TSG RAN Meeting #17   **RP-020599**
Biarritz, France, 3 - 6 September, 2002

Title   **CRs (R99 and Rel-4/Rel-5 Category A) to TS 25.410**
Source   **TSG RAN WG3**
Agenda Item   **7.3.3**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-021834	25.410	3.7.0	3.8.0	R99	040	-	F	Inclusion of RANAP message in RNC initiated SCCP Connection Request	TEI
R3-021835	25.410	4.4.0	4.5.0	REL-4	041	-	A	Inclusion of RANAP message in RNC initiated SCCP Connection Request	TEI
R3-021836	25.410	5.1.0	5.2.0	REL-5	042	-	A	Inclusion of RANAP message in RNC initiated SCCP Connection Request	TEI

3GPP TSG-RAN3 Meeting #31   *Tdoc ⌘R3-021834*
Stockholm, Sweden, 19th-23th August 2002

CR-Form-v7

CHANGE REQUEST

⌘   **25.410** CR **040**   ⌘ **rev**   **-**   ⌘   Current version: **3.7.0**   ⌘

*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 **X**   Core Network **X**

Title:	⌘	Inclusion of RANAP message in RNC initiated SCCP Connection Request	
Source:	⌘	RAN WG3	
Work item code:	⌘ TEI	***Date:*** ⌘	19/08/2002
Category:	⌘ **F**	***Release:*** ⌘	R99

Use <u>one</u> 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 <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)
Rel-6   (Release 6)

Reason for change: ⌘	In Section 4.5.1.1.2, it is stated that for RNC initiated SCCP signalling connection, when the RNC sends the SCCP connection request message to the Core Network, a RANAP message is included in the user data field of the SCCP connection request message.
	The RANAP message that is included in the user data field of the SCCP connection request is the INITIAL UE MESSAGE defined in TS 25.413. The INITIAL UE MESSAGE carries the UE payload in the NAS-PDU IE. One of the possible payloads that can be carried is the ATTACH REQUEST as defined in TS 24.008. When the ATTACH REQUEST is used as the NAS-PDU, the maximum size of the INITIAL UE MESSAGE is 149 bytes (please refer to Tdoc #R3-020591 submitted in RAN3 #27 for information on how this number is computed). This problem occurs with the ROUTING AREA UPDATE REQUEST message also.
	The maximum user data field size in the SCCP Connection Request message is 130 bytes. As the maximum size of the INITIAL UE MESSAGE is larger than the maximum available size of the user data field in SCCP CR, the mandatory inclusion of the RANAP message in the SCCP CR is no more possible. Thus, the INITIAL UE MESSAGE message will not be included in the SCCP CR whenever its size exceeds the user data field size. The INITIAL UE MESSAGE message will then be sent in an SCCP DT message.
Summary of change: ⌘	The presence of the RANAP message in the RNC initiated SCCP CR is changed to conditional. It is included and mandated (for backwards compatibility reasons) provided that the RANAP message size does not exceed the available space in the user data field in the SCCP CR. It is mandated to not include the RANAP message whenever it exceeds the available space in the user data field in the SCCP CR.

	<u>Impact analysis</u> Impact assessment towards the previous version of the specification (same release): The CR has isolated impact with the previous version of the specification (same release). The impact can be considered isolated because the change affects only the way SCCP is used
Consequences if not approved: ⌘	As the maximum size of INITIAL UE MESSAGE is larger than the maximum size available in the user data field in existing SCCP CR, using INITIAL UE MESSAGE with a size any larger than this limit will cause the user data field size in the SCCP Connection Request to be exceeded. There will still be no existing mean to carry the initiating NAS PDU on Iu if the size of the initiating NAS PDU exceeds a certain limit and therefore the UE will be unable under these circumstances to attach to the network or perform a Routing Area Update.

Clauses affected: ⌘	4.5.1.1.2.1

		Y	N			
Other specs	⌘	X		Other core specifications	⌘	TS 25.410 REL-4 CR 041 TS 25.410 REL-5 CR 042
affected:			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.

