TSG RAN Meeting #20 **RP-030322**
Hämeenlinna, Finland, 3 - 6 June, 2003

Title **CRs (Rel-5 only) to TS 25.453**
Source **TSG RAN WG3**
Agenda Item **7.3.5**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-030720	25.453	5.5.0	5.6.0	REL-5	039	-	F	CR on Criticality Aspects	TEI5
R3-030797	25.453	6.0.0	6.1.0	REL-6	044	-	A	CR on Criticality Aspects	TEI5
R3-030721	25.453	5.5.0	5.6.0	REL-5	040	-	F	CR on Information Exchange Initiation Request for GPS Navigation Model	TEI5
R3-030844	25.453	6.0.0	6.1.0	REL-6	045	-	A	CR on Information Exchange Initiation Request for GPS Navigation Model	TEI5
R3-030722	25.453	5.5.0	5.6.0	REL-5	041	-	F	CR on DGPS Parameters	TEI5
R3-030845	25.453	6.0.0	6.1.0	REL-6	046	-	A	CR on DGPS Parameters	TEI5
R3-030724	25.453	5.5.0	5.6.0	REL-5	043	-	F	CR on Information Report of GPS Almanac and Satellite Health	TEI5
R3-030848	25.453	6.0.0	6.1.0	REL-6	048	-	A	CR on Information Report of GPS Almanac and Satellite Health	TEI5
R3-030799	25.453	5.5.0	5.6.0	REL-5	036	1	F	“On Modification” and “Periodic” reporting alignment for Information Exchange procedures	TEI5
R3-030800	25.453	6.0.0	6.1.0	REL-6	037	1	A	“On Modification” and “Periodic” reporting alignment for Information Exchange procedures	TEI5
R3-030846	25.453	5.5.0	5.6.0	REL-5	042	1	F	CR on Removal of Information Exchange Object Type	TEI5
R3-030847	25.453	6.0.0	6.1.0	REL-6	047	-	A	CR on Removal of Information Exchange Object Type	TEI5

3GPP TSG- RAN WG3 Meeting #36 **⌘R3-030799**
Marne la Vallée, Paris, France, 19th –23rd May 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **036** ⌘ **rev** **1** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	"On Modification" and "Periodic" reporting alignment for Information Exchange procedures
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/03
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	If the requested information becomes temporarily unavailable, this can be reported in the case of "Periodic" reporting. In the case of "On Modification" reporting, the procedure must be ceased.
Summary of change:	⌘	Allow the reporting of changes of the requested information from and to "Not Available" also in case of "On Modification" reporting.
Consequences if not approved:	⌘	The event triggered switchback to recovered information is not possible. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because it aligns the behaviour of the the Information Exchange procedures in case of "Periodic" and "On Modification" reporting. This CR has an impact on the functional point of view. The impact can be considered isolated because the change affects one function namely the behaviour of the periodic Information Exchange procedures on the I_{ub} and I_{ur} and I_{upc} interfaces.

Clauses affected:	⌘	8.3.2, 9.1.7, 9.2.2.27, 9.3.3			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ CR037r1 25.453 Rel-6
affected:			**X**	Test specifications	

	X	O&M Specifications

Other comments: ⌘ This CR is based on CR031r1 25.453 Rel-5

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3 Information Exchange Initiation

8.3.1 General

This procedure is used by a RNC to request the initiation of an information exchange with a SAS.

This procedure uses the signalling bearer connection for the Information Exchange Context.

8.3.2 Successful Operation

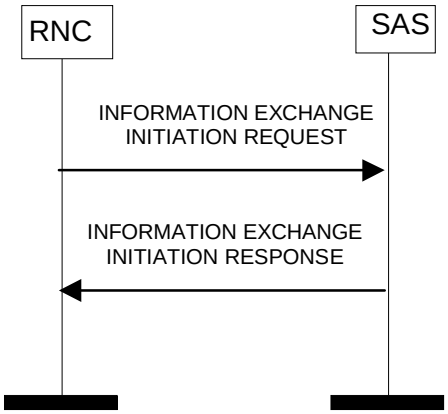

Figure 3: Information Exchange Initiation procedure, Successful Operation

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from RNC to SAS.

If the *Information Type* IE is set to 'Implicit', the SAS is responsible for selecting the type of assistance data.

Upon reception, the SAS shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

Information Report Characteristics:

The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed.

If the *Information Report Characteristics* IE is set to 'On-Demand', the SAS shall report the requested information immediately.

If the *Information Report Characteristics* IE is set to "Periodic", the SAS shall report the requested information immediately and then shall periodically initiate the Information Reporting procedure for all the requested information, with the requested report frequency.

If the *Information Report Characteristics* IE is set to "On-Modification", the SAS shall report the requested information immediately if available. If the requested information is not available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST message, but expected to become available after some acquisition time, the SAS ~~and then~~ shall initiate the Information Reporting procedure when the requested information becomes available. The SAS shall then initiate the Information Reporting procedure in accordance to the following conditions:

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Almanac and Satellite Health", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in almanac/health information for at least one visible satellite.
- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "UTC Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the GPS UTC model.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to 'Explicit' and the *Explicit Information Item* IE includes "Ionospheric Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the GPS ionospheric model.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Navigation Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the clock/ephemeris information for at least one visible satellite or in the list of visible satellites.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "DGPS Corrections", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the quality of the DGPS corrections information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Reference Time", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the time-of-week assistance information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Acquisition Assistance", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in acquisition assistance information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Real Time Integrity", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the real-time integrity status of at least one visible satellite.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Almanac and Satellite Health SIB", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in almanac/health information for at least one visible satellite.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If any of the above *Information Type* IEs becomes temporarily unavailable, the SAS shall initiate the Information Reporting procedure for this specific Information Item by indicating "Information Not Available" in the *Requested Data Value Information* IE. If the Information becomes available again, the SAS shall initiate the Information Reporting procedure for this specific Information.

Response message:

If the SAS ~~wa~~is able to determine the information requested by the RNC, it shall respond with the INFORMATION EXCHANGE INITIATION RESPONSE message. The message shall include the same Information Exchange ID that was included in the INFORMATION EXCHANGE INITIATION REQUEST message. When the *Report Characteristics* IE is set to "On Modification" or "Periodic", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE if the data are available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST. When the *Report Characteristics* IE is set to "On Demand", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE.

When the response message includes data to be reported (see above), the SAS shall include at least one IE in the *Requested Data Value* IE.

8.3.3 Unsuccessful Operation

/* partly omitted */

9.1.7 Information Exchange Initiation Response

Table 12

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	O~~M~~				YES	ignore
>Reference Position					-	
>>Requested Data Value	M		9.2.2.26		-	ignore
Criticality Diagnostics	O		9.2.2.4		YES	ignore

/* partly omitted */

9.2.2.27 Requested Data Value Information

The Requested Data Value Information IE provides information both on whether or not the Requested Data Value is provided in the message or not and if provided also the Requested Data Value itself. In case of "Periodic" and "On Modification" reporting, "Information Not Available" shall be used when at least one part of the requested information was not available at the moment of initiating the Information Reporting procedure.

