TSGS#27(05) 0055

Source: **SA1**

Title: **CRs to 21.905 on Introduction of RAN Information Management (Rel-5, Rel-6)**

Document for: **Approval**

Agenda Item: **7.1.3**

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-27	SP-050055	21.905	060	-	Rel-5	F	Introduction of RAN Information Management	5.8.0	5.9.0	S1-050142
SP-27	SP-050055	21.905	061	-	Rel-6	A	Introduction of RAN Information Management	6.7.0	6.8.0	S1-050143

TSG-SA WG1 #27 **S1-050142**
Cape Town, South Africa, 17-21.01.2005 **Agenda Item:**

CR-Form-v7

CHANGE REQUEST

⌘ **21.905** **CR** **060** ⌘ **rev** **-** ⌘ Current version: **5.8.0** ⌘

*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:	⌘	Introduction of RAN Information Management
Source:	⌘	SA1 (Siemens)
Work item code:	⌘	TEI5
Date:	⌘	17/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

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

Use one of the following releases:

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

Reason for change:	⌘	New abbreviation RIM
Summary of change:	⌘	Introduction of RIM in chapter 3 and 4
Consequences if not approved:	⌘	Confusion by non-initiated persons, risk of multiple use of the abbreviation

Clauses affected:	⌘	8.1.5

		Y	N		
Other specs affected:	⌘		**N**	Other core specifications	⌘
			N	Test specifications	
			N	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.

3 Terms and definitions

R

Radio access bearer: The service that the access stratum provides to the non-access stratum for transfer of user data between User Equipment and CN.

Radio access bearer: The service that the access stratum provides to the non-access stratum for transfer of user data between User Equipment and CN.

Radio Access Mode: Mode of the cell, FDD or TDD.

Radio Access Network Application Part: Radio Network Signalling over the Iu.

Radio Access Network Information Management: Functionality supporting the exchange of information, via the Core Network, between peer application entities located in a GERAN or in a UTRAN access network.

Radio Access Technology: UTRA, GERAN etc.

Radio Bearer: The service provided by the Layer 2 for transfer of user data between User Equipment and UTRAN.

Radio frame: A radio frame is a numbered time interval of 10 ms duration used for data transmission on the radio physical channel. A radio frame is divided into 15 time slots of 0.666 ms duration. The unit of data that is mapped to a radio frame (10 ms time interval) may also be referred to as radio frame.

Radio interface: The "radio interface" is the tetherless interface between User Equipment and a UTRAN access point. This term encompasses all the functionality required to maintain such interfaces.

Radio link: A "radio link" is a logical association between single User Equipment and a single UTRAN access point. Its physical realisation comprises one or more radio bearer transmissions.

Radio link addition: The procedure where a new radio link is added to the active set.

Radio Link Control: A sublayer of radio interface layer 2 providing transparent, unacknowledged and acknowledged data transfer service.

Radio link removal: The procedure where a radio link is removed from the active set.

Radio Link Set: A set of one or more Radio Links that has a common generation of Transmit Power Control (TPC) commands in the DL

Radio Network Controller: This equipment in the RNS is in charge of controlling the use and the integrity of the radio resources.

Radio Network Subsystem Application Part: Radio Network Signalling over the Iur.

Radio Network Subsystem: Either a full network or only the access part of a UTRAN offering the allocation and the release of specific radio resources to establish means of connection in between an UE and the UTRAN.
A Radio Network Subsystem is responsible for the resources and transmission/reception in a set of cells.

Radio Network Temporary Identifier: A Radio Network Temporary Identifier is a generic term of an identifier for a UE when an RRC connection exists. Following types of RNTI are defined: Cell RNTI (C-RNTI), Serving RNC RNTI (S-RNTI), UTRAN RNTI (U-RNTI) and GERAN RNTI (G-RNTI).

Radio Resource Control: A sublayer of radio interface Layer 3 existing in the control plane only which provides information transfer service to the non-access stratum. RRC is responsible for controlling the configuration of radio interface Layers 1 and 2.

Radio system: the selected 2nd or 3rd generation radio access technology, eg UTRAN or GERAN.

Rated Output Power: For FDD BS, rated output power is the mean power level per carrier that the manufacturer has decared to be available at the antenna connector. For TDD BS rated output power is the mean power level per carrier over an active timeslot that the manufacturer has declared to be available at the antenna connector.

Real time: Time, typically in number of seconds, to perform the on-line mechanism used for fraud control and cost control.

Received Signal Code Power: Given only signal power is received, the average power of the received signal after despreading and combining.

Receiver Antenna Gain (dBi): The maximum gain of the receiver antenna in the horizontal plane (specified as dB relative to an isotropic radiator).