4.5 I$_u$ Interface Characteristics

4.5.1 Use of Transport Network User Plane as Signalling Bearer

4.5.1.1 Use of SCCP

4.5.1.1.1 General

The SCCP is used to support signalling messages between the CNs and the RNC. One user function of the SCCP, called Radio Access Network Application Part (RANAP), is defined. The RANAP uses one signalling connection per active UE and CN for the transfer of layer 3 messages.

Both connectionless and connection-oriented procedures are used to support the RANAP. TS 25.413 explains whether connection oriented or connectionless services should be used for each layer 3 procedure.

RANAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing scheme to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RANAP SSN as defined in [13] shall always be included).

- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator).

- Translation Type = 0000 0000 (not used).

- Numbering Plan = 0001 (E.163/4).

- Nature of Address Indicator = 000 0100 (International Significant Number).

- Encoding Scheme = 0001 or 0010 (BCD, odd or even).

- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

The following subclauses describe the use of SCCP connections for RANAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection release procedures. Subclause 4.5.1.4 describes abnormal conditions.

4.5.1.1.2 SCCP Connection Establishment procedure

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between RNC and CN, and no SCCP connection exists between the CN and the RNC involved, for the concerned UE.

Various SCCP connection establishment cases have to be distinguished:

i) RNC Initiated SCCP Signalling Connection;

ii) CN Initiated SCCP Signalling Connection.

The above cases are the only cases currently identified for SCCP connection establishment. Others may emerge in the future.

4.5.1.1.2.1 Establishment procedure in case i

The SCCP signalling connection establishment is initiated, by the RNC, at the reception of the first layer 3 non access stratum message from the UE.

Initiation

The RNC sends SCCP CONNECTION REQUEST message to the Core Network. A RANAP message shall be~~is~~ included in the user data field of the SCCP CONNECTION REQUEST message when the RANAP message size is less than or equal to the maximum size of the user data field in the SCCP CONNECTION REQUEST message. When the RANAP message is longer than the maximum size, the user data field shall not be included in the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**

    - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the RNC.

- **unsuccessful outcome**

    - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the RNC. This message may contain a RANAP message in the user data field.

For more information on how the RANAP procedure Initial UE Message is handled, please see the elementary procedure Initial UE Message in TS 25.413 [6].
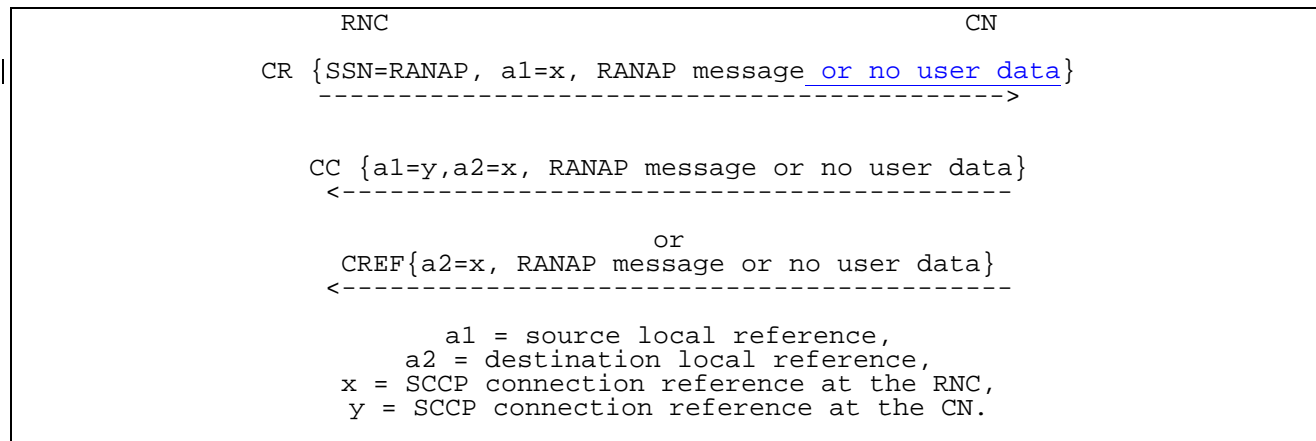
```
                RNC                                              CN
       CR {SSN=RANAP, a1=x, RANAP message or no user data}
             ------------------------------------------>

           CC {a1=y,a2=x, RANAP message or no user data}
            <------------------------------------------
                               or
            CREF{a2=x, RANAP message or no user data}
             <------------------------------------------

                  a1 = source local reference,
                a2 = destination local reference,
             x = SCCP connection reference at the RNC,
              y = SCCP connection reference at the CN.
```

