TSG-RAN Meeting #14
Kyoto, Japan, 11 - 14 December 2001

Title: **Agreed CRs (Release '99 and Rel-4 category A) to TR 25.921**

Source: **TSG-RAN WG2**

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-012536	agreed	25.921	032		R99	Modulo formula	F	3.5.0	3.6.0
R2-012660	agreed	25.921	033		Rel-4	Modulo formula	A	4.2.0	4.3.0
R2-012585	agreed	25.921	034		R99	Use of extensions in a backward compatible way	F	3.5.0	3.6.0
R2-012661	agreed	25.921	035		Rel-4	Use of extensions in a backward compatible way	A	4.2.0	4.3.0
R2-012631	agreed	25.921	036		R99	Extensions of IE value ranges in tabular	F	3.5.0	3.6.0
R2-012632	agreed	25.921	037		Rel-4	Extensions of IE value ranges in tabular	A	4.2.0	4.3.0

3GPP TSG-RAN WG2 meeting #25　　　　　　*Tdoc R2-012536*
Makuhari, Japan, November 26th – 30th, 2001

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.921** CR **032** | ⌘ rev | **-** | ⌘ | Current version: | **3.5.0** | ⌘ |

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

Proposed change affects: ⌘　　(U)SIM ☐　　ME/UE **X**　　Radio Access Network **X**　　Core Network ☐

Title: ⌘	Modulo formula
Source: ⌘	TSG-RAN WG2
Work item code: ⌘	TEI	*Date:* ⌘ 2001-11-14
Category: ⌘ **F**		*Release:* ⌘ R99

Use one of the following categories:
F *(essential 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)*

Reason for change: ⌘　The definition of the modulo operation in chapter 7.1a is unclear for negative operands. The output from the modulo operation with negative operands can in general not be predicted. Different compilers and mathematical programs have shown different results.

One clear case where negative operands are used is in subclause 8.1.1.7.3 of TS 25.331 v3.8.0. The output of the formula (VTCI-VTMIB) mod 8 is meant to be the "clockwise distance" between VTCI and VTMIB. In the example below, the intended output from the expression is listed for a number of input values.

The desired result is what is expected from (VTCI-VTMIB) mod 8.

VTCI	VTMIB	Desired Result	Result from some compilers
5	4	1	1
6	4	2	2
7	4	3	3
8	4	4	4
1	4	5	-3　(deviation)
2	4	6	-2　(deviation)
3	4	7	-1　(deviation)
4	4	0	0

The intention with the formula should be as below:

E.g. op1 mod op2 = (op1+n*op2) mod op2.

The suggested clarification, that also covers the DIV case, should be according to the

following:

The notations "OP1 div OP2" and "OP1 mod OP2" shall be interpreted according to the following:
OP1 = OP2*A+B
0 =< B =< OP2-1
OP1 div OP2 corresponds to A
OP1 mod OP2 corresponds to B

Summary of change: ⌘	The formula in chapter 7.1a is clarified that the expected result from the modulo operation should be a positive value. **Isolated impact:** This correction has isolated impact. The change would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.	
Consequences if not approved: ⌘	May give incorrect behaviour in the UE.	

Clauses affected: ⌘	7.1a			
Other specs Affected: ⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.921 v4.2.0, CR 033	
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/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7.1a   Specification of algorithms and formulas

When algorithms or formulas are used in the specifications, a formal notation shall be used and mathematical expressions should be used to reduce ambiguity.

- The notations "OP1 div OP2" and "OP1 mod OP2" shall be interpreted according to the following:

    - OP1 = OP2*A+B.
    - 0 =< B =< OP2-1.
    - OP1 div OP2 corresponds to A
    - OP1 mod OP2 corresponds to B

- The notation "*OP1* div *OP2*" shall be interpreted as the signed integer result after integer division (truncating any fractional part) of the operand *OP1* with operand *OP2*.

- The notation "*OP1* mod *OP2*" shall be interpreted as the signed remainder after integer division of the operand *OP1* with operand *OP2*.