Table 65

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE *Information Availability Indicator*	M				–	
>Information Available					–	
>>Requested Data Value	M		9.2.2.26		–	
>Information not Available			NULL		–	

/* partly omitted */

```
-- **************************************************************
--
-- INFORMATION EXCHANGE INITIATION RESPONSE
--
-- **************************************************************

InformationExchangeInitiationResponse ::= SEQUENCE {
    protocolIEs             ProtocolIE-Container    {{InformationExchangeInitiationResponse-
IEs}},
    protocolExtensions      ProtocolExtensionContainer
    {{InformationExchangeInitiationResponse-Extensions}}        OPTIONAL,
```

```
    ...
}

InformationExchangeInitiationResponse-IEs PCAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                    CRITICALITY ignore  TYPE
InformationExchangeID                   PRESENCE    mandatory }|
    { ID    id-InformationExchangeObjectType-InfEx-Rsp  CRITICALITY ignore  TYPE
InformationExchangeObjectType-InfEx-Rsp     PRESENCE    mandatoryoptional }|
    { ID    id-CriticalityDiagnostics                   CRITICALITY ignore  TYPE
CriticalityDiagnostics                  PRESENCE    optional    },
    ...
}

InformationExchangeInitiationResponse-Extensions PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeObjectType-InfEx-Rsp ::= CHOICE {
    referencePosition               RefPosition-InfEx-Rsp,
    ...
}

RefPosition-InfEx-Rsp ::= SEQUENCE {
    requestedDataValue              RequestedDataValue,
    iE-Extensions                   ProtocolExtensionContainer  { { RefPositionItem-InfEx-Rsp-
ExtIEs} }       OPTIONAL,
    ...
}

RefPositionItem-InfEx-Rsp-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

/* partly omitted */

3GPP TSG- RAN WG3 Meeting #36 **⌘*R3-030800***
Marne la Vallée, Paris, France, 19th –23rd May 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **037** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	"On Modification" and "Periodic" reporting alignment for Information Exchange procedures
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/03
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
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Reason for change:	⌘	If the requested information becomes temporarily unavailable, this can be reported in the case of "Periodic" reporting. In the case of "On Modification" reporting, the procedure must be ceased.
ummary of change:	⌘	Allow the reporting of changes of the requested information from and to "Not Available" also in case of "On Modification" reporting.
onsequences if ot approved:	⌘	The event triggered switchback to recovered information is not possible. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because it aligns the behaviour of the the Information Exchange procedures in case of "Periodic" and "On Modification" reporting. This CR has an impact on the functional point of view. The impact can be considered isolated because the change affects one function namely the behaviour of the periodic Information Exchange procedures on the I_{ub} and I_{ur} and I_{upc} interfaces.

Clauses affected:	⌘	8.3.2, 9.1.7, 9.2.2.27, 9.3.3			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ CR036r1 25.453 Rel-5
affected:			**X**	Test specifications	

	X	O&M Specifications

Other comments: ⌘ This CR is based on CR032r1 25.453 Rel-6

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8.3 Information Exchange Initiation

8.3.1 General

This procedure is used by a RNC to request the initiation of an information exchange with a SAS.

This procedure uses the signalling bearer connection for the Information Exchange Context.

8.3.2 Successful Operation

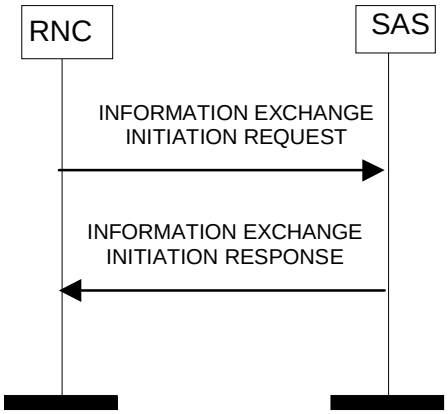

Figure 3: Information Exchange Initiation procedure, Successful Operation

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from RNC to SAS.

If the *Information Type* IE is set to 'Implicit', the SAS is responsible for selecting the type of assistance data.

Upon reception, the SAS shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

Information Report Characteristics:

The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed.

If the *Information Report Characteristics* IE is set to 'On-Demand', the SAS shall report the requested information immediately.

If the *Information Report Characteristics* IE is set to "Periodic", the SAS shall report the requested information immediately and then shall periodically initiate the Information Reporting procedure for all the requested information, with the requested report frequency.

If the *Information Report Characteristics* IE is set to "On-Modification", the SAS shall report the requested information immediately if available. If the requested information is not available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST message, but expected to become available after some acquisition time, the SAS ~~and then~~ shall initiate the Information Reporting procedure when the requested information becomes available. The SAS shall then initiate the Information Reporting procedure in accordance to the following conditions:

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Almanac and Satellite Health", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in almanac/health information for at least one visible satellite.
- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "UTC Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the GPS UTC model.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to 'Explicit' and the *Explicit Information Item* IE includes "Ionospheric Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the GPS ionospheric model.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Navigation Model", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the clock/ephemeris information for at least one visible satellite or in the list of visible satellites.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "DGPS Corrections", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the quality of the DGPS corrections information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Reference Time", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the time-of-week assistance information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Acquisition Assistance", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in acquisition assistance information for at least one visible satellite or in the list of visible satellites.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Real Time Integrity", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in the real-time integrity status of at least one visible satellite.

- If the *Information Type* IE is set to "Explicit" and the *Explicit Information Item* IE includes "Almanac and Satellite Health SIB", the SAS shall initiate the Information Reporting procedure for this specific Explicit Information Type when a change has occurred in almanac/health information for at least one visible satellite.

  - If the *Transmission TOW Indicator* IE is set to "requested", then the SAS shall include the *GPS Transmission TOW* IE in the INFORMATION REPORT message.

- If any of the above *Information Type* IEs becomes temporarily unavailable, the SAS shall initiate the Information Reporting procedure for this specific Information Item by indicating "Information Not Available" in the *Requested Data Value Information* IE. If the Information becomes available again, the SAS shall initiate the Information Reporting procedure for this specific Information.

Response message:

If the SAS ~~wa~~is able to determine the information requested by the RNC, it shall respond with the INFORMATION EXCHANGE INITIATION RESPONSE message. The message shall include the same Information Exchange ID that was included in the INFORMATION EXCHANGE INITIATION REQUEST message. When the *Report Characteristics* IE is set to "On Modification" or "Periodic", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE if the data are available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST. When the *Report Characteristics* IE is set to "On Demand", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE.

When the response message includes data to be reported (see above), the SAS shall include at least one IE in the *Requested Data Value* IE.

8.3.3 Unsuccessful Operation

/* partly omitted */

9.1.7 Information Exchange Initiation Response

Table 12

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	O~~M~~				YES	ignore
>Reference Position					-	
>>Requested Data Value	M		9.2.2.26		-	ignore
Criticality Diagnostics	O		9.2.2.4		YES	ignore

/* partly omitted */

9.2.2.27 Requested Data Value Information

The Requested Data Value Information IE provides information both on whether or not the Requested Data Value is provided in the message or not and if provided also the Requested Data Value itself. In case of "Periodic" and "On Modification" reporting, "Information Not Available" shall be used when at least one part of the requested information was not available at the moment of initiating the Information Reporting procedure.

Table 65

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE *Information Availability Indicator*	M				–	
>***Information Available***					–	
>>Requested Data Value	M		9.2.2.26		–	
>Information not Available			NULL		–	

/* partly omitted */

```
-- **************************************************************
--
-- INFORMATION EXCHANGE INITIATION RESPONSE
--
-- **************************************************************

InformationExchangeInitiationResponse ::= SEQUENCE {
```

```
    protocolIEs             ProtocolIE-Container    {{InformationExchangeInitiationResponse-
IEs}},
    protocolExtensions      ProtocolExtensionContainer
    {{InformationExchangeInitiationResponse-Extensions}}        OPTIONAL,
    ...
}