Figure 4.2: Setting-up of RNC Initiated SCCP Signalling Connection

3GPP TSG-RAN3 Meeting #31   *Tdoc* ⌘ *R3-021835*
Stockholm, Sweden, 19th-23th August 2002

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.410** CR **041** | ⌘ **rev** | **-** | ⌘ | Current version: | **4.4.0** | ⌘ |

*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 **X**   Core Network **X**

Title:	⌘	Inclusion of RANAP message in RNC initiated SCCP Connection Request	
Source:	⌘	RAN WG3	
Work item code: ⌘	TEI	***Date:*** ⌘	19/08/2002
Category:	⌘ **A**	***Release:*** ⌘	Rel-4

Use <u>one</u> 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 <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)
Rel-6   (Release 6)

Reason for change: ⌘	In Section 4.5.1.1.2, it is stated that for RNC initiated SCCP signalling connection, when the RNC sends the SCCP connection request message to the Core Network, a RANAP message is included in the user data field of the SCCP connection request message.

The RANAP message that is included in the user data field of the SCCP connection request is the INITIAL UE MESSAGE defined in TS 25.413.   The INITIAL UE MESSAGE carries the UE payload in the NAS-PDU IE.   One of the possible payloads that can be carried is the ATTACH REQUEST as defined in TS 24.008. When the ATTACH REQUEST is used as the NAS-PDU, the maximum size of the INITIAL UE MESSAGE is 149 bytes (please refer to Tdoc #R3-020591 submitted in RAN3 #27 for information on how this number is computed). This problem occurs with the ROUTING AREA UPDATE REQUEST message also.

The maximum user data field size in the SCCP Connection Request message is 130 bytes. As the maximum size of the INITIAL UE MESSAGE is larger than the maximum available size of the user data field in SCCP CR, the mandatory inclusion of the RANAP message in the SCCP CR is no more possible. Thus, the INITIAL UE MESSAGE message will not be included in the SCCP CR whenever its size exceeds the user data field size. The INITIAL UE MESSAGE message will then be sent in an SCCP DT message. |
| ***Summary of change:*** ⌘ | The presence of the RANAP message in the RNC initiated SCCP CR is changed to conditional. It is included and mandated (for backwards compatibility reasons) provided that the RANAP message size does not exceed the available space in the user data field in the SCCP CR. It is mandated to not include the RANAP message whenever it exceeds the available space in the user data field in the SCCP CR. |

		<u>Impact analysis</u> Impact assessment towards the previous version of the specification (same release): The CR has isolated impact with the previous version of the specification (same release). The impact can be considered isolated because the change affects only the way SCCP is used
Consequences if not approved:	⌘	As the maximum size of INITIAL UE MESSAGE is larger than the maximum size available in the user data field in existing SCCP CR, using INITIAL UE MESSAGE with a size any larger than this limit will cause the user data field size in the SCCP Connection Request to be exceeded. There will still be no existing mean to carry the initiating NAS PDU on Iu if the size of the initiating NAS PDU exceeds a certain limit and therefore the UE will be unable under these circumstances to attach to the network or perform a Routing Area Update.

Clauses affected:	⌘	4.5.1.1.2.1

		Y	**N**			
Other specs	⌘	X		Other core specifications	⌘	TS 25.410 R99 CR 040 TS 25.410 REL-5 CR 042
affected:			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.

4.5 I_u Interface Characteristics

4.5.1 Use of Transport Network User Plane as Signalling Bearer

4.5.1.1 Use of SCCP

4.5.1.1.1 General

The SCCP is used to support signalling messages between the CNs and the RNC. One user function of the SCCP, called Radio Access Network Application Part (RANAP), is defined. The RANAP uses one signalling connection per active UE and CN for the transfer of layer 3 messages.

Both connectionless and connection-oriented procedures are used to support the RANAP. TS 25.413 explains whether connection oriented or connectionless services should be used for each layer 3 procedure.

RANAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing scheme to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RANAP SSN as defined in [13] shall always be included).

- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator).

- Translation Type = 0000 0000 (not used).

- Numbering Plan = 0001 (E.163/4).

- Nature of Address Indicator = 000 0100 (International Significant Number).

- Encoding Scheme = 0001 or 0010 (BCD, odd or even).

- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

The following subclauses describe the use of SCCP connections for RANAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection release procedures. Subclause 4.5.1.4 describes abnormal conditions.

4.5.1.1.2 SCCP Connection Establishment procedure

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between RNC and CN, and no SCCP connection exists between the CN and the RNC involved, for the concerned UE.

Various SCCP connection establishment cases have to be distinguished:

i) RNC Initiated SCCP Signalling Connection;

ii) CN Initiated SCCP Signalling Connection.

The above cases are the only cases currently identified for SCCP connection establishment. Others may emerge in the future.

4.5.1.1.2.1 Establishment procedure in case i

The SCCP signalling connection establishment is initiated, by the RNC, at the reception of the first layer 3 non access stratum message from the UE.

Initiation

The RNC sends SCCP CONNECTION REQUEST message to the Core Network. A RANAP message ~~is~~shall be included in the user data field of the SCCP CONNECTION REQUEST message when the RANAP message size is less than or equal to the maximum size of the user data field in the SCCP CONNECTION REQUEST message. When the RANAP message is longer than the maximum size, the user data field shall not be included in the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**

    - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the RNC.

- **unsuccessful outcome**

    - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the RNC. This message may contain a RANAP message in the user data field.

For more information on how the RANAP procedure Initial UE Message is handled, please see the elementary procedure Initial UE Message in TS 25.413 [6].
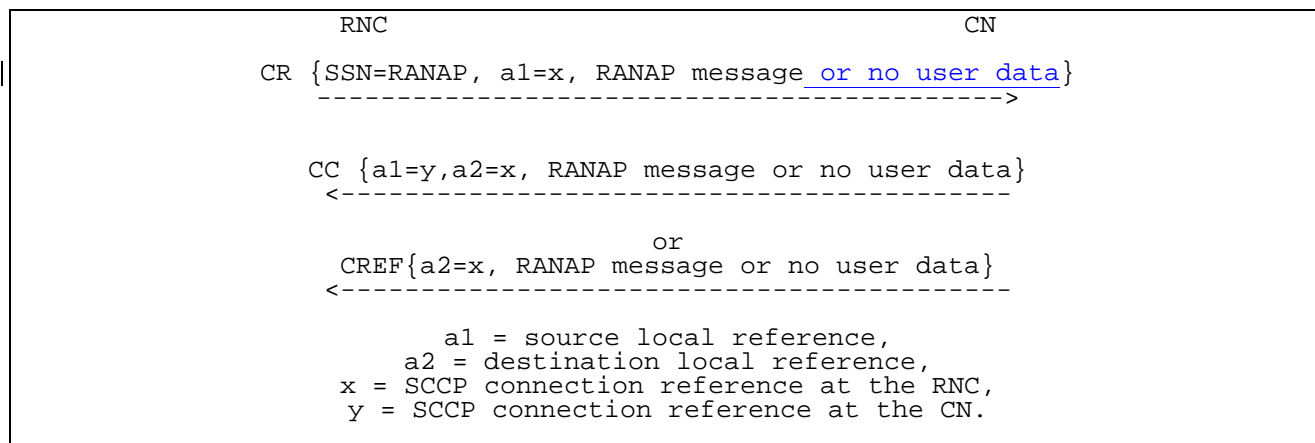
```
            RNC                                           CN
    CR {SSN=RANAP, a1=x, RANAP message or no user data}
        ------------------------------------------->

       CC {a1=y,a2=x, RANAP message or no user data}
        <-------------------------------------
                          or
       CREF{a2=x, RANAP message or no user data}
         <-------------------------------------

             a1 = source local reference,
           a2 = destination local reference,
        x = SCCP connection reference at the RNC,
         y = SCCP connection reference at the CN.
```