CR-Form-v3

CHANGE REQUEST

⌘ **25.921** CR **034** ⌘ rev **-** ⌘ Current version: **3.5.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title: ⌘	Use of extensions in a backward compatible way
Source: ⌘	TSG-RAN WG2
Work item code: ⌘ TEI	**Date:** ⌘ 26/11/2001
Category: ⌘ **F**	**Release:** ⌘ R99

Use <u>one</u> of the following categories:
F (essential 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 <u>one</u> 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)

Reason for change: ⌘	To ensure consistent and backward compatible use of extensions following issues have to be defined: • How to place the new IEs in the extension containers and • How to ensure backward compatibility when adding new values into an enumerated type definition • How to ensure backward compatibility when adding new values into a choice type definition
Summary of change: ⌘	Following definitions have been added: • Always add new IEs before the ellipsis notation in the extension container. • When new values are added into an enumerated type after the ellipsis notation, the same amount of new values shall be added as "dummy" in the same IE in the correspondent older release of the specification. • When new values are added into a choice type after the ellipsis notation, new values shall be added in the protocol container.
Consequences if not approved: ⌘	If these rules are not specified there will be no guarantee for interoperability between nodes supporting different specification versions.

Clauses affected: ⌘	10.5.4

Other specs affected: ⌘	☐ Other core specifications	⌘ 25.921 v4.2.0, CR 035
	☐ Test specifications	
	☐ O&M Specifications	

Other comments: ⌘	This CR was received in LS in R2-011710 from RAN3 where RAN2 were asked to approve this CR into 25.921.

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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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

10.5 RANAP/SABP/RNSAP/NBAP specific extension rules with Backward Compatibility consideration

The following clauses contain rules for extension mechanisums of ASN.1 for RANAP, SABP, RNSAP and NBAP. The purpose of these rules is to guarantee backward compatibility for ASN.1.

10.5.1 Allowed Extension

The allowed extension for ASN.1 description in RANAP, SABP, RNSAP and NBAP are:

1) adding New IEs or IE groups which should be achieved by using the protocol extension container (extension by using of ellipsis notation (...) should be avoided) for:

   - adding at the top level of message; and

   - adding in the SEQUENCE type,

2) extending the range of already define IEs which has ellipsis notation(...);

3) changing the assigned criticality information of already defined IEs; and

4) adding new IEs of IE groups after ellipsis notation (...) in the CHOICE type if the ellipsis notation (...) is present.

10.5.2 Not Allowed Extension

The not allowed extension for ASN.1 description in RANAP, SABP, RNSAP and NBAP are:

1) deleting the already defined IEs or IE groups when no individual criticality information is defined.

2) adding or deleting the criticality information of existing IEs;

3) deleting the already defined values in the ASN.1 type. Instead, a semantic description is added in order to clarify the behaviour; and

4) changing the presence of already defined IEs with no assigned criticality.

This is because above changes do not guarantee the backward compatibility.

10.5.3 Recommendations for extensions for further releases

10.5.3.1 General

This sub-clause gives recommendations for future extensions in versions of the RANAP, RNSAP, NBAP, and SABP where non-backward compatible changes are not acceptable.

10.5.3.2 Usage of Presence and Assigned Criticality in Future Releases

10.5.3.2.1 New Procedures

For procedures introduced when the backward compatibility mechanisms are taken into use the following recommendation applies to the Assigned Criticality of the procedure (in the tabular description of messages visible as the Assigned Criticality of the IE Message Type):

Assigned Criticality	Recommendation	Typical usage
Ignore	Should be used if - the sender does not care whether or not the procedure is supported - or if the sender "already knows" that the procedure is supported	Typically used for procedures where - the sender do not care whether or not the procedure is supported - or where the usage is dependent on previously exchanged information
Ignore and Notify	Should be used if - the sender does not care whether or not the procedure is supported - or if the sender "already knows" that the procedure is supported but need to know whether or not the procedure was understood.	Typically not used.
Reject	Should be used if - the procedure shall be rejected when not supported	Typically used for new procedures where the sender has no prior knowledge on whether or not the procedure will be understood

