

CR-Form-v7.1

CHANGE REQUEST

№ **25.460 CR CR001** № rev **2** № Current version: **6.0.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Minor Corrections and editorial changes to 25.460 according to RAN3#44		
Source:	№ RAN3		
Work item code:	№ RANimp-TiltAnt	Date:	№ 16/11/2004
Category:	№ F 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-6 Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

Reason for change:	№ Missing abbreviations and editorial changes for a cleaner and more precise specification.
Summary of change:	№ Abbreviations added. Allignment of figure 4.1 with reference [6]. Re-structuring of section 5. Rev. 1: inclusion of agreements made offline during RAN3#45 Rev. 2: further correction of figure 4.1
Consequences if not approved:	№ Incomplete and wrong specification.

Clauses affected:	№ 2, 3, 4.4, 5						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	№	
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Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
Other comments:	№						

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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.

2 References

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-	[1]	3GPP TS 25.401: "UTRAN Overall Description".
	[2]	3GPP TS 25.461: "UTRAN Iuant Interface: Layer 1".
	[3]	3GPP TS 25.462: "UTRAN Iuant Interface: Signalling Transport".
	[4]	3GPP TS 25.463: "UTRAN Iuant Interface: Remote Electrical Tilting (RET) Antennas Application Part (RETAP) Signalling".
	[5]	ISO/IEC 13239 (2nd Edition, March 2000): "Information Technology – Telecommunications and information exchange between systems – High-level data link control (HDLC) procedures".
	[6]	3GPP TS 25.442: "UTRAN implementation-specific O&M transport".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

HDLC	High-Level Data Link Control
IP	Internet Protocol
O&M	Operations & Maintenance
OSI	Open Systems Interconnection
RET	Remote Electrical Tilting
RETAP	Remote Electrical Tilting Application Part
UMTS	Universal Mobile Telecommunications System

***** Unchanged Parts omitted *****

4.4 Iuant interface characteristics

The Iuant interface has a protocol structure as shown below in figure 4.1 ~~for both Implementation Specific O&M Transport options.~~

