval <input checked="" type="checkbox"/> <i>(only one box should be marked with an X)</i>	For information <input type="checkbox"/>

Form: 3G CR cover sheet, version 1.0 The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf>

Proposed change affects: USIM ME UTRAN Core Network
(at least one should be marked with an X)

Source: N4 **Date:** 28/03/2000

Subject: Clean up for 29.060

3G Work item: GTP enhancement

Category: F Correction
(only one category shall be marked with an X)
 A Corresponds to a correction in a 2G specification
 B Addition of feature
 C Functional modification of feature
 D Editorial modification

Reason for change: The purpose of this change request is to modify some editorial mistakes and for clarification.

1. When creating a secondary PDP context, the IMSI IE is not needed in the Create PDP Context Request. This should be clearly specified in 7.3.1.
2. When creating a secondary PDP context, the Selection Mode IE is not needed in Create PDP Context Request. In 7.3.1, the presence requirement of this IE in Table 4 is mistaken and not aligned with the description in the same sub-clause.
3. When the MS requests a static PDP address, the End User Address IE shall not be present. This should be clearly specified in 7.3.2.
4. The value of the Tunnel Endpoint Identifier IE received in the PDU Notification Request is set to the Tunnel Endpoint Identifier in the GTP header of the PDU Notification Reject Request. This should be clearly specified in 7.3.14,
5. Relocation Cancel procedure is initiated by old SGSN. In 7.5.10, there is an editorial mistake.
6. The approved CR 29.060 52r2 (N2B000350) introduced new GTP-C message, "Supported Extension Headers notification". The value of Tunnel Endpoint Identifier in the header of this new message should be 0 because this message is not specific to a user. This should be clearly specified in 8.2.

Clauses affected: 7.3.1-2, 7.3.14, 7.5.10, 8.2

Other specs Affected:

Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
Other 2G core specifications	<input type="checkbox"/>	→ List of CRs:	
MS test specifications	<input type="checkbox"/>	→ List of CRs:	
BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:



help.doc

<----- double-click here for help and instructions on how to create a CR.

7.3.1 Create PDP Context Request

A Create PDP Context Request shall be sent from a SGSN node to a GGSN node as a part of the GPRS PDP Context Activation procedure. The GGSN IP address where the SGSN sends the Create PDP Context Request is the first IP address in the list of IP addresses provided by the DNS server. After sending the Create PDP Context Request message, the SGSN marks the PDP context as 'waiting for response'. In this state the SGSN shall accept G-PDUs from the GGSN but shall not send these G-PDUs to the MS. A valid request initiates the creation of a tunnel between a PDP Context in a SGSN and a PDP Context in a GGSN. If the procedure is not successfully completed, the SGSN repeats the Create PDP Context Request message to the next GGSN address in the list of IP addresses, if there is one. If the list is exhausted the activation procedure fails.

The Tunnel Endpoint Identifier Data I field specifies a downlink Tunnel Endpoint Identifier for G-PDUs which is chosen by the SGSN. The GGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent downlink G-PDUs which are related to the requested PDP context.

The Tunnel Endpoint Identifier Signalling field specifies a downlink Tunnel Endpoint Identifier for signalling messages which is chosen by the SGSN. The GGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent downlink signalling messages which are related to the requested PDP context.

The MSISDN of the MS is passed to the GGSN inside the Create PDP Context Request; This additional information can be used when a secure access to a remote application residing on a server is needed. The GGSN would be in fact able to provide the user identity (i. e. the MSISDN) to the remote application server, providing it with the level of trust granted to users through successfully performing the GPRS authentication procedures, without having to re-authenticate the user at the application level.

If the MS requests a dynamic PDP address and a dynamic PDP address is allowed, then the PDP Address field in the End User Address information element shall be empty. If the MS requests a static PDP Address then the PDP Address field in the End User Address information element shall contain the static PDP Address. In case the PDP addresses carried in the End User Address and optionally in the Protocol Configuration Option information element contain contradicting information, the PDP address carried in the End User Address information element takes the higher precedence. The Quality of Service Profile information element shall be the QoS values to be negotiated between the MS and the SGSN at PDP Context activation.

The SGSN shall include an SGSN Address for signalling and an SGSN address for user traffic, which may differ from that provided by the underlying network service (e.g. IP). The GGSN shall store these SGSN Addresses and use them when sending signalling on this GTP tunnel or G-PDUs to the SGSN for the MS.