10.5.3.2.2   New IEs

For new IEs introduced when the backward compatibility mechanisms are taken into use the following recommendation applies to the Assigned Criticality of the IE:

Presence	Assigned Criticality	Recommendation	Typical usage
Optional	Ignore	Should be used if the sender does not care whether or not the function related to the IE is supported.	Typically used for "non core" features (specification text; "… shall, if supported, …".
Optional	Ignore and Notify	Should be used if - the sender does not care whether or not the function related to the IE is supported but need to know whether or not the IE was understood.	Typically used for "non core" features (specification text; "… shall, if supported, …").
Optional	Reject	Should be used if - the alternative to executing the feature related to the IE is rejecting the procedure.	Typically used for "core" features (specification text; "… shall …").
Mandatory / Conditional	Ignore	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is possible to inter-work with nodes implementing older releases (not understanding the IE related to the feature and consequently not supporting the feature)	Typically not used. Note 1.
Mandatory / Conditional	Ignore and Notify	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is possible to inter-work with nodes implementing older releases (not understanding the IE related to the feature and consequently not supporting the feature) but the sending node need to know whether or not the IE was understood.	Typically not used. Note 1.
Mandatory / Conditional	Reject	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is not possible to inter-work with nodes implementing older releases (not supporting the feature)	Typically not used. Note 2.

NOTE 1: This combination (presence + assigned criticality) could be used as an intermediate state, i.e. when the Assigned Criticality is expected/planned to be changed to "Reject" in the future.

NOTE 2: This combination (presence + assigned criticality) should be avoided since it prevents inter-working with older version of a specification.

10.5.3.2.3   Changing the Presence of an IE

The Presence can always be changed in future version of a specification

NOTE: Mandatory and Conditional IEs with Assigned Criticality "Reject" will still cause rejection when missing in a node based on a previous version of the specification (even though changed to Optional).

Recommendation:

The Presence of Mandatory IEs with Assigned Criticality "Reject" should not be changed in future versions of a specification.

The Presence of Conditional IEs with Assigned Criticality "Reject" should not be changed in future versions of a specification, unless it is also ensured that the condition will not result in a requirement to include the IE.

10.5.3.2.4   Changing the Assigned Criticality of an IE

The Assigned Criticality can always be changed in future version of a specification.

> NOTE: The behaviour for missing IEs will remain unchanged when inter-working with a node based on a previous version of the specification.

Recommendation:

When changing the Assigned Criticality of Mandatory and Conditional IEs with Assigned Criticality "Reject" in future versions of a specification special attention should be paid to inter-working between different versions of the specification.

10.5.3.2.5   Removing IEs

Any IE (with Assigned Criticality) can be removed in future version of a specification.

> NOTE: Mandatory and Conditional IEs with Assigned Criticality "Reject" will still cause rejection when missing in a node based on a previous version of the specification (even though changed to Optional).

Recommendation:

Mandatory IEs with Assigned Criticality "Reject" should not be removed in future versions of a specification.

Conditional IEs with Assigned Criticality "Reject" should not be removed in future versions of a specification, unless it is also ensured that the condition, if evaluated for the message where the IE is removed by a node based on a previous version of the specification, will not result in a requirement to include the IE.

10.5.4   Use of extensions

The following rules apply to the use of extensions in RANAP, SABP, RNSAP and NBAP:

1) IEs added in the extension containers shall be added before the ellipsis notation.

2) IEs added in the extension containers shall be placed in the extension containers in the chronological order of their introduction e.g. a late correction of Release 99 may appear after Release 4 corrections in a Release 4 version of the specification.

3) When new values are added into an ENUMERATED type after the ellipsis notation in the later release(e.g Release 4), the same amount of new values need to be added as "dummy" in the same IE in the correspondent older release of the specification (e.g. Release 99).

