TSG-RAN Meeting #16
Marco Island, FL, USA, 4 - 7 June 2002

RP-020321

Title: **Agreed CRs (Release '99 and Rel-4/Rel-5 category A) to TS 25.301**

Source: **TSG-RAN WG2**

Agenda item: **7.2.3**

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-021205	agreed	25.301	063		R99	Introduction of DSCH-RNTI	F	3.9.0	3.10.0
R2-021206	agreed	25.301	064		Rel-4	Introduction of DSCH-RNTI	A	4.2.0	4.3.0
R2-021207	agreed	25.301	065		Rel-5	Introduction of DSCH-RNTI	A	5.0.0	5.1.0

CR-Form-v5.1

CHANGE REQUEST

⌘ **25.301** CR **063** ⌘**rev** **-** ⌘ Current version: **3.9.0** ⌘

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: ⌘	Introduction of DSCH-RNTI	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 13th- May 2002
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: ⌘	DSCH-RNTI is missing from the current version of the specification	
Summary of change: ⌘	DSCH-RNTI is added	
Consequences if not approved: ⌘	Incomplete specification	

Clauses affected: ⌘	6.1, 7	
Other specs affected: ⌘	☐ Other core specifications ⌘	25.301 v4.2.0, CR 064 25.301 v5.0.0, CR 065
	☐ 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.

6 User Identification and RRC Connection Mobility

6.1 UE identification on the radio interface

A Radio Network Temporary Identity (RNTI) is used as an UE identifier on RACH/FACH, RACH+CPCH/FACH or, for FDD mode, also on DSCH by the MAC protocol, or on PCH by the RRC, when a RRC connection exists.

Definition of UE identifiers

Several~~Two~~ types of RNTIs exist. One is used within the Serving RNC and it is denoted by Serving RNC RNTI (S-RNTI), ~~the~~ other is used within a cell controlled by a CRNC, when applicable, and it is denoted by Cell RNTI (C-RNTI). The third type denoted DSCH-RNTI of an UE is used within a cell controlled by a CRNC when a DSCH is allocated.

S-RNTI is allocated for all UEs having a RRC connection. It is allocated by the Serving RNC and it is unique within the Serving RNC. S-RNTI is reallocated always when the Serving RNC for the RRC connection is changed and deallocated when the RRC connection is released.

In addition for each UE having an RRC connection, there is an identifier of its current serving RNC, which is denoted as SRNC identifier. The SRNC identifier together with S-RNTI is a unique identifier of the RRC connection within PLMN. The combination of SRNC identifier and S-RNTI is referred to as U-RNTI (UTRAN Radio Network Temporary Identity), which is used on the radio interface.

C-RNTI for an UE is allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC. C-RNTI can be reallocated when a UE accesses a new cell with the cell update procedure.

DSCH-RNTI for an UE is allocated by controlling RNC when a DSCH channel is configured. DSCH-RNTI is unique within the cell carrying the DSCH.

Usage of UE identifiers

U-RNTI is allocated to an UE having a RRC connection. It identifies the UE within UTRAN and is used as a UE identifier in cell update, URA update, RRC connection reestablishment and (UTRAN originated) paging messages and associated responses on the radio interface. The SRNC identifier within the U-RNTI is used by the Controlling RNC to route the received uplink messages towards the Serving RNC.

C-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on the radio interface.

DSCH-RNTI is used as an UE identifier for DTCH and DCCH in downlink when mapped onto DSCH transport channel.

NAS identifiers are used as the UE identifier in the initial access CCCH message on the radio interface.

6.2 UE connection to UTRAN

The different levels of UE connection to UTRAN are listed below:

- No signalling connection exist
  The UE has no relation to UTRAN, only to CN. For data transfer, a signalling connection has to be established.

- Signalling connection exist
  There is a RRC connection between UE and UTRAN. The UE position can be known on different levels:

  - UTRAN Registration Area (URA) level
    The UE position is known on UTRAN registration area level. URA is a specified set of cell, which can be identified on the BCCH.

  - Cell level
    The UE position is known on cell level. Different channel types can be used for data transfer:

    - Common transport channels (RACH, FACH, CPCH, DSCH);

- Dedicated transport channels (DCH).

7 UE modes

Two modes of operation are currently defined for the UE, idle mode and connected mode [5, 6].

After power on, the UE stays in idle mode until it transmits a request to establish an RRC connection. In idle mode the UE is identified by non-access stratum identities such as IMSI, TMSI and P-TMSI. In addition, the UTRAN has no own information about the individual idle mode UEs, and can only address e.g. all UEs in a cell or all UEs monitoring a specific paging occasion.