The SGSN shall include a Recovery information element into the Create PDP Context Request if the SGSN is in contact with the GGSN for the very first time or if the SGSN has restarted recently and the new Restart Counter value has not yet been indicated to the GGSN. The GGSN that receives a Recovery information element in the Create PDP Context Request message element shall handle it in the same way as when receiving an Echo Response message. The Create PDP Context Request message shall be considered as a valid activation request for the PDP context included in the message.

The SGSN shall include either the MS provided APN, a subscribed APN or an SGSN selected APN in the message; the Access Point Name may be used by the GGSN to differentiate accesses to different external networks. The Selection Mode information element shall indicate the origin of the APN in the message.

For secondary PDP contexts the SGSN shall include the NSAPI of the primary PDP context to associate the secondary PDP context with and a TFT to be used for packet filtering by GGSN. When creating a secondary PDP context, the Selection mode, IMSI, MSISDN, End User Address, Access Point Name and Protocol Configuration Options information elements shall not be included in the message.

The optional Protocol Configuration Options information element is applicable for the end user protocol 'IP' only.

The SGSN shall select one GGSN based on the user provided or SGSN selected APN. The GGSN may have a logical name that is converted to an address. The conversion may be performed with any name-to-address function. The converted address shall be stored in the "GGSN Address in Use" field in the PDP context and be used during the entire lifetime of the PDP context.

NOTE: A DNS query may be used as the name-to-IP address mapping of the GGSN. The IP address returned in the DNS response is then stored in the "GGSN Address in Use" field in the PDP context.

The IMSI information element together with the NSAPI information element uniquely identifies the PDP context to be created.

The SGSN may send a Create PDP Context Request even if the PDP context is already active.

The GGSN shall check if the PDP context already exists for the MS. The existing parameters in the PDP context shall then be replaced with the parameters in the Create PDP Context Request message. If a dynamic PDP address has already been allocated for the existing context, this address should be used and copied to the Create PDP Context Response message.

If the GGSN uses the MNRG flag and the flag is set, the GGSN should treat the Create PDP Context Request as a Note MS Present Request and clear the MNRG flag.

The optional Private Extension contains vendor or operator specific information.

Table 4: Information elements in a Create PDP Context Request

Information element	Presence requirement	Reference
IMSI	Conditional	7.7.2
Recovery	Optional	7.7.11
Selection mode	ConditionalMandatory	7.7.12
Tunnel Endpoint Identifier Data I	Mandatory	7.7.13
Tunnel Endpoint Identifier Signalling	Mandatory	7.7.14
End User Address	Conditional	7.7.17
Access Point Name	Conditional	7.7.20
Protocol Configuration Options	Conditional	7.7.21
SGSN Address for signalling	Mandatory	GSN Address 7.7.22
SGSN Address for user traffic	Mandatory	GSN Address 7.7.22
MSISDN	Conditional	7.7.23
Quality of Service Profile	Mandatory	7.7.25
Private Extension	Optional	7.7.26
TFT	Conditional	7.7.28
NSAPI	Mandatory	7.7.30
Primary NSAPI	Conditional	7.7.30

7.3.2 Create PDP Context Response

The message shall be sent from a GGSN node to a SGSN node as a response of a Create PDP Context Request. When the SGSN receives a Create PDP Context Response with the Cause value indicating 'Request Accepted', the SGSN activates the PDP context and may start to forward T-PDUs to/from the MS from/to the external data network.

The Cause value indicates if a PDP context has been created in the GGSN or not. A PDP context has not been created in the GGSN if the Cause differs from 'Request accepted'. Possible Cause values are:

- 'Request Accepted'
- 'No resources available'
- 'All dynamic PDP addresses are occupied'
- 'No memory is available'
- 'Service not supported'
- 'User authentication failed'
- 'System failure'
- 'Mandatory IE incorrect'
- 'Mandatory IE missing'
- 'Optional IE incorrect'
- 'Invalid message format'
- 'Version not supported'

'No resources available' indicates e.g. that all dynamic PDP addresses are occupied or no memory is available.
'Service not supported' indicates e.g. when the GGSN does not support the PDP type, PDP address or Access Point Name.