The "dummy" has to be added into the older release(e.g. Release99) of the specifications when needed, i.e. if the later release(e.g. Release 4) of specification is considered as not stable, the "dummy" shall not be added in the same IE in the correspondent older release(e.g. Release 99) of the specification. When the older release(e.g. release 99) adds new values for later version(e.g. Release 99 June version), the same values shall be added in the same position of the correspondent later release(e.g. Release 4) in order to have backward compatibility when in the future the later release(e.g. Release 4) is considered as stable. Further explanation with an example is shown below:

Release 99 June version: *Example* ::= ENUMERATED {a, b,… }
Release 4 June version: *Example* ::= ENUMERATED {a, b,…, c, d}
Note: In the June version the Release 4 is considered as not stable, therefore no "dummy" was added in release 99)

Release 99 September version, *Example* ::= ENUMERATED {a, b,…, e}
Release 4 September version, *Example* ::= ENUMERATED {a, b,…, e, c, d}
Note: In the September version the value "e" was added in Release 99, the value "e" shall be added at the same position in Release 4 since the Release 4 is yet considered as not stable.

Release 99 December version, *Example* ::= ENUMERATED {a, b,…, e, dummy1, dummy2, f}
Release 4 December version, *Example* ::= ENUMERATED {a, b,…, e, c, d, f}
Note: In the December version, when a new value "f" has to be added in Release 99 and the Release 4 is considered as stable, "dummy1" and "dummy2" are added.

4) When new choice tags are added into a CHOICE type after the ellipsis notation, new tags shall need to be added in the protocol container.

- Any addition of a choice tag in Release x for a CHOICE not existing in Release y (y<x) shall be made by introducing a normal choice tag (not included in the protocol container) after the ellipses if no release z (z >= x) has included a protocol container for this CHOICE yet. Further explanation with an example is shown below:

    Release 99 June version, *Example* ::= CHOICE {a, b,…}
    Release 4 June version, *Example* ::= CHOICE {a, b,…}

    Release 99 September version, *Example* ::= CHOICE {a, b,…, c}
    Release 4 September version, *Example* ::= CHOICE {a, b,…, c}

- Any addition of a choice tag in Release x for a CHOICE already existing in Release y (y<x) shall be made inside a protocol container after the ellipses. Further explanation with an example is shown below:

    Release 99 June version: *Example* ::= CHOICE {a, b,…}
    Release 4 June version: *Example* ::= CHOICE {a, b,…}

    Release 99 September version: *Example* ::= CHOICE {a, b,…}
    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d}}

- Any addition of a choice tag in Release x for a CHOICE already containing a protocol container in Release y (y>x) shall be made inside a protocol container after the ellipses. Further explanation with an example is shown below:

    Release 99 June version: *Example* ::= CHOICE {a, b,…}
    Release 4 June version: *Example* ::= CHOICE {a, b,…, protocol container {d}}

    Release 99 September version: *Example* ::= CHOICE {a, b,…, protocol container {e}}
    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d, e}}

- If any Release has already included a protocol container in this CHOICE, then all future changes to this CHOICE shall be made by introducing IE's in the protocol container. Further explanation with an example is shown below:

    Release 4 June version: *Example* ::= CHOICE {a, b,…, protocol container {d, e}}

    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d, e, f}}

CR-Form-v3

CHANGE REQUEST

⌘ **25.921** CR **035** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title: ⌘	Use of extensions in a backward compatible way	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 28/11/2001
Category: ⌘ **A**		***Release:*** ⌘ REL4

Use <u>one</u> of the following categories: ***F*** *(essential 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 <u>one</u> 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)*

Reason for change: ⌘	To ensure consistent and backward compatible use of extensions following issues have to be defined: • How to place the new IEs in the extension containers and • How to ensure backward compatibility when adding new values into an enumerated type definition • How to ensure backward compatibility when adding new values into a choice type definition
Summary of change: ⌘	Following definitions have been added: • Always add new IEs before the ellipsis notation in the extension container. • When new values are added into an enumerated type after the ellipsis notation, the same amount of new values shall be added as "dummy" in the same IE in the correspondent older release of the specification. • When new values are added into a choice type after the ellipsis notation, new values shall be added in the protocol container.
Consequences if not approved: ⌘	If these rules are not specified there will be no guarantee for interoperability between nodes supporting different specification versions.