Receiver Noise Figure (dB): Receiver noise figure is the noise figure of the receiving system referenced to the receiver input.

Receiver Sensitivity (dBm): This is the signal level needed at the receiver input that just satisfies the required Eb/(No+Io).

Recipient network: The network which receives the number in the porting process. This network becomes the subscription network when the porting process is complete.

Record: A string of bytes within an EF handled as a single entity (see clause 6).

Record number: The number, which identifies a record within an EF.

Record pointer: The pointer, which addresses one record in an EF.

Reference configuration: A combination of functional groups and reference points that shows possible network arrangements (source: ITU-T I.112).

Reference point: A conceptual point at the conjunction of two non-overlapping functional groups (source: ITU-T I.112).

Regionally Provided Service: A service entitlement to only certain geographical part(s) of a PLMN, as controlled by the network operator.

Registration: This is the process of camping on a cell of the PLMN and doing any necessary LRs.

Registered PLMN (RPLMN): This is the PLMN on which the UE has performed a location registration successfully.

Registration Area: A (NAS) registration area is an area in which the UE may roam without a need to perform location registration, which is a NAS procedure.

Relay: Terminal devices capable of ODMA relay communications.

Relay/Seed Gateway: Relay or Seed that communicates with the UTRAN, in either TDD or FDD mode.

Relaylink: Relaylink is a communications link between two ODMA relay nodes.

Release 99: A particular version of the 3GPP System standards produced by the 3GPP project. Also: Release 4, Release 5, Release 6 etc..

Repeater: A "repeater" is a radio transceiver used to extend the transmission of a base station beyond its normal range.

Requested QoS: a QoS profile is requested at the beginning of a QoS session. QoS modification requests are also possible during the lifetime of a QoS session.

Required Eb/(No+Io) (dB): The ratio between the received energy per information bit to the total effective noise and interference power density needed to satisfy the quality objectives.

Residual error rate: A parameter describing service accuracy. The frequency of lost SDUs, and of corrupted or duplicated network SDUs delivered at the user-network interface.

Retrieval service: An interactive service which provides the capability of accessing information stored in data base centres. The information will be sent to the user on demand only. The information is retrieved on an individual basis, i.e., the time at which an information sequence is to start is under the control of the user (source ITU-T I.113).

Roaming: The ability for a user to function in a serving network different from the home network.

Root directory: Obsolete term for Master File.

Root Relay: ODMA relay node where communications originate or terminate.

RRC Connection: A point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively. An UE has either zero or one RRC connection.

4 Abbreviations

R

R	Value of Reduction of the MS transmitted RF power relative to the maximum allowed output power of the highest power class of MS (A)
R-APDU	Response APDU
R-Block	Receive-ready Block
R-SGW	Roaming Signalling Gateway
R-TPDU	Response TPDU
R99	Release 1999
RA	Routing Area
	Random mode request information field
RAB	Radio Access Bearer
	Random Access Burst
RAC	Routing Area Code
RACH	Random Access Channel
RADIUS	Remote Authentication Dial In User Service
RAI	Routing Area Identity
RAN	Radio Access Network
RANAP	Radio Access Network Application Part
RAND	RANDom number (used for authentication)
RAT	Radio Access Technology
RAU	Routing Area Update
RB	Radio Bearer
RBER	Residual Bit Error Ratio
RDF	Resource Description Format
RDI	Restricted Digital Information
REC	RECommendation
REJ	REJect(ion)
REL	RELease
Rel-4	Release 4
Rel-5	Release 5
REQ	REQuest
RF	Radio Frequency
RFC	Request For Comments
	Radio Frequency Channel
RFCH	Radio Frequency CHannel
RFE	Routing Functional Identity
RFN	Reduced TDMA Frame Number
RFU	Reserved for Future Use
RIM	RAN Information Management
RL	Radio Link
RLC	Radio Link Control
RLCP	Radio Link Control Protocol
RLP	Radio Link Protocol
RLR	Receiver Loudness Rating
RLS	Radio Link Set

RMS	Root Mean Square (value)
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTABLE	Table of 128 integers in the hopping sequence
RNTI	Radio Network Temporary Identity
RPLMN	Registered Public Land Mobile Network
RPOA	Recognised Private Operating Agency
RR	Radio Resources
RRC	Radio Resource Control
RRM	Radio Resource Management
RSCP	Received Signal Code Power
RSE	Radio System Entity
RSL	Radio Signalling Link
RSSI	Received Signal Strength Indicator
RST	Reset
RSVP	Resource ReserVation Protocol
RSZI	Regional Subscription Zone Identity
RT	Real Time
RTE	Remote Terminal Emulator
RTP	Real Time Protocol
RU	Resource Unit
RWB	Resolution Bandwidth
RX	Receive
RXLEV	Received signal level
RXQUAL	Received Signal Quality