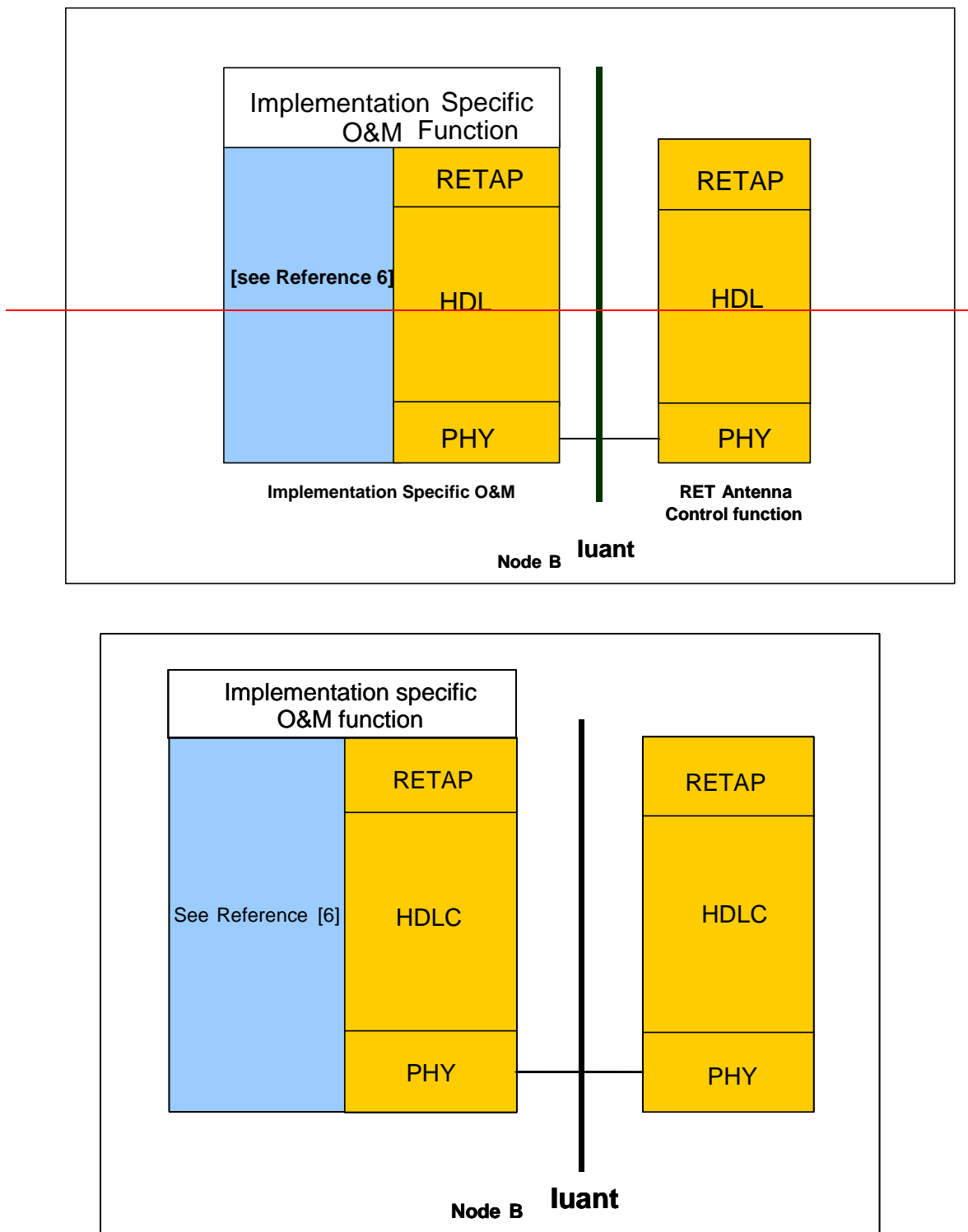


Figure 4.1: Protocol Structure for Iuant interface

As the Iuant and the Implementation Specific O&M are different interfaces with e.g. different addressing schemes a mediation function is needed. This mediation function uses on one side a protocol that uses the implementation specific O&M bearer (e.g. IP) and on the other side the Iuant protocol.

5 Functions of the Iuant interface protocols

5.1 Physical layer functions

The physical layer provides a multi drop broadcast link between the primary device (Node B) and all secondary devices (RET antennas). Any message transmitted will be received by all other devices. If two devices transmit at the same time, their messages will be garbled.

The connection requires a half duplex communication, which requires an appropriate ~~addressing~~ scheme for the timing and access control of the connection.

***** Unchanged Parts omitted *****

5.3 Application layer functions

The list of functions on the Iuant interface is the following:

- Control of RET Antennas;
- Application software and configuration data download;
- Alarm Reporting:-
- Operator specific data storage.

5.3.14 Control of RET Antennas

A RET device provides means to adjust the electrical tilt of one or multiple antennas. ~~The~~ ~~is~~ set of procedures to control RET antennas provides ~~a~~ means ~~of remotely to~~ controlling the electrical tilt of one or more RET ~~devices~~ antennas remotely.

5.3.25 Application Software ~~software and configuration data~~ download

The interface provides means for downloading new application software and configuration data to a secondary device.

~~The~~ support of application software download to a secondary device is optional. If a secondary device supports application software download, it may do so using the memory for two full software versions in parallel or it may enter a boot mode during the download of the software. In either case, the secondary device shall reset itself and start running the new application software automatically after the completed download. If boot mode is used, a limited set of commands and return codes in the application layer is allowed during that mode. The physical layer and the transport layer must maintain full functionality also in boot mode.

5.3.36 Alarm reporting

The secondary device reports every change in error status after subscription for alarm reporting by transmitting ~~an~~ alarm messages to the primary device. Alarm information can also be interrogated in the application layer.

5.3.4 Operator specific data storage

The secondary device provides means for storage of operator specific data, e.g. inventory information.