Clauses affected: ⌘	10.5.4	
Other specs affected: ⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘ 25.921 v3.5.0, CR034
Other comments: ⌘	This CR was received in LS in R2-011710 from RAN3 where RAN2 were asked to approve this CR into 25.921.	

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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.

10.5 RANAP/SABP/RNSAP/NBAP specific extension rules with Backward Compatibility consideration

The following clauses contain rules for extension mechanisums of ASN.1 for RANAP, SABP, RNSAP and NBAP. The purpose of these rules is to guarantee backward compatibility for ASN.1.

10.5.1 Allowed Extension

The allowed extension for ASN.1 description in RANAP, SABP, RNSAP and NBAP are:

1) adding New IEs or IE groups which should be achieved by using the protocol extension container (extension by using of ellipsis notation (...) should be avoided) for:

   - adding at the top level of message; and

   - adding in the SEQUENCE type,

2) extending the range of already define IEs which has ellipsis notation(...);

3) changing the assigned criticality information of already defined IEs; and

4) adding new IEs of IE groups after ellipsis notation (...) in the CHOICE type if the ellipsis notation (...) is present.

10.5.2 Not Allowed Extension

The not allowed extension for ASN.1 description in RANAP, SABP, RNSAP and NBAP are:

1) deleting the already defined IEs or IE groups when no individual criticality information is defined.

2) adding or deleting the criticality information of existing IEs;

3) deleting the already defined values in the ASN.1 type. Instead, a semantic description is added in order to clarify the behaviour; and

4) changing the presence of already defined IEs with no assigned criticality.

This is because above changes do not guarantee the backward compatibility.

10.5.3 Recommendations for extensions for further releases

10.5.3.1 General

This sub-clause gives recommendations for future extensions in versions of the RANAP, RNSAP, NBAP, and SABP where non-backward compatible changes are not acceptable.

10.5.3.2 Usage of Presence and Assigned Criticality in Future Releases

10.5.3.2.1 New Procedures

For procedures introduced when the backward compatibility mechanisms are taken into use the following recommendation applies to the Assigned Criticality of the procedure (in the tabular description of messages visible as the Assigned Criticality of the IE Message Type):

Assigned Criticality	Recommendation	Typical usage
Ignore	Should be used if - the sender does not care whether or not the procedure is supported - or if the sender "already knows" that the procedure is supported	Typically used for procedures where - the sender do not care whether or not the procedure is supported - or where the usage is dependent on previously exchanged information
Ignore and Notify	Should be used if - the sender does not care whether or not the procedure is supported - or if the sender "already knows" that the procedure is supported but need to know whether or not the procedure was understood.	Typically not used.
Reject	Should be used if - the procedure shall be rejected when not supported	Typically used for new procedures where the sender has no prior knowledge on whether or not the procedure will be understood

10.5.3.2.2 New IEs

For new IEs introduced when the backward compatibility mechanisms are taken into use the following recommendation applies to the Assigned Criticality of the IE:

Presence	Assigned Criticality	Recommendation	Typical usage
Optional	Ignore	Should be used if the sender does not care whether or not the function related to the IE is supported.	Typically used for "non core" features (specification text; "… shall, if supported, …".
Optional	Ignore and Notify	Should be used if - the sender does not care whether or not the function related to the IE is supported but need to know whether or not the IE was understood.	Typically used for "non core" features (specification text; "… shall, if supported, …").
Optional	Reject	Should be used if - the alternative to executing the feature related to the IE is rejecting the procedure.	Typically used for "core" features (specification text; "… shall …").
Mandatory / Conditional	Ignore	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is possible to inter-work with nodes implementing older releases (not understanding the IE related to the feature and consequently not supporting the feature)	Typically not used. Note 1.
Mandatory / Conditional	Ignore and Notify	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is possible to inter-work with nodes implementing older releases (not understanding the IE related to the feature and consequently not supporting the feature) but the sending node need to know whether or not the IE was understood.	Typically not used. Note 1.
Mandatory / Conditional	Reject	Should be used for "core" features where - it is essential that all implementations of future releases support the feature related to the IE - it is not possible to inter-work with nodes implementing older releases (not supporting the feature)	Typically not used. Note 2.