TSG-SA WG1 #27 **S1-050143**
Cape Town, South Africa, 17th to 21st January 2005 **Agenda Item:**

CR-Form-v7

CHANGE REQUEST

⌘ **21.905** **CR** **061** ⌘**rev** **-** ⌘ Current version: **6.7.0** ⌘

*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:	⌘	Introduction of RAN Information Management
Source:	⌘	SA1 (Siemens)
Work item code:	⌘	TEI5
Date:	⌘	17/01/2005
Category:	⌘	**A**
Release:	⌘	Rel-6

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

Use one of the following releases:

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

Reason for change:	⌘	New abbreviation RIM
Summary of change:	⌘	Introduction of RIM in chapter 3 and 4
Consequences if not approved:	⌘	Confusion by non-initiated persons, risk of multiple use of the abbreviation

Clauses affected:	⌘	8.1.5

		Y	N		
Other specs affected:	⌘		**N**	Other core specifications	⌘
			N	Test specifications	
			N	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.

3 Terms and definitions

R

Radio access bearer: The service that the access stratum provides to the non-access stratum for transfer of user data between User Equipment and CN.

Radio Access Mode: Mode of the cell, FDD or TDD.

Radio Access Network Information Management: Functionality supporting the exchange of information, via the Core Network, between peer application entities located in a GERAN or in a UTRAN access network.

RAN sharing: Two or more CN operators share the same RAN, i.e. a RAN node (RNC or BSC) is connected to multiple CN nodes (SGSNs and MSC/VLRs) belonging to different CN operators.

Radio Access Network Application Part: Radio Network Signalling over the Iu.

Radio Access Network Operator: Operator that offers radio access to one or more core network operators.

Radio Access Technology: UTRA, GERAN etc.

Radio Bearer: The service provided by the Layer 2 for transfer of user data between User Equipment and UTRAN.

Radio frame: A radio frame is a numbered time interval of 10 ms duration used for data transmission on the radio physical channel. A radio frame is divided into 15 time slots of 0.666 ms duration. The unit of data that is mapped to a radio frame (10 ms time interval) may also be referred to as radio frame.

Radio interface: The "radio interface" is the tetherless interface between User Equipment and a UTRAN access point. This term encompasses all the functionality required to maintain such interfaces.

Radio link: A "radio link" is a logical association between single User Equipment and a single UTRAN access point. Its physical realisation comprises one or more radio bearer transmissions.

Radio link addition: The procedure where a new radio link is added to the active set.

Radio Link Control: A sublayer of radio interface layer 2 providing transparent, unacknowledged and acknowledged data transfer service.

Radio link removal: The procedure where a radio link is removed from the active set.

Radio Link Set: A set of one or more Radio Links that has a common generation of Transmit Power Control (TPC) commands in the DL

Radio Network Controller: This equipment in the RNS is in charge of controlling the use and the integrity of the radio resources.

Radio Network Subsystem Application Part: Radio Network Signalling over the Iur.

Radio Network Subsystem: Either a full network or only the access part of a UTRAN offering the allocation and the release of specific radio resources to establish means of connection in between an UE and the UTRAN.
A Radio Network Subsystem is responsible for the resources and transmission/reception in a set of cells.

Radio Network Temporary Identifier: A Radio Network Temporary Identifier is a generic term of an identifier for a UE when an RRC connection exists. Following types of RNTI are defined: Cell RNTI (C-RNTI), Serving RNC RNTI (S-RNTI), UTRAN RNTI (U-RNTI) and GERAN RNTI (G-RNTI).

Radio Resource Control: A sublayer of radio interface Layer 3 existing in the control plane only which provides information transfer service to the non-access stratum. RRC is responsible for controlling the configuration of radio interface Layers 1 and 2.

Radio system: the selected 2nd or 3rd generation radio access technology, eg UTRAN or GERAN.

Rated Output Power: For FDD BS, rated output power is the mean power level per carrier that the manufacturer has decared to be available at the antenna connector. For TDD BS rated output power is the mean power level per carrier over an active timeslot that the manufacturer has declared to be available at the antenna connector.

Real time: Time, typically in number of seconds, to perform the on-line mechanism used for fraud control and cost control.

Received Signal Code Power: Given only signal power is received, the average power of the received signal after despreading and combining.

Receiver Antenna Gain (dBi): The maximum gain of the receiver antenna in the horizontal plane (specified as dB relative to an isotropic radiator).

Receiver Noise Figure (dB): Receiver noise figure is the noise figure of the receiving system referenced to the receiver input.

Receiver Sensitivity (dBm): This is the signal level needed at the receiver input that just satisfies the required Eb/(No+Io).

Recipient network: The network which receives the number in the porting process. This network becomes the subscription network when the porting process is complete.