***** End of Changes *****

CHANGE REQUEST

25.460 CR 2 # rev 2 # Current version: 6.0.0

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Update of Software Download description		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt	Date:	# 14/11/2004
Category:	# F	Release:	# Rel-6
	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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# Alignment of text to the introduction of state model in TS25.463		
Summary of change:	# Detailed and partly erroneous text is removed in Software Download Description.		
Consequences if not approved:	# Description of software download is inconsistent with the state model used.		

Clauses affected:	# 5.5									
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	# CR 3 for TS25.463
Y	N									
X										
	X									
	X									
Other comments:	#									

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5.5 Software download

The interface provides means for downloading new software to a secondary device. The support of ~~Software software~~ [Download download](#) to a secondary device is optional. If a secondary device supports software download, ~~it may do so using the memory for two full software versions in parallel or it may enter a boot mode during the download of the software. In either case, the secondary device~~ [it](#) shall reset itself and start running the new software automatically after the completed download. [Further details on the software download procedure \(e.g. the different states of the secondary device and the supported elementary procedures in these states\) are described in section 6.1 of \[4\].](#) ~~If boot mode is used, a limited set of commands and return codes in the application layer is allowed during that mode. The physical layer and the transport layer must maintain full functionality also in boot mode.~~

CHANGE REQUEST

25.461 CR 001 # rev - # Current version: 6.0.0

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# DC power supply distribution		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt	Date:	# 05/11/2004
Category:	# F	Release:	# Rel-6
	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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# The specification of DC supply don't handle a configuration with a separate RET modem.
Summary of change:	# Requirement for RET modem included. Additional DC reference point defined.
Consequences if not approved:	# Incomplete specification.

Clauses affected:	# 4.3 and 4.4						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X	#	
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Other comments:	#						

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4.3 Modem option

The connection to a RET control unit by way of a coaxial cable which is shared with DC supply and RF signals is provided by two modems, a BS modem and a RET modem. The BS modem shall be either connected to the antenna connector of the BS or integrated in the BS. It provides signal transmission to the RET modem and signal reception from the RET modem over the antenna feeder cable. The RET modem is located between antenna feeder cable and antenna. Modem configurations and reference points for modem characteristics are specified in figure 4.2 and figure 4.3. Unless otherwise stated, requirements in this section apply to BS modem and RET modem.