InformationExchangeInitiationResponse-IEs PCAP-PROTOCOL-IES ::= {
    { ID    id-InformationExchangeID                    CRITICALITY ignore  TYPE
InformationExchangeID                   PRESENCE    mandatory }|
    { ID    id-InformationExchangeObjectType-InfEx-Rsp  CRITICALITY ignore  TYPE
InformationExchangeObjectType-InfEx-Rsp     PRESENCE    mandatoryoptional }|
    { ID    id-CriticalityDiagnostics                   CRITICALITY ignore  TYPE
CriticalityDiagnostics                  PRESENCE    optional    },
    ...
}

InformationExchangeInitiationResponse-Extensions PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

InformationExchangeObjectType-InfEx-Rsp ::= CHOICE {
    referencePosition               RefPosition-InfEx-Rsp,
    ...
}

RefPosition-InfEx-Rsp ::= SEQUENCE {
    requestedDataValue              RequestedDataValue,
    iE-Extensions                   ProtocolExtensionContainer  { { RefPositionItem-InfEx-Rsp-
ExtIEs} }       OPTIONAL,
    ...
}

RefPositionItem-InfEx-Rsp-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

/* partly omitted */

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030720

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **039** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Criticality Aspects
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Currently, the tabular and ASN.1 descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 are inconsistent with respect to criticality aspects.
Summary of change:	⌘	The tabular descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 are modified such that their indicated criticality aspects are aligned with their corresponding ASN.1 descriptions. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change only affects the following functions: - Position Calculation Requesting - Information Exchange Requesting and Reporting
Consequences if not approved:	⌘	Tabular descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 will remain inconsistent with their corresponding ASN.1 descriptions.

Clauses affected:	⌘	9.1.3, 9.1.6, 9.1.7, 9.1.9

Y | N

Other specs affected:	⌘	X		Other core specifications	⌘ 25.453 v6.0.0 CR044
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.1.3 Position Calculation Request

Table 6

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Initial UE Position Estimate	M		9.2.2.6		YES	reject
Measured Results		*0..<maxNoOfSets>*			GLOBAL	reject
>GPS Measured Results	M		9.2.2.12		~~YES~~	~~reject~~

Table 7

Range bound	Explanation
MaxNoOfSets	Maximum number of sets of GPS Measured Results included in the Position Calculation Request message. The value for maxNoOfSets is 3.

… <NEXT MODIFIED SECTION> …

9.1.6 Information Exchange Initiation Request

Table 10

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		–	
Information Exchange ID	M		9.2.2.19		YES	reject
Information Exchange Object Type	M		9.2.2.20		YES	reject
CHOICE *Information Exchange Object Type*	M				YES	reject
>Reference Position					-	
>>Reference Position Estimate/UE Initial Position	M		9.2.2.6		-	~~reject~~
Information Type	M		9.2.2.22		YES	reject
Information Report Characteristics	M		9.2.2.21		YES	reject
GPS-UTRAN Time Relationship Uncertainty	C-GPS		9.2.2.18		YES	reject

Table 11

Condition	Explanation
GPS	The IE shall be present if the information requested in the *Information Type* IE contains GPS-related data

9.1.7 Information Exchange Initiation Response

Table 12

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	M				YES	ignore
>Reference Position					-	
>>Requested Data Value	M		9.2.2.26		-	~~ignore~~
Criticality Diagnostics	O		9.2.2.4		YES	ignore

9.1.8 Information Exchange Initiation Failure

Table 13

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
Cause	M		9.2.2.3		YES	ignore
Criticality Diagnostics	O		9.2.2.4		YES	ignore

9.1.9 Information Report

Table 14

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	ignore
Transaction ID	M		9.2.2.28		–	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	M				YES	ignore
>Reference Position					-	
>>Requested Data Value Information	M		9.2.2.27		-	~~ignore~~

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030721

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **040** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Information Exchange Initiation Request for GPS Navigation Model
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Currently, according to TS 25.331 (R99), the UE may include information for up to 'maxSat'=16 satellites when a request for GPS Navigation Model update is sent to the RNC (see satellite related data list in clause 10.3.7.88a of RRC). However, for the corresponding PCAP request (RNC-to-SAS) for such GPS Navigation Model info, the Information Type IE only allows inclusion of satellite related data for 'maxSatLess1'=15 satellites.
Summary of change:	⌘	The tabular description of clause 9.2.2.22 is modified such that the range of 'satellite related data' is now 0..<maxSat>=16. A corresponding change is made to the related ASN.1 description in clause 9.3.4. In addition, references of the constant 'maxSatLess1' are removed from clauses 9.3.4 and 9.3.6. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change only affects the following function: - Information Exchange Initiation Request
Consequences if not approved:	⌘	The SAS will not be able to receive (and thus consider) RNC requests for GPS Navigation Model update in which satellite related data is provided for 16

	satellites. In addition, the RNC behaviour for receiving a UE request for GPS Navigation Model update will be ambiguous for the case when the UE provides satellite related data for 16 satellites.

Clauses affected:	⌘	9.2.2.22, 9.3.4, 9.3.6			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	25.453 v6.0.0 CR045
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.22 Information Type

The Information Type indicates which kind of information the SAS shall provide.

Table 58

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE *Information Type*	M			
>Implicit				
>>Method Type	M		9.2.2.25	
>Explicit				
>>**Explicit Information**		*1..<maxnoofExpInfo>*		
>>>CHOICE *Explicit Information Item*	M			
>>>>Almanac and Satellite Health			NULL	
>>>>UTC Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>Ionospheric Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>Navigation Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>>**Nav. Model Additional Data**		*0..1*		
>>>>>>GPS Week	M		Integer (0..1023)	
>>>>>>GPS_Toe	M		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set
>>>>>>T-Toe limit	M		Integer (0..10)	ephemeris age tolerance in hours
>>>>>>**Satellite related data**		*0..<maxSat ~~-1~~>*		
>>>>>>>SatID	M		Integer (0..63)	
>>>>>>>IODE	M		Integer (0..239)	Issue of Data Ephemeris for SatID
>>>>DGPS Corrections			NULL	
>>>>Reference Time			NULL	
>>>>Acquisition Assistance			NULL	
>>>>Real Time Integrity			NULL	
>>>>Almanac and Satellite Health SIB				
>>>>>Transmission TOW Indicator	M		9.2.2.29	

Table 59

Range Bound	Explanation
maxnoofExpInfo	Maximum number of Explicit Information supported in one Information Exchange.
MaxSat	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

PCAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxSat,
    maxSatLess1,
    maxNrOfLevels,
    maxNrOfPoints,
    maxNrOfExpInfo,
    id-TypeOfError,
    id-MessageStructure
FROM PCAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TransactionID,
    TriggeringMessage
FROM PCAP-CommonDataTypes

    ProtocolExtensionContainer{},
    PCAP-PROTOCOL-EXTENSION
FROM PCAP-Containers;


[…]
```

… <NEXT MODIFIED SECTION> …

```
-- ********************************************************
--
-- Information Type
--
-- ********************************************************


InformationType ::= CHOICE {
    implicitInformation         MethodType,
    explicitInformation         ExplicitInformationList,
    ...
}


ExplicitInformationList ::= SEQUENCE (SIZE (1..maxNrOfExpInfo)) OF ExplicitInformation