Record: A string of bytes within an EF handled as a single entity.

Record number: The number, which identifies a record within an EF.

Record pointer: The pointer, which addresses one record in an EF.

Reference configuration: A combination of functional groups and reference points that shows possible network arrangements (source: ITU-T I.112).

Reference point: A conceptual point at the conjunction of two non-overlapping functional groups (source: ITU-T I.112).

Regionally Provided Service: A service entitlement to only certain geographical part(s) of a PLMN, as controlled by the network operator.

Registration: This is the process of camping on a cell of the PLMN and doing any necessary LRs.

Registered PLMN (RPLMN): This is the PLMN on which the UE has performed a location registration successfully.

Registration Area: A (NAS) registration area is an area in which the UE may roam without a need to perform location registration, which is a NAS procedure.

Relay: Terminal devices capable of ODMA relay communications.

Relay/Seed Gateway: Relay or Seed that communicates with the UTRAN, in either TDD or FDD mode.

Relaylink: Relaylink is a communications link between two ODMA relay nodes.

Release 99: A particular version of the 3GPP System standards produced by the 3GPP project. Also: Release 4, Release 5, Release 6 etc..

Repeater: A "repeater" is a radio transceiver used to extend the transmission of a base station beyond its normal range.

Requested QoS: a QoS profile is requested at the beginning of a QoS session. QoS modification requests are also possible during the lifetime of a QoS session.

Required Eb/(No+Io) (dB): The ratio between the received energy per information bit to the total effective noise and interference power density needed to satisfy the quality objectives.

Residual error rate: A parameter describing service accuracy. The frequency of lost SDUs, and of corrupted or duplicated network SDUs delivered at the user-network interface.

Retrieval service: An interactive service which provides the capability of accessing information stored in data base centres. The information will be sent to the user on demand only. The information is retrieved on an individual basis, i.e., the time at which an information sequence is to start is under the control of the user (source ITU-T I.113).

Roaming: The ability for a user to function in a serving network different from the home network. The serving network could be a shared network operated by two or more network operator.

Root directory: Obsolete term for Master File.

Root Relay: ODMA relay node where communications originate or terminate.

RRC Connection: A point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively. An UE has either zero or one RRC connection.

4 Abbreviations

R

R	Value of Reduction of the MS transmitted RF power relative to the maximum allowed output power of the highest power class of MS (A)
R-APDU	Response APDU
R-Block	Receive-ready Block
R-SGW	Roaming Signalling Gateway
R-TPDU	Response TPDU
R99	Release 1999
RA	Routing Area
	Random mode request information field
RAB	Radio Access Bearer
	Random Access Burst
RAC	Routing Area Code
RACH	Random Access Channel
RADIUS	Remote Authentication Dial In User Service
RAI	Routing Area Identity
RAN	Radio Access Network
RANAP	Radio Access Network Application Part
RAND	RANDom number (used for authentication)
RAT	Radio Access Technology
RAU	Routing Area Update
RB	Radio Bearer
RBER	Residual Bit Error Ratio
RDF	Resource Description Format
RDI	Restricted Digital Information
REC	RECommendation
REJ	REJect(ion)
REL	RELease
Rel-4	Release 4
Rel-5	Release 5
REQ	REQuest
RES	user RESponse
	64-bit signed RESponse that is the output of the function f2 in a 3G AKA
RF	Radio Frequency
RFC	Request For Comments
	Radio Frequency Channel
RFCH	Radio Frequency CHannel
RFE	Routing Functional Identity
RFN	Reduced TDMA Frame Number
RFU	Reserved for Future Use
RIM	RAN Information Management
RL	Radio Link
RLC	Radio Link Control
RLCP	Radio Link Control Protocol

RLP	Radio Link Protocol
RLR	Receiver Loudness Rating
RLS	Radio Link Set
RMS	Root Mean Square (value)
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTABLE	Table of 128 integers in the hopping sequence
RNTI	Radio Network Temporary Identity
RPLMN	Registered Public Land Mobile Network
RPOA	Recognised Private Operating Agency
RR	Radio Resources
RRC	Radio Resource Control
RRM	Radio Resource Management
RSA	Algorithm invented by Rivest, Adleman and Shamir
RSCP	Received Signal Code Power
RSE	Radio System Entity
RSL	Radio Signalling Link
RSSI	Received Signal Strength Indicator
RST	Reset
RSVP	Resource ReserVation Protocol
RSZI	Regional Subscription Zone Identity
RT	Real Time
RTE	Remote Terminal Emulator
RTP	Real Time Protocol
RU	Resource Unit
RWB	Resolution Bandwidth
RX	Receive
RXLEV	Received signal level
RXQUAL	Received Signal Quality