NOTE 1: This combination (presence + assigned criticality) could be used as an intermediate state, i.e. when the Assigned Criticality is expected/planned to be changed to "Reject" in the future.

NOTE 2: This combination (presence + assigned criticality) should be avoided since it prevents inter-working with older version of a specification.

10.5.3.2.3   Changing the Presence of an IE

The Presence can always be changed in future version of a specification

NOTE: Mandatory and Conditional IEs with Assigned Criticality "Reject" will still cause rejection when missing in a node based on a previous version of the specification (even though changed to Optional).

Recommendation:

The Presence of Mandatory IEs with Assigned Criticality "Reject" should not be changed in future versions of a specification.

The Presence of Conditional IEs with Assigned Criticality "Reject" should not be changed in future versions of a specification, unless it is also ensured that the condition will not result in a requirement to include the IE.

10.5.3.2.4 Changing the Assigned Criticality of an IE

The Assigned Criticality can always be changed in future version of a specification.

NOTE: The behaviour for missing IEs will remain unchanged when inter-working with a node based on a previous version of the specification.

Recommendation:

When changing the Assigned Criticality of Mandatory and Conditional IEs with Assigned Criticality "Reject" in future versions of a specification special attention should be paid to inter-working between different versions of the specification.

10.5.3.2.5 Removing IEs

Any IE (with Assigned Criticality) can be removed in future version of a specification.

NOTE: Mandatory and Conditional IEs with Assigned Criticality "Reject" will still cause rejection when missing in a node based on a previous version of the specification (even though changed to Optional).

Recommendation:

Mandatory IEs with Assigned Criticality "Reject" should not be removed in future versions of a specification.

Conditional IEs with Assigned Criticality "Reject" should not be removed in future versions of a specification, unless it is also ensured that the condition, if evaluated for the message where the IE is removed by a node based on a previous version of the specification, will not result in a requirement to include the IE.

10.5.4 Use of extensions

The following rules apply to the use of extensions in RANAP, SABP, RNSAP and NBAP:

1) IEs added in the extension containers shall be added before the ellipsis notation.

2) IEs added in the extension containers shall be placed in the extension containers in the chronological order of their introduction e.g. a late correction of Release 99 may appear after Release 4 corrections in a Release 4 version of the specification.

3) When new values are added into an ENUMERATED type after the ellipsis notation in the later release(e.g Release 4), the same amount of new values need to be added as "dummy" in the same IE in the correspondent older release of the specification (e.g. Release 99).

The "dummy" has to be added into the older release(e.g. Release99) of the specifications when needed, i.e. if the later release(e.g. Release 4) of specification is considered as not stable, the "dummy" shall not be added in the same IE in the correspondent older release(e.g. Release 99) of the specification. When the older release(e.g. release 99) adds new values for later version(e.g. Release 99 June version), the same values shall be added in the same position of the correspondent later release(e.g. Release 4) in order to have backward compatibility when in the future the later release(e.g. Release 4) is considered as stable. Further explanation with an example is shown below:

Release 99 June version: *Example* ::= ENUMERATED {a, b,… }
Release 4 June version: *Example* ::= ENUMERATED {a, b,…, c, d}
Note: In the June version the Release 4 is considered as not stable, therefore no "dummy" was added in release 99)

Release 99 September version, *Example* ::= ENUMERATED {a, b,…, e}
Release 4 September version, *Example* ::= ENUMERATED {a, b,…, e, c, d}
Note: In the September version the value "e" was added in Release 99, the value "e" shall be added at the same position in Release 4 since the Release 4 is yet considered as not stable.