ExplicitInformation ::= CHOICE {
    almanacAndSatelliteHealth       AlmanacAndSatelliteHealth,
    utcModel                        UtcModel,
    ionosphericModel                IonosphericModel,
    navigationModel                 NavigationModel,
    dgpsCorrections                 DgpsCorrections,
    referenceTime                   ReferenceTime,
    acquisitionAssistance           AcquisitionAssistance,
    realTimeIntegrity               RealTimeIntegrity,
    almanacAndSatelliteHealthSIB    AlmanacAndSatelliteHealthSIB-InfoType,
    ...
}

AlmanacAndSatelliteHealth ::= NULL

UtcModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
}

IonosphericModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
}

NavigationModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    navModelAdditionalData              NavModelAdditionalData          OPTIONAL,
    ...
}


NavModelAdditionalData ::= SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    gps-TOE                             INTEGER (0..167),
    t-TOE-limit                         INTEGER (0..10),
    satRelatedDataList                  SatelliteRelatedDataList,
    ...
}

SatelliteRelatedDataList ::= SEQUENCE (SIZE (0..maxSat~~Less1~~)) OF SatelliteRelatedData

SatelliteRelatedData ::= SEQUENCE {
    satID                               INTEGER (0..63),
    iode                                INTEGER (0..239)
}

DgpsCorrections ::= NULL

ReferenceTime ::= NULL

AcquisitionAssistance ::= NULL

RealTimeIntegrity ::= NULL

AlmanacAndSatelliteHealthSIB-InfoType ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
```

```
}


TransmissionTOWIndicator ::= ENUMERATED {
    requested,
    not-Requested
}
```

[...]

... <NEXT MODIFIED SECTION> ...

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

PCAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM PCAP-CommonDataTypes;


-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-PositionCalculation              ProcedureCode ::= 1
id-InformationExchangeInitiation    ProcedureCode ::= 2
id-InformationReporting             ProcedureCode ::= 3
id-InformationExchangeTermination   ProcedureCode ::= 4
id-InformationExchangeFailure       ProcedureCode ::= 5
id-ErrorIndication                  ProcedureCode ::= 6
id-privateMessage                   ProcedureCode ::= 7



-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfErrors                       INTEGER ::= 256
maxSat                              INTEGER ::= 16
maxSatLess1                         INTEGER ::= 15
maxNrOfLevels                       INTEGER ::= 256
maxNrOfPoints                       INTEGER ::= 15
maxNrOfExpInfo                      INTEGER ::= 32

-- **************************************************************
--
-- IEs
--
-- **************************************************************
```

[...]

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Tdoc R3-030722

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **041** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	DGPS Parameters
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

During RAN #19, it was decided (RP-030187) that for TS 25.331 (R99), the following parameters would be essentially removed from the 'UE positioning GPS DGPS corrections' IE:
- delta pseudorange correction 2 (delta PRC2)
- delta range rate correction 2 (delta RRC2)
- delta pseudorange correction 3 (delta PRC3)
- delta range rate correction 3 (delta RRC3)

So, currently for RRC (R99), the UTRAN is instructed to do the following:
- set delta PRC2 & delta RRC2 to zero
- not send delta PRC3 & delta RRC3 parameters

Accordingly, for RRC (R99), the UE is instructed to ignore these "delta" DGPS parameters when/if sent.

Summary of change: ⌘

The tabular description of clause 9.2.2.5 is modified such that these "delta" DGPS parameters are removed. The corresponding ASN.1 description is modified to indicate the removal of these parameters as well.

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has isolated impact with the previous version of the specification (same release).

This CR has isolated impact under protocol point of view.

		The impact can be considered isolated because the change only affects the following function: - Information Reporting
Consequences if not approved:	⌘	The SAS will be required to provide DGPS-related parameters that serve no purpose to either the RNC or the UE.

Clauses affected:	⌘	9.2.2.5, 9.3.4			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ 25.453 v6.0.0 CR046
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.5 DGPS Corrections

This IE contains DGPS corrections which may be employed to compensate for ranging errors due to atmospheric delay, orbital modeling, and satellite clock drift.

Table 27

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
GPS TOW sec	M		Integer(0..604799)	In seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	M		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	C-Status/Health	*1..<maxSat>*		
>SatID	M		Enumerated (0…63)	
>IODE	M		Integer(0..239)	
>UDRE	M		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	M		Integer(-2047..2047)	Scaling factor 0.32 Meters
>Range Rate Correction	M		Integer(-127..127)	Scaling factor 0.032 meters/sec
~~>Delta PRC2~~	~~M~~		~~Integer(-127..127)~~	~~In meters~~
~~>Delta Range Rate Correction 2~~	~~M~~		~~Integer(-7..7)~~	~~Scaling factor 0.032 meters/sec~~
~~>Delta PRC3~~	~~O~~		~~Integer(-127..127)~~	~~In meters~~
~~>Delta Range Rate Correction 3~~	~~O~~		~~Integer(-7..7)~~	~~Scaling factor 0.032 meters/sec~~

Table 28

Condition	Explanation
Status/Health	This IE shall be present if the *Status/Health* IE is not equal to "no data" or "invalid data"

Table 29

Range bound	Explanation
MaxSat	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

```
-- **************************************************************
--
-- DGPSCorrections
--
-- **************************************************************


DGPSCorrections ::=                 SEQUENCE {
    gps-TOW-sec                         INTEGER (0..604799),
    statusHealth                        DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList  OPTIONAL,
    -- not included if satelliteHealth is equal to noData or invalidData
    iE-Extensions                       ProtocolExtensionContainer { { DGPSCorrections-ExtIEs } }
    OPTIONAL,
    ...
}

DGPSCorrections-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}


DiffCorrectionStatus ::=            ENUMERATED {
                                        udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                        udre-0-2, udre-0-1, noData, invalidData }

DGPS-CorrectionSatInfoList ::=      SEQUENCE (SIZE (1..maxSat)) OF
                                        DGPS-CorrectionSatInfo

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                               INTEGER (0..63),
    iode                                INTEGER (0..239),
    udre                                UDRE,
    prc                                 PRC,
    rrc                                 RRC,
    deltaPRC2                           DeltaPRC,
    deltaRRC2                           DeltaRRC,
    deltaPRC3                           DeltaPRC,
    deltaRRC3                           DeltaRRC
}

UDRE ::=                            ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }

PRC ::=                             INTEGER (-2047..2047)

RRC ::=                             INTEGER (-127..127)

DeltaPRC ::=                        INTEGER ( -127..127)

DeltaRRC ::=                        INTEGER ( -7..7)
```

[…]

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030846

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **042** ⌘ **rev** **1** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Removal of Information Exchange Object Type
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The IE 'Information Exchange Object Type' is not referenced or used within the PCAP specification.
Summary of change:	⌘	The tabular description of clause 9.2.2.20 is voided. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has no impact with the previous version of the specification (same release).
Consequences if not approved:	⌘	Description of an irrelevant IE will remain within the specification.

Clauses affected:	⌘	9.2.2.20

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	TS 25.453 REL-6 CR047
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	A similar voiding of IE 'Information Exchange Object Type' was previously accomplished for RNSAP (RP-020407).

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.20 Information Exchange Object Type

Void.