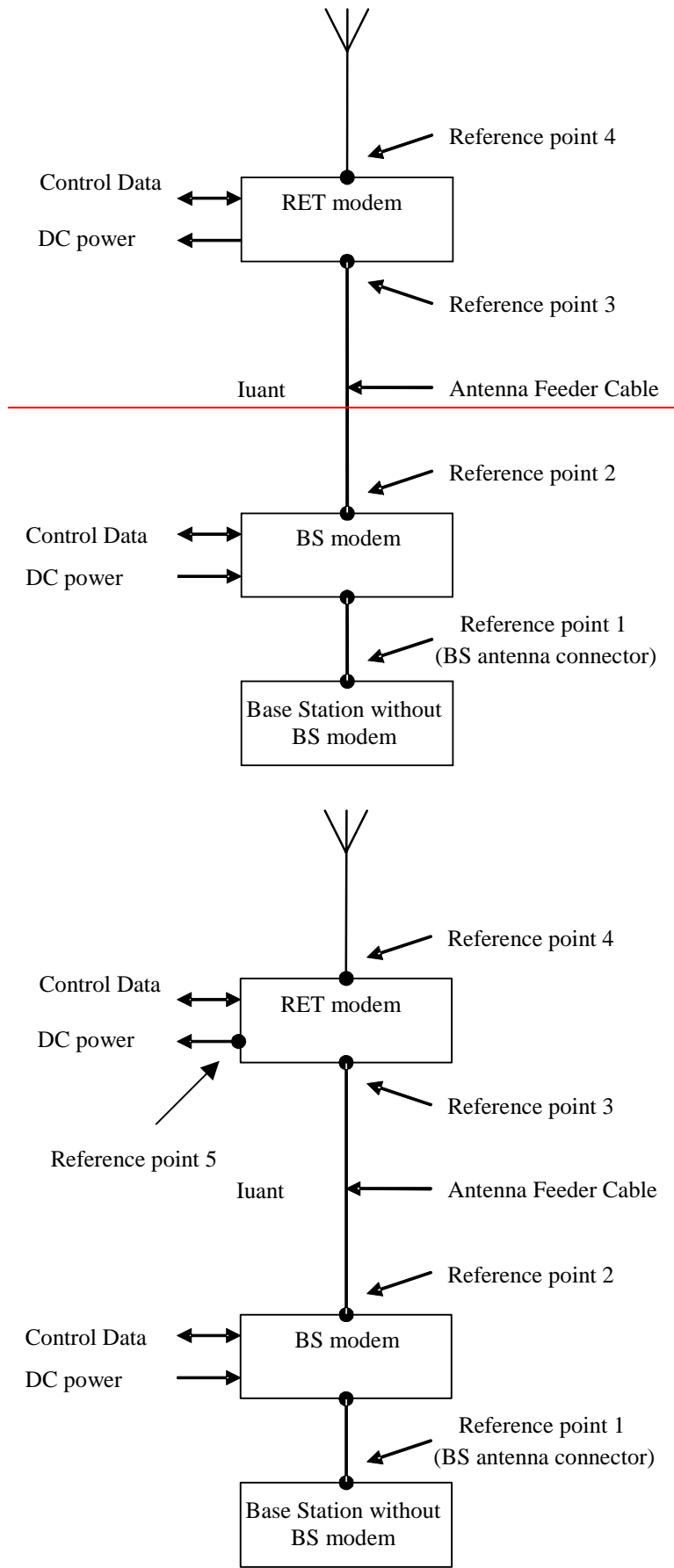


Figure 4.2: Modem configuration and modem reference points for base station without BS modem