Release 99 December version, *Example* ::= ENUMERATED {a, b,…, e, dummy1, dummy2, f}
Release 4 December version, *Example* ::= ENUMERATED {a, b,…, e, c, d, f}
Note: In the December version, when a new value "f" has to be added in Release 99 and the Release 4 is considered as stable, "dummy1" and "dummy2" are added.

4) When new choice tags are added into a CHOICE type after the ellipsis notation, new tags shall need to be added in the protocol container.

- Any addition of a choice tag in Release x for a CHOICE not existing in Release y (y<x) shall be made by introducing a normal choice tag (not included in the protocol container) after the ellipses if no release z (z >= x) has included a protocol container for this CHOICE yet. Further explanation with an example is shown below:

    Release 99 June version, *Example* ::= CHOICE {a, b,…}
    Release 4 June version, *Example* ::= CHOICE {a, b,…}

    Release 99 September version, *Example* ::= CHOICE {a, b,…, c}
    Release 4 September version, *Example* ::= CHOICE {a, b,…, c}

- Any addition of a choice tag in Release x for a CHOICE already existing in Release y (y<x) shall be made inside a protocol container after the ellipses. Further explanation with an example is shown below:

    Release 99 June version: *Example* ::= CHOICE {a, b,…}
    Release 4 June version: *Example* ::= CHOICE {a, b,…}

    Release 99 September version: *Example* ::= CHOICE {a, b,…}
    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d}}

- Any addition of a choice tag in Release x for a CHOICE already containing a protocol container in Release y (y>x) shall be made inside a protocol container after the ellipses. Further explanation with an example is shown below:

    Release 99 June version: *Example* ::= CHOICE {a, b,…}
    Release 4 June version: *Example* ::= CHOICE {a, b,…, protocol container {d}}

    Release 99 September version: *Example* ::= CHOICE {a, b,…, protocol container {e}}
    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d, e}}

- If any Release has already included a protocol container in this CHOICE, then all future changes to this CHOICE shall be made by introducing IE's in the protocol container. Further explanation with an example is shown below:

    Release 4 June version: *Example* ::= CHOICE {a, b,…, protocol container {d, e}}

    Release 4 September version: *Example* ::= CHOICE {a, b,…, protocol container {d, e, f}}

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.921** CR **036** | ⌘ | ev | **-** | ⌘ | Current version: | **3.5.0** | ⌘ |

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Extensions of IE value ranges in tabular	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-11-27

Category: ⌘ **F**	***Release:*** ⌘ R99

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)*

Reason for change: ⌘	When IE value ranges, multiplicity values and type constant values have been added in the tabular format in REL-4 compared to R99, there is a need to clearly indicate which of them that have been added in REL-4.

The current recommendation is to include text in the version column on which values that are added in which release. However, this would cause a lack of overview as the number of releases and added values will increase. Therefore an improvement would be beneficial. |
| **Summary of change:** ⌘ | The recommendation on how to indicate in which release a certain value is indicated has been changed. Te new recommendation states that a subrow shall be added which includes the new values and the version is indicated in the version column of that subrow.

Isolated impact
This CR concerns specification guidelines. Hence, the CR has no direct impact on implementations. Even the application of the proposed guidelines does not affect implementations since it only concerns how the information is represented in the tabular format, as shown in the CRs applying the guideline to 25.331. |
| **Consequences if not approved:** ⌘ | The indications about which release a cerian value or constant is added may become hard to follow in the future. |

Clauses affected: ⌘	9.1.1.2.5
Other specs affected: ⌘	☐ Other core specifications ⌘ 25.921 v4.2.0, CR 037
	☐ 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/3G_Specs/CRs.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.

9.1.1.2.5 Version column

When an information element is added from one version to a latter one, the version in which the element is added (e.g.: REL-4, REL-5) is included in the version column.

When a new CHOICE group is added from one version to a later one, the version in which the group is added is included in the version column of all new rows. If some of the information elements in the new CHOICE group were included in the older version (but not inside a CHOICE group), the version column is not updated for those information elements (see also the example at the end of this clause).