~~The Information Exchange Object type indicates the type of object that the requested information shall be valid for.~~

~~Table 55~~

~~IE/Group Name~~	~~Presence~~	~~Range~~	~~IE Type and Reference~~	~~Semantics Description~~
~~Information Exchange Object Type~~			~~ENUMERATED(Reference Position, ...)~~	

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030724

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **043** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Information Report of GPS Almanac and Satellite Health
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Currently, it is only possible for a SAS to report GPS Almanac assistance data for 'maxSat'=16 satellite ids within an Information Report message. As a result, a complete set of Almanac assistance (for entire constellation of 24-32 satellites) cannot be provided to an RNC upon request.
Summary of change:	⌘	A constant, 'maxSatAlmanac'=32, is defined so that the IE 'GPS Almanac and Satellite Health' may contain information for up to 32 satellite ids. The range of 'satellite information' in clause 9.2.2.9 (tabular) and its corresponding ASN.1 description are modified to allow information to be reported for up to 32 satellite ids. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change affects only the Information Reporting function.
Consequences if not approved:	⌘	The SAS will remain unable to provide a complete set of GPS Almanac assistance (for entire constellation of 24-32 satellites) to an RNC upon request.

Clauses affected:	⌘	9.2.2.9, 9.3.4, 9.3.6

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	25.453 v6.0.0 CR048
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.9 GPS Almanac and Satellite Health

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Table 35

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
WN_a	M		Bit string(8)	
Satellite information		*1..<maxSat Almanac>*		
>DataID	M		Bitstring(2)	See [10]
>SatID	M		Enumerated(0..63)	Satellite ID
>e	M		Bit string(16)	Eccentricity [10]
>t_{oa}	M		Bit string(8)	Reference Time Ephemeris [10]
>δI	M		Bit string(16)	
>OMEGADOT	M		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [10]
>SV Health	M		Bit string(8)	
>$A^{1/2}$	M		Bit string(24)	Semi-Major Axis (meters)$^{1/2}$ [10]
>$OMEGA_0$	M		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [10]
>M_0	M		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [10]
>ω	M		Bit string(24)	Argument of Perigee (semi-circles) [10]
>af_0	M		Bit string(11)	apparent clock correction [10]
>af_1	M		Bit string(11)	apparent clock correction [10]
SV Global Health	O		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals

Table 36

Range bound	Explanation
MaxSatAlmanac	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

PCAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxSat,
    maxSatAlmanac,
    maxSatLess1,
    maxNrOfLevels,
    maxNrOfPoints,
    maxNrOfExpInfo,
    id-TypeOfError,
    id-MessageStructure
FROM PCAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TransactionID,
    TriggeringMessage
FROM PCAP-CommonDataTypes

    ProtocolExtensionContainer{},
    PCAP-PROTOCOL-EXTENSION
FROM PCAP-Containers;



[…]
```

… <NEXT MODIFIED SECTION> …

```
-- **************************************************************
--
-- GPS Almanac and Satellite Health
--
-- **************************************************************


GPS-AlmanacAndSatelliteHealth ::=   SEQUENCE {
    wn-a                                BIT STRING (SIZE (8)),
    almanacSatInfoList                  AlmanacSatInfoList,
    svGlobalHealth                      BIT STRING (SIZE (364)) OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { GPS-
AlmanacAndSatelliteHealth-ExtIEs } }        OPTIONAL,
    ...
}

GPS-AlmanacAndSatelliteHealth-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}


AlmanacSatInfoList ::=              SEQUENCE (SIZE (1..maxSatAlmanac)) OF
                                        AlmanacSatInfo

AlmanacSatInfo ::=                  SEQUENCE {
    dataID                              BIT STRING (SIZE (2)),
    satID                               INTEGER (0..63),
    e                                   BIT STRING (SIZE (16)),
    t-oa                                BIT STRING (SIZE (8)),
    deltaI                              BIT STRING (SIZE (16)),
    omegaDot                            BIT STRING (SIZE (16)),
    satHealth                           BIT STRING (SIZE (8)),
    a-Sqrt                              BIT STRING (SIZE (24)),
    omega0                              BIT STRING (SIZE (24)),
    m0                                  BIT STRING (SIZE (24)),
    omega                               BIT STRING (SIZE (24)),
    af0                                 BIT STRING (SIZE (11)),
    af1                                 BIT STRING (SIZE (11))
}
```

[…]

… <NEXT MODIFIED SECTION> …

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

PCAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM PCAP-CommonDataTypes;


-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-PositionCalculation              ProcedureCode ::= 1
id-InformationExchangeInitiation    ProcedureCode ::= 2
id-InformationReporting             ProcedureCode ::= 3
id-InformationExchangeTermination   ProcedureCode ::= 4
id-InformationExchangeFailure       ProcedureCode ::= 5
id-ErrorIndication                  ProcedureCode ::= 6
id-privateMessage                   ProcedureCode ::= 7



-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfErrors                       INTEGER ::= 256
maxSat                              INTEGER ::= 16
maxSatAlmanac                       INTEGER ::= 32
maxSatLess1                         INTEGER ::= 15
maxNrOfLevels                       INTEGER ::= 256
maxNrOfPoints                       INTEGER ::= 15
maxNrOfExpInfo                      INTEGER ::= 32

-- **************************************************************
--
-- IEs
--
-- **************************************************************

id-Cause                                        ProtocolIE-ID ::= 1
id-CriticalityDiagnostics                       ProtocolIE-ID ::= 2
id-GPS-UTRAN-TRU                                ProtocolIE-ID ::= 3
id-InformationExchangeID                        ProtocolIE-ID ::= 4
id-InformationExchangeObjectType-InfEx-Rprt     ProtocolIE-ID ::= 5
id-InformationExchangeObjectType-InfEx-Rqst     ProtocolIE-ID ::= 6
id-InformationExchangeObjectType-InfEx-Rsp      ProtocolIE-ID ::= 7
id-InformationReportCharacteristics             ProtocolIE-ID ::= 8
id-InformationType                              ProtocolIE-ID ::= 9
id-MeasuredResultsList                          ProtocolIE-ID ::= 10
id-MessageStructure                             ProtocolIE-ID ::= 19
id-MethodType                                   ProtocolIE-ID ::= 11
id-RefPosition-InfEx-Rqst                       ProtocolIE-ID ::= 12
id-RefPosition-InfEx-Rsp                        ProtocolIE-ID ::= 13
id-RefPosition-Inf-Rprt                         ProtocolIE-ID ::= 14
id-RequestedDataValue                           ProtocolIE-ID ::= 15
```

```
id-RequestedDataValueInformation                ProtocolIE-ID ::= 16
id-TransactionID                                ProtocolIE-ID ::= 17
id-UE-PositionEstimate                          ProtocolIE-ID ::= 18
id-TypeOfError                                  ProtocolIE-ID ::= 21

END
```

[…]

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030797

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **044** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Criticality Aspects
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**A**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	Currently, the tabular and ASN.1 descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 are inconsistent with respect to criticality aspects.
Summary of change:	⌘	The tabular descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 are modified such that their indicated criticality aspects are aligned with their corresponding ASN.1 descriptions. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change only affects the following functions: - Position Calculation Requesting - Information Exchange Requesting and Reporting
Consequences if not approved:	⌘	Tabular descriptions of clauses 9.1.3, 9.1.6, 9.1.7, and 9.1.9 will remain inconsistent with their corresponding ASN.1 descriptions.