'User authentication failed' indicates that the external packet network has rejected the service requested by the user.

Only the Cause information element, optionally Protocol Configuration Options and optionally the Recovery information element shall be included in the response if the Cause contains another value than 'Request accepted'.

All information elements, except Recovery, Protocol Configuration Options, and Private Extension, are mandatory if the Cause contains the value 'Request accepted'.

The Tunnel Endpoint Identifier Data I field specifies an uplink Tunnel Endpoint Identifier for G-PDUs which is chosen by the GGSN. The SGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent uplink G-PDUs which are related to the requested PDP context.

The Tunnel Endpoint Identifier Signalling field specifies an uplink Tunnel Endpoint Identifier for signalling messages which is chosen by the GGSN. The SGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent uplink signalling messages which are related to the requested PDP context.

The GGSN shall include a GGSN Address for signalling and a GGSN address for user traffic, which may differ from that provided by the underlying network service (e.g. IP). The SGSN shall store these GGSN Addresses and use them when sending signalling on this GTP tunnel or G-PDUs to the GGSN for the MS.

If the MS requests a dynamic PDP address and a dynamic PDP address is allowed, then the End User Address information element shall be included and the PDP Address field in the End User Address information element shall contain the dynamic PDP Address allocated by the GGSN. If the MS requests a static PDP address, then the End User Address information element shall not be included. In case the PDP addresses carried in the End User Address and optionally in the Protocol Configuration Option information element contain contradicting information, the PDP address carried in the End User Address information element takes the higher precedence.

The QoS values supplied in the Create PDP Context Request may be negotiated downwards by the GGSN. The negotiated values or the original values from SGSN are inserted in the Quality of Service Profile information element of the Create PDP Context Response message.

If a connection-less path is to be used to tunnel T-PDUs for the given PDP context or a reliable connection-oriented path is to be used and a connection already exists, the GGSN may start to forward T-PDUs after the Create PDP Context Response has been sent and the SGSN may start to forward T-PDUs when the Create PDP Context Response has been received. In this case the SGSN shall also be prepared to receive T-PDUs from the GGSN after it has sent a Create PDP Context Request but before a Create PDP Context Response has been received.

If a reliable connection-oriented path is to be used to tunnel T-PDUs for the given PDP context and a connection does not exist between the GSN pair, the SGSN shall establish a connection and the GGSN shall wait for the connection before forwarding of T-PDUs may start.

Only one connection shall be used between any given GSN-pair, and this connection shall be used to tunnel end user traffic in both directions.

The Reordering Required value supplied in the Create PDP Context Response indicates whether the end user protocol benefits from packet in sequence delivery and whether the SGSN and the GGSN therefore shall perform reordering or not, i.e. if reordering is required by the GGSN the SGSN and the GGSN shall perform reordering of incoming T-PDUs on this path.

The GGSN shall include the Recovery information element into the Create PDP Context Response if the GGSN is in contact with the SGSN for the first time or the GGSN has restarted recently and the new Restart Counter value has not yet been indicated to the SGSN. The SGSN receiving the Recovery information element shall handle it as when an Echo Response message is received but shall consider the PDP context being created as active if the response indicates a successful context activation at the GGSN.

The Charging ID is used to identify all charging records produced in SGSN(s) and the GGSN for this PDP context. The Charging ID is generated by the GGSN and shall be unique within the GGSN.

The Charging Gateway Address is the IP address of the recommended Charging Gateway Functionality to which the SGSN should transfer the Charging Detail Records (CDR) for this PDP Context.

The optional Private Extension contains vendor or operator specific information.

Table 5: Information elements in a Create PDP Context Response

Information element	Presence requirement	Reference
Cause	Mandatory	7.7.1
Reordering required	Conditional	7.7.6
Recovery	Optional	7.7.11
Tunnel Endpoint Identifier Data I	Conditional	7.7.13
Tunnel Endpoint Identifier Signalling	Conditional	7.7.14
Charging ID	Conditional	7.7.16
End user address	Conditional	7.7.17
Protocol Configuration Options	Optional	7.7.21
GGSN Address for signalling	Conditional	GSN Address 7.7.22
GGSN Address for user traffic	Conditional	GSN Address 7.7.22
Charging Gateway Address	Optional	7.7.24
Quality of Service Profile	Conditional	7.7.25
Private Extension	Optional	7.7.26

*** *Next Change* ***

7.3.14 PDU Notification Reject Request

If the PDP context activation proceeds after the PDU Notification Response, but the PDP context was not established, the SGSN sends a PDU Notification Reject Request message. The Cause value indicates the reason why the PDP Context could not be established:

- 'MS Not GPRS Responding'
- 'MS Refuses'.