The connected mode is entered when the RRC connection is established. A RRC connection is established between the UE and a RNC called SRNC. The UE is assigned a radio network temporary identity (U-RNTI and possibly in addition C-RNTI or DSCH-RNTI) to be used as UE identity on common transport channels. RRC connection is within a UTRAN identified with the U-RNTI.

The UE leaves the connected mode and returns to idle mode when the RRC connection is released or at RRC connection failure.

Reception of SMS cell broadcast can be done in both idle and connected mode.

CR-Form-v5.1

CHANGE REQUEST

⌘	**25.301** CR **064**	⌘**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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Introduction of DSCH-RNTI	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 13th- May 2002

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)
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: ⌘	DSCH-RNTI is missing from the current version of the specification	
Summary of change: ⌘	DSCH-RNTI is added	
Consequences if not approved: ⌘	Incomplete specification	

Clauses affected: ⌘	6.1, 7	
Other specs ⌘	☐ Other core specifications ⌘	25.301 v3.9.0, CR 063
affected:	☐ Test specifications	25.301 v5.0.0, CR 065
	☐ 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.

6   User Identification and RRC Connection Mobility

6.1   UE identification on the radio interface

A Radio Network Temporary Identity (RNTI) is used as an UE identifier on RACH/FACH, RACH+CPCH/FACH or, for FDD mode, also on DSCH by the MAC protocol, or on PCH by the RRC, when a RRC connection exists.

Definition of UE identifiers

Sevreral ~~Two~~ types of RNTIs exist. One is used within the Serving RNC and it is denoted by Serving RNC RNTI (S-RNTI), ~~the~~ other is used within a cell controlled by a CRNC, when applicable, and it is denoted by Cell RNTI (C-RNTI). The third type denoted DSCH-RNTI of an UE is used within a cell controlled by a CRNC when a DSCH is allocated.

S-RNTI is allocated for all UEs having a RRC connection. It is allocated by the Serving RNC and it is unique within the Serving RNC. S-RNTI is reallocated always when the Serving RNC for the RRC connection is changed and deallocated when the RRC connection is released.

In addition for each UE having an RRC connection, there is an identifier of its current serving RNC, which is denoted as SRNC identifier. The SRNC identifier together with S-RNTI is a unique identifier of the RRC connection within PLMN. The combination of SRNC identifier and S-RNTI is referred to as U-RNTI (UTRAN Radio Network Temporary Identity), which is used on the radio interface.

C-RNTI for an UE is allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC. C-RNTI can be reallocated when a UE accesses a new cell with the cell update procedure.

DSCH-RNTI for an UE is allocated by controlling RNC when a DSCH channel is configured. DSCH-RNTI is unique within the cell carrying the DSCH.

Usage of UE identifiers

U-RNTI is allocated to an UE having a RRC connection. It identifies the UE within UTRAN and is used as a UE identifier in cell update, URA update, RRC connection reestablishment and (UTRAN originated) paging messages and associated responses on the radio interface. The SRNC identifier within the U-RNTI is used by the Controlling RNC to route the received uplink messages towards the Serving RNC.

C-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on the radio interface.

DSCH-RNTI is used as an UE identifier for DTCH and DCCH in downlink when mapped onto DSCH transport channel.

NAS identifiers are used as the UE identifier in the initial access CCCH message on the radio interface.

6.2   UE connection to UTRAN

The different levels of UE connection to UTRAN are listed below:

- No signalling connection exist
  The UE has no relation to UTRAN, only to CN. For data transfer, a signalling connection has to be established.

- Signalling connection exist
  There is a RRC connection between UE and UTRAN. The UE position can be known on different levels:

  - UTRAN Registration Area (URA) level
    The UE position is known on UTRAN registration area level. URA is a specified set of cell, which can be identified on the BCCH.

  - Cell level
    The UE position is known on cell level. Different channel types can be used for data transfer:

- Common transport channels (RACH, FACH, CPCH, DSCH);

- Dedicated transport channels (DCH).

7   UE modes

Two modes of operation are currently defined for the UE, idle mode and connected mode [5, 6].

After power on, the UE stays in idle mode until it transmits a request to establish an RRC connection. In idle mode the UE is identified by non-access stratum identities such as IMSI, TMSI and P-TMSI. In addition, the UTRAN has no own information about the individual idle mode UEs, and can only address e.g. all UEs in a cell or all UEs monitoring a specific paging occasion.

The connected mode is entered when the RRC connection is established. A RRC connection is established between the UE and a RNC called SRNC. The UE is assigned a radio network temporary identity (U-RNTI and possibly in addition C-RNTI or DSCH-RNTI) to be used as UE identity on common transport channels. RRC connection is within a UTRAN identified with the U-RNTI.

The UE leaves the connected mode and returns to idle mode when the RRC connection is released or at RRC connection failure.