Clauses affected:	⌘	9.1.3, 9.1.6, 9.1.7, 9.1.9

Y | N

Other specs affected:	⌘	X		Other core specifications	⌘ TS 25.453 REL-5 CR039
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.1.3 Position Calculation Request

Table 6

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Initial UE Position Estimate	M		9.2.2.6		YES	reject
Measured Results		*0..<maxNoOfSets>*			GLOBAL	reject
>GPS Measured Results	M		9.2.2.12		-~~YES~~	~~reject~~
Cell-ID Measured Results Sets		*0..<maxNoOfSets>*			GLOBAL	reject
>Cell-ID Measured Results Info List	M		9.2.2.31		-	
OTDOA Measurement Group		*0..1*			YES	reject
>OTDOA Reference Cell Info	M		9.2.2.34		-	
>OTDOA Neighbour Cell Info List		*1..<maxNoOfMeasNCell>*			-	
>>OTDOA Neighbour Cell Info	M		9.2.2.33		-	
>OTDOA Measured Results Sets		*1..<maxNoOfSets>*			-	
>>OTDOA Measured Results Info List	M		9.2.2.32		-	

Table 7

Range bound	Explanation
MaxNoOfMeasNCell	Maximum number of neighbouring cells on which information can be reported. The value of MaxNoOfMeasCell is 32.
MaxNoOfSets	Maximum number of sets of Measured Results included in the Position Calculation Request message. The value for maxNoOfSets is 3.

… <NEXT MODIFIED SECTION> …

9.1.6 Information Exchange Initiation Request

Table 10

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		–	
Information Exchange ID	M		9.2.2.19		YES	reject
Information Exchange Object Type	M		9.2.2.20		YES	reject
CHOICE *Information Exchange Object Type*	M				YES	reject
>Reference Position					-	
>>Reference Position Estimate/UE Initial Position	M		9.2.2.6		-	~~reject~~
Information Type	M		9.2.2.22		YES	reject
Information Report Characteristics	M		9.2.2.21		YES	reject
GPS-UTRAN Time Relationship Uncertainty	C-GPS		9.2.2.18		YES	reject

Table 11

Condition	Explanation
GPS	The IE shall be present if the information requested in the *Information Type* IE contains GPS-related data

9.1.7 Information Exchange Initiation Response

Table 12

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	M				YES	ignore
>Reference Position					-	
>>Requested Data Value	M		9.2.2.26		-	~~ignore~~
Criticality Diagnostics	O		9.2.2.4		YES	ignore

9.1.8 Information Exchange Initiation Failure

Table 13

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	reject
Transaction ID	M		9.2.2.28		-	
Information Exchange ID	M		9.2.2.19		YES	ignore
Cause	M		9.2.2.3		YES	ignore
Criticality Diagnostics	O		9.2.2.4		YES	ignore

9.1.9 Information Report

Table 14

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.2.24		YES	ignore
Transaction ID	M		9.2.2.28		–	
Information Exchange ID	M		9.2.2.19		YES	ignore
CHOICE *Information Exchange Object Type*	M				YES	ignore
>Reference Position					-	
>>Requested Data Value Information	M		9.2.2.27		-	~~ignore~~

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030844

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CHANGE REQUEST

⌘ **25.453** **CR** **045** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Information Exchange Initiation Request for GPS Navigation Model
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**A**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	Currently, according to TS 25.331 (R99), the UE may include information for up to 'maxSat'=16 satellites when a request for GPS Navigation Model update is sent to the RNC (see satellite related data list in clause 10.3.7.88a of RRC). However, for the corresponding PCAP request (RNC-to-SAS) for such GPS Navigation Model info, the Information Type IE only allows inclusion of satellite related data for 'maxSatLess1'=15 satellites.
Summary of change:	⌘	The tabular description of clause 9.2.2.22 is modified such that the range of 'satellite related data' is now 0..<maxSat>=16. A corresponding change is made to the related ASN.1 description in clause 9.3.4. In addition, references of the constant 'maxSatLess1' are removed from clauses 9.3.4 and 9.3.6. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change only affects the following function: - Information Exchange Initiation Request
Consequences if not approved:	⌘	The SAS will not be able to receive (and thus consider) RNC requests for GPS Navigation Model update in which satellite related data is provided for 16

	satellites. In addition, the RNC behaviour for receiving a UE request for GPS Navigation Model update will be ambiguous for the case when the UE provides satellite related data for 16 satellites.

Clauses affected:	⌘	9.2.2.22, 9.3.4, 9.3.6			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	TS 25.453 REL-5 CR040
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.22 Information Type

The Information Type indicates which kind of information the SAS shall provide.

Table 58

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE *Information Type*	M			
>Implicit				
>>Method Type	M		9.2.2.25	
>Explicit				
>>**Explicit Information**		*1..<maxnoofExpInfo>*		
>>>CHOICE *Explicit Information Item*	M			
>>>>Almanac and Satellite Health			NULL	
>>>>UTC Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>Ionospheric Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>Navigation Model				
>>>>>Transmission TOW Indicator	M		9.2.2.29	
>>>>>**Nav. Model Additional Data**		*0..1*		
>>>>>>GPS Week	M		Integer (0..1023)	
>>>>>>GPS_Toe	M		Integer (0..167)	GPS time of ephemeris in hours of the latest ephemeris set
>>>>>>T-Toe limit	M		Integer (0..10)	ephemeris age tolerance in hours
>>>>>>**Satellite related data**		*0..<maxSat ~~-1~~>*		
>>>>>>>SatID	M		Integer (0..63)	
>>>>>>>IODE	M		Integer (0..239)	Issue of Data Ephemeris for SatID
>>>>DGPS Corrections			NULL	
>>>>Reference Time			NULL	
>>>>Acquisition Assistance			NULL	
>>>>Real Time Integrity			NULL	
>>>>Almanac and Satellite Health SIB				
>>>>>Transmission TOW Indicator	M		9.2.2.29	

Table 59

Range Bound	Explanation
maxnoofExpInfo	Maximum number of Explicit Information supported in one Information Exchange.
MaxSat	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

PCAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxSat,
    maxSatLess1,
    maxNrOfLevels,
    maxNrOfMeasNCell,
    maxNrOfPoints,
    maxNrOfExpInfo,
    id-TypeOfError,
    id-MessageStructure
FROM PCAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TransactionID,
    TriggeringMessage
FROM PCAP-CommonDataTypes

    ProtocolExtensionContainer{},
    PCAP-PROTOCOL-EXTENSION
FROM PCAP-Containers;


[…]
```

… <NEXT MODIFIED SECTION> …

```
-- ********************************************************
--
-- Information Type
--
-- ********************************************************


InformationType ::= CHOICE {
    implicitInformation         MethodType,
    explicitInformation         ExplicitInformationList,
    ...
}


ExplicitInformationList ::= SEQUENCE (SIZE (1..maxNrOfExpInfo)) OF ExplicitInformation

ExplicitInformation ::= CHOICE {
    almanacAndSatelliteHealth       AlmanacAndSatelliteHealth,
    utcModel                        UtcModel,
    ionosphericModel                IonosphericModel,
    navigationModel                 NavigationModel,
    dgpsCorrections                 DgpsCorrections,
    referenceTime                   ReferenceTime,
    acquisitionAssistance           AcquisitionAssistance,
    realTimeIntegrity               RealTimeIntegrity,
    almanacAndSatelliteHealthSIB    AlmanacAndSatelliteHealthSIB-InfoType,
    ...
}

AlmanacAndSatelliteHealth ::= NULL

UtcModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
}

IonosphericModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
}

NavigationModel ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    navModelAdditionalData              NavModelAdditionalData          OPTIONAL,
    ...
}


NavModelAdditionalData ::= SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    gps-TOE                             INTEGER (0..167),
    t-TOE-limit                         INTEGER (0..10),
    satRelatedDataList                  SatelliteRelatedDataList,
    ...
}

SatelliteRelatedDataList ::= SEQUENCE (SIZE (0..maxSat~~Less1~~)) OF SatelliteRelatedData