Figure 4.2: Setting-up of RNC Initiated SCCP Signalling Connection

3GPP TSG-RAN3 Meeting #31
Stockholm, Sweden, 19ᵗʰ-23th August 2002

Tdoc ⌘*R3-021836*

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.410 CR 042** | ⌘ **rev** | **-** | ⌘ Current version: | **5.1.0** | ⌘ |

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 **X** Core Network **X**

Title: ⌘	Inclusion of RANAP message in RNC initiated SCCP Connection Request	
Source: ⌘	RAN WG3	
Work item code: ⌘	TEI	***Date:*** ⌘ 19/08/2002
Category: ⌘ **A**	Use <u>one</u> 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.	***Release:*** ⌘ Rel-5 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) Rel-6 (Release 6)

Reason for change: ⌘	In Section 4.5.1.1.2, it is stated that for RNC initiated SCCP signalling connection, when the RNC sends the SCCP connection request message to the Core Network, a RANAP message is included in the user data field of the SCCP connection request message. The RANAP message that is included in the user data field of the SCCP connection request is the INITIAL UE MESSAGE defined in TS 25.413. The INITIAL UE MESSAGE carries the UE payload in the NAS-PDU IE. One of the possible payloads that can be carried is the ATTACH REQUEST as defined in TS 24.008. When the ATTACH REQUEST is used as the NAS-PDU, the maximum size of the INITIAL UE MESSAGE is 149 bytes (please refer to Tdoc #R3-020591 submitted in RAN3 #27 for information on how this number is computed). This problem occurs with the ROUTING AREA UPDATE REQUEST message also. The maximum user data field size in the SCCP Connection Request message is 130 bytes. As the maximum size of the INITIAL UE MESSAGE is larger than the maximum available size of the user data field in SCCP CR, the mandatory inclusion of the RANAP message in the SCCP CR is no more possible. Thus, the INITIAL UE MESSAGE message will not be included in the SCCP CR whenever its size exceeds the user data field size. The INITIAL UE MESSAGE message will then be sent in an SCCP DT message.
Summary of change: ⌘	The presence of the RANAP message in the RNC initiated SCCP CR is changed to conditional. It is included and mandated (for backwards compatibility reasons) provided that the RANAP message size does not exceed the available space in the user data field in the SCCP CR. It is mandated to not include the RANAP message whenever it exceeds the available space in the user data field in the SCCP CR.

<table>
<tr>
<td></td>
<td colspan="2"><u>Impact analysis</u>
Impact assessment towards the previous version of the specification (same release): The CR has isolated impact with the previous version of the specification (same release). The impact can be considered isolated because the change affects only the way SCCP is used</td>
</tr>
<tr>
<td>Consequences if
not approved:</td>
<td>⌘</td>
<td>As the maximum size of INITIAL UE MESSAGE is larger than the maximum size available in the user data field in existing SCCP CR, using INITIAL UE MESSAGE with a size any larger than this limit will cause the user data field size in the SCCP Connection Request to be exceeded.
There will still be no existing mean to carry the initiating NAS PDU on Iu if the size of the initiating NAS PDU exceeds a certain limit and therefore the UE will be unable under these circumstances to attach to the network or perform a Routing Area Update.</td>
</tr>
</table>

Clauses affected:	⌘	4.5.1.1.2.1		

		Y	N			
Other specs	⌘	X		Other core specifications	⌘	TS 25.410 R99 CR 040 TS 25.410 REL-4 CR 041
affected:			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.

4.5 I$_u$ Interface Characteristics

4.5.1 Use of Transport Network User Plane as Signalling Bearer

4.5.1.1 Use of SCCP

4.5.1.1.1 General

The SCCP is used to support signalling messages between the CNs and the RNC. One user function of the SCCP, called Radio Access Network Application Part (RANAP), is defined. The RANAP uses one signalling connection per active UE and CN for the transfer of layer 3 messages.

Both connectionless and connection-oriented procedures are used to support the RANAP. TS 25.413 explains whether connection oriented or connectionless services should be used for each layer 3 procedure.

RANAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing scheme to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RANAP SSN as defined in [13] shall always be included).

- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator).

- Translation Type = 0000 0000 (not used).

- Numbering Plan = 0001 (E.163/4).

- Nature of Address Indicator = 000 0100 (International Significant Number).