When receiving the PDU Notification Reject Request message the GGSN may reject or discard the stored T-PDU(s) depending on the PDP type.

After an unsuccessful activation attempt the GSNs may perform some actions to prevent unnecessary enquires to the HLR as described in the section Unsuccessful Network-Requested PDP Context Activation procedure in GSM 03.60.

The Tunnel Endpoint Identifier in the GTP header of the PDU Notification Reject Request message shall be the same as the Tunnel Endpoint Identifier Signalling information element of the PDU Notification Request that triggered the reject.

The End User Address information element contains the PDP type and PDP address of the PDP context that could not be activated.

The optional Private Extension contains vendor or operator specific information.

Table 19: Information elements in a PDU Notification Reject Request

Information element	Presence requirement	Reference
Cause	Mandatory	7.7.1
Tunnel Endpoint Identifier Signalling	Mandatory	7.7.14
End User Address	Mandatory	7.7.17
Private Extension	Optional	7.7.26

*** *Next Change* ***

7.5.10 Relocation Cancel Response

The Relocation Cancel Response message is sent from the new SGSN to the old SGSN when the relocation procedure has been cancelled in the ~~old~~new SGSN. This message is used as the response to the Relocation Cancel Request message.

Possible Cause values is:

- 'Request Accepted'

The optional Private Extension contains vendor or operator specific information.

Table 36: Information elements in a Relocation Cancel Response

Information element	Presence requirement	Reference
Cause	Mandatory	7.7.1
Private Extension	Optional	7.7.26

*** *Next Change* ***

8.2 Usage of the GTP Header

For signalling messages the GTP header shall be used as follows:

- Version shall be set to decimal 1 ('001').
- Payload Type (PT) shall be set to '0'.
- (S) shall be set to '0'.
- SNN shall be set to '0'.- Message Type shall be set to the unique value that is used for each type of signalling message. Valid message types are marked with a x in the GTP-C column in Table 1.
- Length shall be the length, in octets, of the signalling message excluding the GTP header.
- The Tunnel Endpoint Identifier is set to the requested value and points out the mobility management context (e.g. the MS), except for the following cases:
 - The first Create PDP Context Request message sent to a specific GGSN shall have the Tunnel Endpoint Identifier set to all zeros, since this will be the message that establishes the tunnel in the signalling plane.
 - The Identification Request/Response messages, where the Tunnel Endpoint Identifier shall be set to all zeros.
 - The SGSN Context Request message, where the Tunnel Endpoint Identifier shall be set to all zeros.
 - The Echo Request/Response, Supported Extension Headers notification and the Version Not Supported message, where the Tunnel Endpoint Identifier shall be set to all zeros.
- Sequence Number shall be a message number valid for a path or a tunnel. Within a given set of contiguous Sequence Numbers from 0 to 65535, a given Sequence Number shall, if used, unambiguously define a GTP signalling request message sent on the path or tunnel (see section Reliable delivery of signalling messages). The Sequence Number in a signalling response message shall be copied from the signalling request message that the GSN is replying to.
- SNDSCP N-PDU Number shall not be present.

The GTP header may be followed by subsequent information elements dependent on the type of signalling message. Only one information element of each type is allowed in a single signalling message, except for the Authentication Triplet, the PDP Context and the Tunnel Endpoint Identifier Data II information element where several occurrences of each type are allowed.