SatelliteRelatedData ::= SEQUENCE {
    satID                               INTEGER (0..63),
    iode                                INTEGER (0..239)
}

DgpsCorrections ::= NULL

ReferenceTime ::= NULL

AcquisitionAssistance ::= NULL

RealTimeIntegrity ::= NULL

AlmanacAndSatelliteHealthSIB-InfoType ::= SEQUENCE {
    transmissionTOWIndicator        TransmissionTOWIndicator,
    ...
```

```
}


TransmissionTOWIndicator ::= ENUMERATED {
    requested,
    not-Requested
}


[...]
```

… <NEXT MODIFIED SECTION> …

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

PCAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM PCAP-CommonDataTypes;


-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-PositionCalculation              ProcedureCode ::= 1
id-InformationExchangeInitiation    ProcedureCode ::= 2
id-InformationReporting             ProcedureCode ::= 3
id-InformationExchangeTermination   ProcedureCode ::= 4
id-InformationExchangeFailure       ProcedureCode ::= 5
id-ErrorIndication                  ProcedureCode ::= 6
id-privateMessage                   ProcedureCode ::= 7



-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfErrors                       INTEGER ::= 256
maxSat                              INTEGER ::= 16
maxSatLess1                         INTEGER ::= 15
maxNrOfLevels                       INTEGER ::= 256
maxNrOfPoints                       INTEGER ::= 15
maxNrOfExpInfo                      INTEGER ::= 32
maxNrOfMeasNCell                    INTEGER ::= 32

-- **************************************************************
--
-- IEs
--
-- **************************************************************


[...]
```

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030845

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **046** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	DGPS Parameters
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**A**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

During RAN #19, it was decided (RP-030187) that for TS 25.331 (R99), the following parameters would be essentially removed from the 'UE positioning GPS DGPS corrections' IE:
- delta pseudorange correction 2 (delta PRC2)
- delta range rate correction 2 (delta RRC2)
- delta pseudorange correction 3 (delta PRC3)
- delta range rate correction 3 (delta RRC3)

So, currently for RRC (R99), the UTRAN is instructed to do the following:
- set delta PRC2 & delta RRC2 to zero
- not send delta PRC3 & delta RRC3 parameters

Accordingly, for RRC (R99), the UE is instructed to ignore these "delta" DGPS parameters when/if sent.

Summary of change: ⌘

The tabular description of clause 9.2.2.5 is modified such that these "delta" DGPS parameters are removed. The corresponding ASN.1 description is modified to indicate the removal of these parameters as well.

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has isolated impact with the previous version of the specification (same release).

This CR has isolated impact under protocol point of view.

		The impact can be considered isolated because the change only affects the following function: - Information Reporting
Consequences if not approved:	⌘	The SAS will be required to provide DGPS-related parameters that serve no purpose to either the RNC or the UE.

Clauses affected:	⌘	9.2.2.5, 9.3.4			
Other specs affected:	⌘	**Y** / **N** **X** /	Other core specifications	⌘	TS 25.453 REL-5 CR041
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.5 DGPS Corrections

This IE contains DGPS corrections which may be employed to compensate for ranging errors due to atmospheric delay, orbital modeling, and satellite clock drift.

Table 27

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
GPS TOW sec	M		Integer(0..604799)	In seconds GPS time-of-week when the DGPS corrections were calculated
Status/Health	M		Enumerated(UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data)	
DPGS information	C-Status/Health	*1..<maxSat>*		
>SatID	M		Enumerated (0…63)	
>IODE	M		Integer(0..239)	
>UDRE	M		Enumerated(UDRE ≤ 1.0 m, 1.0m < UDRE ≤ 4.0m, 4.0m < UDRE ≤ 8.0m, 8.0m < UDRE)	The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite.
>PRC	M		Integer(-2047..2047)	Scaling factor 0.32 Meters
>Range Rate Correction	M		Integer(-127..127)	Scaling factor 0.032 meters/sec
~~>Delta PRC2~~	~~M~~		~~Integer(-127..127)~~	~~In meters~~
~~>Delta Range Rate Correction 2~~	~~M~~		~~Integer(-7..7)~~	~~Scaling factor 0.032 meters/sec~~
~~>Delta PRC3~~	~~O~~		~~Integer(-127..127)~~	~~In meters~~
~~>Delta Range Rate Correction 3~~	~~O~~		~~Integer(-7..7)~~	~~Scaling factor 0.032 meters/sec~~

Table 28

Condition	Explanation
Status/Health	This IE shall be present if the *Status/Health* IE is not equal to "no data" or "invalid data"

Table 29

Range bound	Explanation
MaxSat	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

```
-- **************************************************************
--
-- DGPSCorrections
--
-- **************************************************************


DGPSCorrections ::=                 SEQUENCE {
    gps-TOW-sec                         INTEGER (0..604799),
    statusHealth                        DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList  OPTIONAL,
    -- not included if satelliteHealth is equal to noData or invalidData
    iE-Extensions                       ProtocolExtensionContainer { { DGPSCorrections-ExtIEs } }
    OPTIONAL,
    ...
}

DGPSCorrections-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}


DiffCorrectionStatus ::=            ENUMERATED {
                                        udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                        udre-0-2, udre-0-1, noData, invalidData }

DGPS-CorrectionSatInfoList ::=      SEQUENCE (SIZE (1..maxSat)) OF
                                        DGPS-CorrectionSatInfo

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                               INTEGER (0..63),
    iode                                INTEGER (0..239),
    udre                                UDRE,
    prc                                 PRC,
    rrc                                 RRC,
    deltaPRC2                           DeltaPRC,
    deltaRRC2                           DeltaRRC,
    deltaPRC3                           DeltaPRC,
    deltaRRC3                           DeltaRRC
}

UDRE ::=                            ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }

PRC ::=                             INTEGER (-2047..2047)

RRC ::=                             INTEGER (-127..127)

DeltaPRC ::=                        INTEGER ( -127..127)

DeltaRRC ::=                        INTEGER ( -7..7)
```

[…]

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030847

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **047** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Removal of Information Exchange Object Type
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**A**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	The IE 'Information Exchange Object Type' is not referenced or used within the PCAP specification.
Summary of change:	⌘	The tabular description of clause 9.2.2.20 is voided. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has no impact with the previous version of the specification (same release).
Consequences if not approved:	⌘	Description of an irrelevant IE will remain within the specification.

Clauses affected:	⌘	9.2.2.20

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	TS 25.453 REL-5 CR042
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	A similar voiding of IE 'Information Exchange Object Type' was previously accomplished for RNSAP (RP-020407).

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.20 Information Exchange Object Type

Void.

~~The Information Exchange Object type indicates the type of object that the requested information shall be valid for.~~

~~Table 55~~

~~IE/Group Name~~	~~Presence~~	~~Range~~	~~IE Type and Reference~~	~~Semantics Description~~
~~Information Exchange Object Type~~			~~ENUMERATED(Reference Position, …)~~	

3GPP TSG-RAN WG3 Meeting #36
Paris, France, 19th – 23rd May 2003

Tdoc R3-030848

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **048** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Information Report of GPS Almanac and Satellite Health
Source:	⌘	RAN WG3
Work item code:	⌘	TEI5
Date:	⌘	19/05/2002
Category:	⌘	**A**
Release:	⌘	REL-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Currently, it is only possible for a SAS to report GPS Almanac assistance data for 'maxSat'=16 satellite ids within an Information Report message. As a result, a complete set of Almanac assistance (for entire constellation of 24-32 satellites) cannot be provided to an RNC upon request.
Summary of change:	⌘	A constant, 'maxSatAlmanac'=32, is defined so that the IE 'GPS Almanac and Satellite Health' may contain information for up to 32 satellite ids. The range of 'satellite information' in clause 9.2.2.9 (tabular) and its corresponding ASN.1 description are modified to allow information to be reported for up to 32 satellite ids. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release). This CR has isolated impact under protocol point of view. The impact can be considered isolated because the change affects only the Information Reporting function.
Consequences if not approved:	⌘	The SAS will remain unable to provide a complete set of GPS Almanac assistance (for entire constellation of 24-32 satellites) to an RNC upon request.