Reception of SMS cell broadcast can be done in both idle and connected mode.

	CR-Form-v5.1

CHANGE REQUEST

⌘   **25.301** CR **065**   ⌘**rev**   **-**   ⌘   Current version: **5.0.0**   ⌘

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

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

Title:	⌘	Introduction of DSCH-RNTI
Source:	⌘	TSG-RAN WG2
Work item code:	⌘ TEI	***Date:*** ⌘ 13th- May 2002

Category: ⌘   **A**   ***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)

Reason for change:	⌘	DSCH-RNTI is missing from the current version of the specification
Summary of change:	⌘	DSCH-RNTI is added
Consequences if not approved:	⌘	Incomplete specification

Clauses affected:	⌘	6.1, 7

Other specs	⌘	☐ Other core specifications	⌘ 25.301 v3.9.0, CR 063
affected:		☐ Test specifications	25.301 v4.2.0, CR 064
		☐ 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.

6   User Identification and RRC Connection Mobility

6.1   UE identification on the radio interface

A Radio Network Temporary Identity (RNTI) is used as an UE identifier on RACH/FACH, RACH+CPCH/FACH or, for FDD mode, also on DSCH by the MAC protocol, or on PCH by the RRC, when a RRC connection exists.

Definition of UE identifiers

Several ~~Two~~ types of RNTIs exist. One is used within the Serving RNC and it is denoted by Serving RNC RNTI (S-RNTI), ~~the~~ other is used within a cell controlled by a CRNC, when applicable, and it is denoted by Cell RNTI (C-RNTI). The third type denoted DSCH-RNTI of an UE is used within a cell controlled by a CRNC when a DSCH is allocated.

S-RNTI is allocated for all UEs having a RRC connection. It is allocated by the Serving RNC and it is unique within the Serving RNC. S-RNTI is reallocated always when the Serving RNC for the RRC connection is changed and deallocated when the RRC connection is released.

In addition for each UE having an RRC connection, there is an identifier of its current serving RNC, which is denoted as SRNC identifier. The SRNC identifier together with S-RNTI is a unique identifier of the RRC connection within PLMN. The combination of SRNC identifier and S-RNTI is referred to as U-RNTI (UTRAN Radio Network Temporary Identity), which is used on the radio interface.

C-RNTI for an UE is allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC. C-RNTI can be reallocated when a UE accesses a new cell with the cell update procedure.

DSCH-RNTI for an UE is allocated by controlling RNC when a DSCH channel is configured. DSCH-RNTI is unique within the cell carrying the DSCH.

Usage of UE identifiers

U-RNTI is allocated to an UE having a RRC connection. It identifies the UE within UTRAN and is used as a UE identifier in cell update, URA update, RRC connection reestablishment and (UTRAN originated) paging messages and associated responses on the radio interface. The SRNC identifier within the U-RNTI is used by the Controlling RNC to route the received uplink messages towards the Serving RNC.

C-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on the radio interface.

DSCH-RNTI is used as an UE identifier for DTCH and DCCH in downlink when mapped onto DSCH transport channel.

NAS identifiers are used as the UE identifier in the initial access CCCH message on the radio interface.

6.2   UE connection to UTRAN

The different levels of UE connection to UTRAN are listed below:

- No signalling connection exist
  The UE has no relation to UTRAN, only to CN. For data transfer, a signalling connection has to be established.

- Signalling connection exist
  There is a RRC connection between UE and UTRAN. The UE position can be known on different levels:

  - UTRAN Registration Area (URA) level
    The UE position is known on UTRAN registration area level. URA is a specified set of cell, which can be identified on the BCCH.

  - Cell level
    The UE position is known on cell level. Different channel types can be used for data transfer:

- Common transport channels (RACH, FACH, CPCH, DSCH, HS-DSCH);

- Dedicated transport channels (DCH).

7   UE modes

Two modes of operation are currently defined for the UE, idle mode and connected mode [5, 6].

After power on, the UE stays in idle mode until it transmits a request to establish an RRC connection. In idle mode the UE is identified by non-access stratum identities such as IMSI, TMSI and P-TMSI. In addition, the UTRAN has no own information about the individual idle mode UEs, and can only address e.g. all UEs in a cell or all UEs monitoring a specific paging occasion.

The connected mode is entered when the RRC connection is established. A RRC connection is established between the UE and a RNC called SRNC. The UE is assigned a radio network temporary identity (U-RNTI and possibly in addition C-RNTI or DSCH-RNTI) to be used as UE identity on common transport channels. RRC connection is within a UTRAN identified with the U-RNTI.

The UE leaves the connected mode and returns to idle mode when the RRC connection is released or at RRC connection failure.

Reception of SMS cell broadcast can be done in both idle and connected mode.