- Encoding Scheme = 0001 or 0010 (BCD, odd or even).

- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

The following subclauses describe the use of SCCP connections for RANAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection release procedures. Subclause 4.5.1.4 describes abnormal conditions.

4.5.1.1.2 SCCP Connection Establishment procedure

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between RNC and CN, and no SCCP connection exists between the CN and the RNC involved, for the concerned UE.

Various SCCP connection establishment cases have to be distinguished:

i) RNC Initiated SCCP Signalling Connection;

ii) CN Initiated SCCP Signalling Connection.

The above cases are the only cases currently identified for SCCP connection establishment. Others may emerge in the future.

4.5.1.1.2.1 Establishment procedure in case i

The SCCP signalling connection establishment is initiated, by the RNC, at the reception of the first layer 3 non access stratum message from the UE.

Initiation

The RNC sends SCCP CONNECTION REQUEST message to the Core Network. A RANAP message ~~is~~shall be included in the user data field of the SCCP CONNECTION REQUEST message when the RANAP message size is less than or equal to the maximum size of the user data field in the SCCP CONNECTION REQUEST message. When the RANAP message is longer than the maximum size, the user data field shall not be included in the SCCP CONNECTION REQUEST message.

Termination

- **successful outcome**

    - The SCCP CONNECTION CONFIRM message, which may optionally contain a connection oriented RANAP message in the user data field, is returned to the RNC.

- **unsuccessful outcome**

    - If the SCCP signalling connection establishment fails, an SCCP CONNECTION REFUSAL message will be sent back to the RNC. This message may contain a RANAP message in the user data field.

For more information on how the RANAP procedure Initial UE Message is handled, please see the elementary procedure Initial UE Message in TS 25.413 [6].

```
                      RNC                                        CN
       CR {SSN=RANAP, a1=x, RANAP message or no user data}
            ----------------------------------------->


           CC {a1=y,a2=x, RANAP message or no user data}
            <----------------------------------------
                              or
             CREF{a2=x, RANAP message or no user data}
              <----------------------------------------

                  a1 = source local reference,
                a2 = destination local reference,
             x = SCCP connection reference at the RNC,
              y = SCCP connection reference at the CN.
```
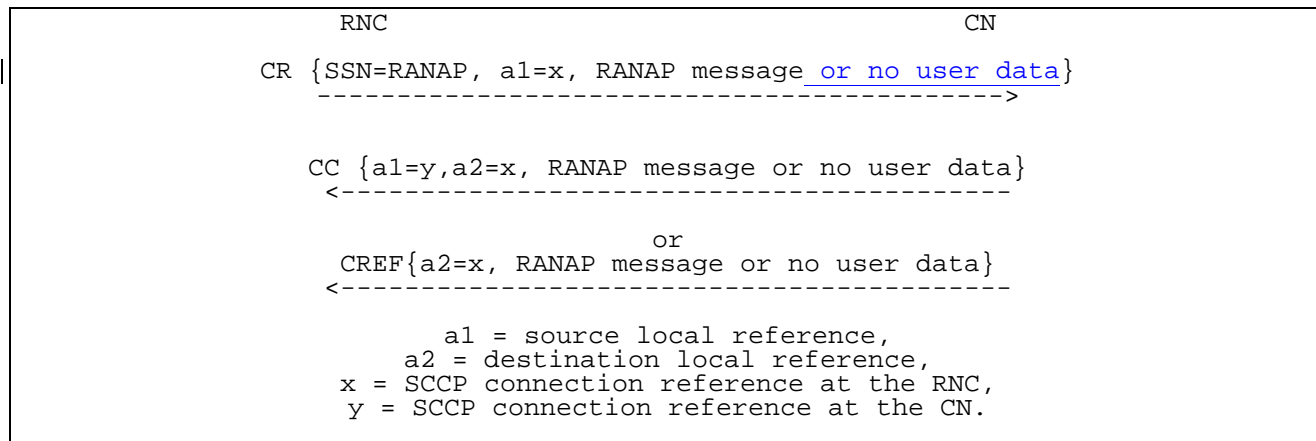
Figure 4.2: Setting-up of RNC Initiated SCCP Signalling Connection