When an existing CHOICE group is extended from one version to a later one to include more options, the version in which the new options are added is included in the version column of the rows describing the new options.

When the type of an information element is modified from one version to a later one to include more values, a new subrow is created in which the new values are added. tThe version in which the modification takes place is included in the version column of the new subrow, and the new values are indicated in that column. By convention the version column is left blank for the present release.

When the multiplicity of an IE is extended from one version to another, a new subrow is created in which the extended multiplicity values are included. The version in which the modification takes place is included in the version column of the new subrow.

The example below shows how the version column is used for the cases described above. The first table shows an example of a Release '99 table:

IE/Group Name	Need	Multi	Type and reference	Semantics description	Version
Element1-99	MP		Type1		
Element2-99	MP		Type2		
CHOICE choice1-99	MP				
>first					
>>Element3-99	MP		Type3		
>second					
>>Element4-99	MP		Type4		
Element5-99	MP		Enumerated(a,b)		

The second table shows extensions of the above table in Release 45, and where how the REL-4 and REL-5 shall be included in the version column shall be included:

IE/Group Name	Need	Multi	Type and reference	Semantics description	Version
Element1-99	MP		Type1		
Element6-r4	MP		Type6		REL-4
CHOICE choice2-r4	MP				REL-4
>old					REL-4
>>Element2-99	MP		Type2		
>new					REL-4
>>Element7-r4	MP		Type7		REL-4
CHOICE choice1-99	MP				
>first					
>>Element3-99	MP		Type3		
>second					
>>Element4-99	MP		Type4		
>third					REL-4
>>Element8-r4	MP		Type8		REL-4
Element5-99	MP		Enumerated(a,b,c)		Value c is included in REL-4.
		1 to 2			REL-4
			c)		REL-5

CR-Form-v4

CHANGE REQUEST

⌘ **25.921** CR **037** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Extensions of IE value ranges in tabular		
Source: ⌘	TSG-RAN WG2		
Work item code: ⌘	TEI	***Date:*** ⌘	2001-11-27
Category: ⌘	**A**	***Release:*** ⌘	REL-4

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)
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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)

Reason for change: ⌘	When IE value ranges, multiplicity values and type constant values have been added in the tabular format in REL-4 compared to R99, there is a need to clearly indicate which of them that have been added in REL-4. The current recommendation is to include text in the version column on which values that are added in which release. However, this would cause a lack of overview as the number of releases and added values will increase. Therefore an improvement would be beneficial.
Summary of change: ⌘	The recommendation on how to indicate in which release a certain value is indicated has been changed. Te new recommendation states that a subrow shall be added which includes the new values and the version is indicated in the version column of that subrow. Isolated impact This CR concerns specification guidelines. Hence, the CR has no direct impact on implementations. Even the application of the proposed guidelines does not affect implementations since it only concerns how the information is represented in the tabular format, as shown in the CRs applying the guideline to 25.331.
Consequences if not approved: ⌘	The indications about which release a cerian value or constant is added may become hard to follow in the future.

Clauses affected: ⌘	9.1.1.2.5		
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications		25.921 v3.5.0, CR 036

Other comments:	⌘	Differences from the corresponding R99 CR are highlighted with yellow.

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When the type of an information element is modified from one version to a later one to include more values, a new subrow is created in which the new values are added. tThe version in which the modification takes place is included in the version column of the new subrow, and the new values are indicated in that column. By convention the version column is left blank for the present release.

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>old					REL-4
>>Element2-99	MP		Type2		
>new					REL-4
>>Element7-r4	MP		Type7		REL-4
CHOICE choice1-99	MP				
>first					
>>Element3-99	MP		Type3		
>second					
>>Element4-99	MP		Type4		
>third					REL-4
>>Element8-r4	MP		Type8		REL-4
Element5-99	MP		Enumerated(a,b,c)		Value c is included in REL-4.
		1 to 2			REL-4
			c)		REL-5