Clauses affected:	⌘	9.2.2.9, 9.3.4, 9.3.6

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	TS 25.453 REL-5 CR043
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

… <NEXT MODIFIED SECTION> …

9.2.2.9 GPS Almanac and Satellite Health

This IE contains a reduced-precision subset of the clock and ephemeris parameters.

Table 35

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
WN_a	M		Bit string(8)	
Satellite information		*1..<maxSat Almanac>*		
>DataID	M		Bitstring(2)	See [10]
>SatID	M		Enumerated(0..63)	Satellite ID
>e	M		Bit string(16)	Eccentricity [10]
>t_{oa}	M		Bit string(8)	Reference Time Ephemeris [10]
>δI	M		Bit string(16)	
>OMEGADOT	M		Bit string(16)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [10]
>SV Health	M		Bit string(8)	
>$A^{1/2}$	M		Bit string(24)	Semi-Major Axis (meters)$^{1/2}$ [10]
>$OMEGA_0$	M		Bit string(24)	Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles) [10]
>M_0	M		Bit string(24)	Mean Anomaly at Reference Time (semi-circles) [10]
>ω	M		Bit string(24)	Argument of Perigee (semi-circles) [10]
>af_0	M		Bit string(11)	apparent clock correction [10]
>af_1	M		Bit string(11)	apparent clock correction [10]
SV Global Health	O		Bit string(364)	This enables GPS time recovery and possibly extended GPS correlation intervals

Table 36

Range bound	Explanation
MaxSatAlmanac	Maximum number of satellites for which data is included in this IE.

… <NEXT MODIFIED SECTION> …

9.3.4 Information Element Definitions

```
-- **************************************************************
--
-- Information Element Definitions
--
-- **************************************************************

PCAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxSat,
    maxSatLess1,
    maxNrOfLevels,
    maxNrOfMeasNCell,
    maxNrOfPoints,
    maxNrOfExpInfo,
    id-TypeOfError,
    id-MessageStructure
FROM PCAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TransactionID,
    TriggeringMessage
FROM PCAP-CommonDataTypes

    ProtocolExtensionContainer{},
    PCAP-PROTOCOL-EXTENSION
FROM PCAP-Containers;
```

[…]

… <NEXT MODIFIED SECTION> …

```
-- **************************************************************
--
-- GPS Almanac and Satellite Health
--
-- **************************************************************


GPS-AlmanacAndSatelliteHealth ::=   SEQUENCE {
    wn-a                                BIT STRING (SIZE (8)),
    almanacSatInfoList                  AlmanacSatInfoList,
    svGlobalHealth                      BIT STRING (SIZE (364)) OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { GPS-
AlmanacAndSatelliteHealth-ExtIEs } }        OPTIONAL,
    ...
}

GPS-AlmanacAndSatelliteHealth-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}


AlmanacSatInfoList ::=              SEQUENCE (SIZE (1..maxSatAlmanac)) OF
                                        AlmanacSatInfo

AlmanacSatInfo ::=                  SEQUENCE {
    dataID                              BIT STRING (SIZE (2)),
    satID                               INTEGER (0..63),
    e                                   BIT STRING (SIZE (16)),
    t-oa                                BIT STRING (SIZE (8)),
    deltaI                              BIT STRING (SIZE (16)),
    omegaDot                            BIT STRING (SIZE (16)),
    satHealth                           BIT STRING (SIZE (8)),
    a-Sqrt                              BIT STRING (SIZE (24)),
    omega0                              BIT STRING (SIZE (24)),
    m0                                  BIT STRING (SIZE (24)),
    omega                               BIT STRING (SIZE (24)),
    af0                                 BIT STRING (SIZE (11)),
    af1                                 BIT STRING (SIZE (11))
}
```

[…]

… <NEXT MODIFIED SECTION> …

9.3.6 Constant Definitions

```
-- **************************************************************
--
-- Constant definitions
--
-- **************************************************************

PCAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) pcap(4) version1 (1) pcap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    ProcedureCode,
    ProtocolIE-ID
FROM PCAP-CommonDataTypes;


-- **************************************************************
--
-- Elementary Procedures
--
-- **************************************************************

id-PositionCalculation              ProcedureCode ::= 1
id-InformationExchangeInitiation    ProcedureCode ::= 2
id-InformationReporting             ProcedureCode ::= 3
id-InformationExchangeTermination   ProcedureCode ::= 4
id-InformationExchangeFailure       ProcedureCode ::= 5
id-ErrorIndication                  ProcedureCode ::= 6
id-privateMessage                   ProcedureCode ::= 7



-- **************************************************************
--
-- Lists
--
-- **************************************************************

maxNrOfErrors                       INTEGER ::= 256
maxSat                              INTEGER ::= 16
maxSatAlmanac                       INTEGER ::= 32
maxSatLess1                         INTEGER ::= 15
maxNrOfLevels                       INTEGER ::= 256
maxNrOfPoints                       INTEGER ::= 15
maxNrOfExpInfo                      INTEGER ::= 32
maxNrOfMeasNCell                    INTEGER ::= 32

-- **************************************************************
--
-- IEs
--
-- **************************************************************

id-Cause                                        ProtocolIE-ID ::= 1
id-CriticalityDiagnostics                       ProtocolIE-ID ::= 2
id-GPS-UTRAN-TRU                                ProtocolIE-ID ::= 3
id-InformationExchangeID                        ProtocolIE-ID ::= 4
id-InformationExchangeObjectType-InfEx-Rprt     ProtocolIE-ID ::= 5
id-InformationExchangeObjectType-InfEx-Rqst     ProtocolIE-ID ::= 6
id-InformationExchangeObjectType-InfEx-Rsp      ProtocolIE-ID ::= 7
id-InformationReportCharacteristics             ProtocolIE-ID ::= 8
id-InformationType                              ProtocolIE-ID ::= 9
id-MeasuredResultsList                          ProtocolIE-ID ::= 10
id-MessageStructure                             ProtocolIE-ID ::= 19
id-MethodType                                   ProtocolIE-ID ::= 11
id-RefPosition-InfEx-Rqst                       ProtocolIE-ID ::= 12
id-RefPosition-InfEx-Rsp                        ProtocolIE-ID ::= 13
id-RefPosition-Inf-Rprt                         ProtocolIE-ID ::= 14
```

```
id-RequestedDataValue                          ProtocolIE-ID ::= 15
id-RequestedDataValueInformation               ProtocolIE-ID ::= 16
id-TransactionID                               ProtocolIE-ID ::= 17
id-UE-PositionEstimate                         ProtocolIE-ID ::= 18
id-CellId-MeasuredResultsSets                  ProtocolIE-ID ::= 20
id-TypeOfError                                 ProtocolIE-ID ::= 21
id-OTDOA-MeasurementGroup                      ProtocolIE-ID ::= 22

END
```

[…]