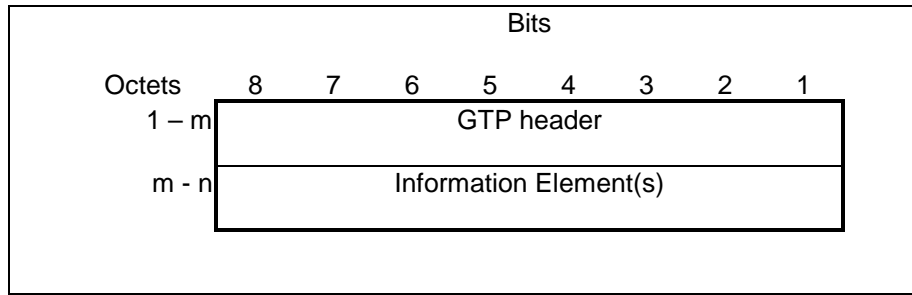


Figure 50: GTP header followed by subsequent Information Elements

CHANGE REQUEST

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

29.060 CR 102

Current Version: **3.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**
 list expected approval meeting # here ↑

for approval
 for information

strategic
 non-strategic (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: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: N4 **Date:** 12/05/00

Subject: Alignment of text with tables

Work item: GPRS

Category: F Correction **Release:** Phase 2
 A Corresponds to a correction in an earlier release Release 96
 B Addition of feature Release 97
 C Functional modification of feature Release 98
 D Editorial modification Release 99
 Release 00
 (only one category shall be marked with an X)

Reason for change: Chapter 7.5.2 Indification response authentication triplets or authentication quintuplets may be included if the cuase value is request accepted. In the table triplets are conditional and quintuplets are optional they should be both conditional.
 Chapter 7.5.3 SGSN Context Request In the text it is mentioned One of the The TLLI or P-TIMSI information fields must be present. In the table TLLI is mandatory and P-TIMSI is conditional

Clauses affected: 7.5.2, 7.5.3

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:



help.doc

<-----

7.5.2 Identification Response

The old SGSN shall send an Identification Response to the new SGSN as a response to a previous Identification Request.

Possible Cause values are:

- 'Request Accepted'.
- 'IMSI not known'.
- 'System failure'.
- 'Mandatory IE incorrect'.
- 'Mandatory IE missing'.
- 'Optional IE incorrect'.
- 'Invalid message format'.
- 'Version not supported'.
- 'P-TMSI Signature mismatch'.

Only the Cause information element shall be included in the response if the Cause contains another value than 'Request accepted'.

The IMSI information element is mandatory if the Cause contains the value 'Request accepted'.

One or several Authentication Triplet information elements or up to 5 Authentication Quintuplet information elements may be included in the message if the Cause contains the value 'Request accepted'.

The optional Private Extension contains vendor or operator specific information.

Table 25: Information Elements in an Identification Response

Information element	Presence requirement	Reference
Cause	Mandatory	7.7.1
IMSI	Conditional	7.7.2
Authentication Triplet	Conditional	7.7.7
Authentication Quintuplet	Conditional	7.7.35
Private Extension	Optional	7.7.44

7.5.3 SGSN Context Request

The new SGSN shall send an SGSN Context Request to the old SGSN to get the MM and PDP Contexts for the MS. The MS is identified by its old RAI and old TLLI/old P-TMSI values. The TLLI/P-TMSI and RAI is a TLLI/P-TMSI and an RAI in the old SGSN. One of the TLLI or P-TMSI information fields must be present.

The old SGSN responds with an SGSN Context Response.

The Tunnel Endpoint Identifier Signalling field specifies a Tunnel Endpoint Identifier for signalling messages, which is chosen by the new SGSN. The old SGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent signalling messages that are sent from the old SGSN to the new SGSN and related to the PDP context(s) requested.

The MS Validated indicates that the new SGSN has successfully authenticated the MS. IMSI shall be included if MS Validated indicates 'Yes'.

The P-TMSI Signature is conditionally provided by the MS to the new SGSN for identification checking purposes as defined in GSM 3G TS 23.060 and 3G TS 24.008. If the MS has provided the P-TMSI Signature, the new SGSN shall include this parameter in the SGSN Context Request message.

The optional Private Extension contains vendor or operator specific information.

Table 26: Information Elements in a SGSN Context Request

Information element	Presence requirement	Reference
IMSI	Conditional	7.7.2
Routing Area Identity (RAI)	Mandatory	7.7.3
Temporary Logical Link Identifier (TLLI)	Conditional	7.7.4
Packet TMSI (P-TMSI)	Conditional	7.7.5
P-TMSI Signature	Optional	7.7.9
MS Validated	Optional	7.7.10
Tunnel Endpoint Identifier Signalling	Mandatory	7.7.14
Private Extension	Optional	7.7.44

Rotenburg, Germany, 22-26 May 2000

3G CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
29.060	CR 119	Current Version: 3.4.0
3G specification number ↑	↑ CR number as allocated by 3G support team	
For submission to TSG CN#08 <small>list TSG meeting no. here ↑</small>	For approval <input checked="" type="checkbox"/> <small>(only one box should be marked with an X)</small>	For information <input type="checkbox"/>

Form: 3G CR cover sheet, version 1.0 The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

Proposed change affects: USIM ME UTRAN Core Network
(at least one should be marked with an X)

Source: N4 **Date:** 22/05/2000

Subject: Clarification on the use of SGSN address at PDU notification procedure (R99)

3G Work item: GPRS

Category: F Correction
(only one category shall be marked With an X)
 A Corresponds to a correction in a 2G specification
 B Addition of feature
 C Functional modification of feature
 D Editorial modification

Reason for change: During the network initiated PDP context activation procedure, if another PDP context for the MS has been already activated in the same GGSN, the GGSN may be aware of two SGSN address informations for the MS. One is stored in the existing PDP context and another is sent from the HLR in *Send Routing Info for GPRS* message. They are not always same information during Inter SGSN RA update or Inter SGSN SRNS relocation. The behaviour of the GGSN is not clear when it obtain two different SGSN address informations.

Current GPRS stage2 shows that the Update PDP context procedures are completed prior to Update Location procedure to the HLR during Inter SGSN RA update or Inter SGSN SRNS relocation. This means the SGSN information in the existing PDP context is reliable than that in the HLR. To use newer SGSN address information is better because if the GGSN uses old SGSN address, PDU notification procedure may fail.

Therefore this CR proposes that the GGSN use the SGSN address information stored in existing PDP context prior to that from the HLR.

Clauses affected: 7.3.8

Other specs Affected:

Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
Other 2G core specifications	<input type="checkbox"/>	→ List of CRs:	
MS test specifications	<input type="checkbox"/>	→ List of CRs:	
BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
O&M specifications	<input type="checkbox"/>	→ List of CRs:	

Other comments:



<----- double-click here for help and instructions on how to create a CR.

7.3.8 PDU Notification Request

When receiving a T-PDU the GGSN checks if a PDP context is established for that PDP address. If no PDP context has been previously established, the GGSN may try to deliver the T-PDU by initiating the Network-Requested PDP Context Activation procedure. The criteria, used by the GGSN to determine whether trying to deliver the T-PDU to the MS or not, may be based on subscription information in the GGSN and are outside the scope of GPRS standardisation.

As part of the Network-Requested PDP Context Activation procedure the GGSN sends a PDU Notification Request message to the SGSN indicated by the HLR. If the GGSN has an active PDP context with different SGSN from the one indicated by the HLR, then the SGSN information shall be obtained from an active PDP context, i.e. the current location of the MS. When receiving this message, the SGSN shall be responsible for requesting the MS to activate the indicated PDP Context.

The IMSI is inserted in the IMSI information element in the PDU Notification Request message.

The End User Address information element contains the PDP type and PDP address that the SGSN shall request the MS to activate.

The Access Point Name information element identifies the access point of packet data network that wishes to connect to the MS.

The Tunnel Endpoint Identifier Signalling information element shall be a tunnel endpoint identifier signalling selected by the GGSN and shall be used by the SGSN in the GTP header of the corresponding PDU Notification Response or PDU Notification Request Reject message. This field shall not be present if a signalling tunnel for the given MS between the peer GSNs already exists.

If the GGSN receives a Create PDP Context Request before the PDU Notification Response, the GGSN shall handle the Create PDP Context Request as normal context activation and ignore the following PDU Notification Response.

If the SGSN receives a PDU Notification Request after a Create PDP Context Request has been sent but before a Create PDP Context Response has been received, the SGSN shall:

1. send a PDU Notification Response with Cause 'Request accepted' without any further processing and then
2. wait for the Create PDP Context Response.

The optional Private Extension contains vendor or operator specific information.

Table 13: Information Elements in a PDU Notification Request

Information element	Presence requirement	Reference
IMSI	Mandatory	7.7.2
Tunnel Endpoint Identifier Signalling	Conditional	7.7.14
End User Address	Mandatory	7.7.27
Access Point Name	Mandatory	7.7.30
Private Extension	Optional	7.7.44