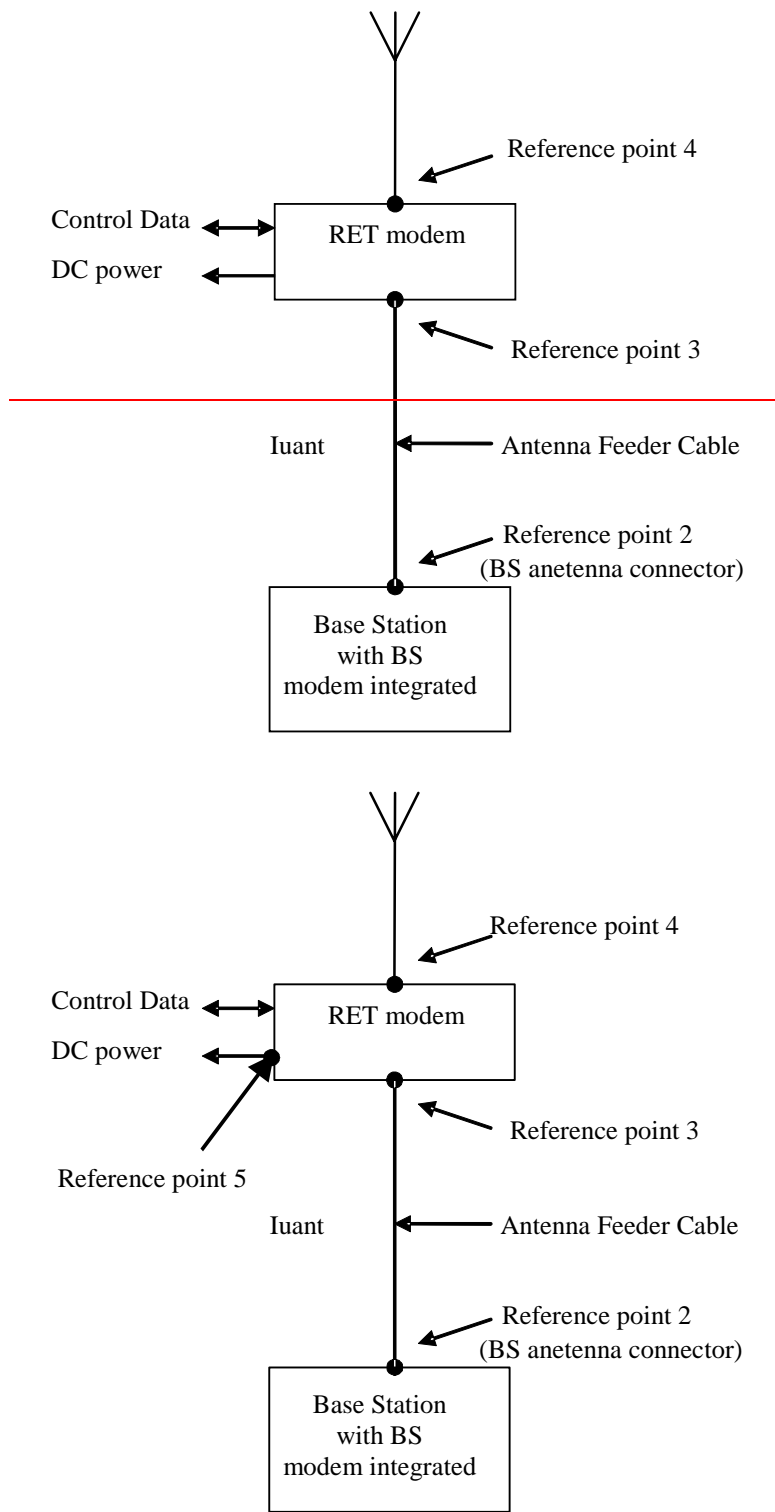


Figure 4.3: Modem configuration and modem reference points for base station with integrated BS modem

4.3.1 Interference with existing systems

The modem circuit shall be capable of managing its transmitting characteristic according to subclause 4.3.5.

4.3.1.1 Carrier frequency and frequency stability

The following carrier frequency shall be used for this application:

2.176 MHz \pm 100 ppm

4.3.1.2 Modem isolation and modem emissions

The BS modem shall provide at least 41 dB attenuation for frequencies below 400 MHz between reference point 2 and reference point 1 to protect the base station from emissions of the RET modem.

BS modem emissions at reference point 1 for frequencies below 400 MHz shall be at least 41 dB below the levels specified for the modem spectrum emission mask in subclause 4.3.5 to protect the base station from emissions of the BS modem.

The RET modem shall provide at least 41 dB attenuation for frequencies below 400 MHz between reference point 3 and reference point 4 to protect other radio systems from emission of the BS modem.

RET modem emissions at reference point 4 for frequencies below 400 MHz shall be at least 41 dB below the levels specified for the modem spectrum emission mask in subclause 4.4.5 to protect other radio systems from emission of the RET modem.

4.3.1.3 Modem intermodulation attenuation

BS modem and RET modem shall provide intermodulation attenuation of [TBD] at a interferer level of [TBD].

4.4 DC power supply

4.4.1 Power consumption

The DC supply requirements referes to reference points 3 and 5 in section 4.3~~The reference point for the DC supply shall be on the secondary device.~~

The RET control unit and a RET modem shall be able to operate with a DC supply voltage range: 10 V – 30 V.

The RET maximum power consumption shall be in operating mode < 15 W and in quiescent mode < 2 W.

A RET modem maximum power consumption shall be < 2 W.

A RET modem shall impose a voltage drop less than 2 Volt between reference point 3 and 5.

4.4.2 Conducted emission

The levels of generated conducted noise and ripple on DC Power supply shall be within the limits given in table 4.2.

Table 4.2: Noise and ripple

Item	Limit	Frequency	Remarks
RET operate	70 mV _{pp}	0.15 - 30 MHz	Only one operating unit a time
RET quiescent	20 mV _{pp}	0.15 - 30 MHz	

All RET units connected to a DC supply bus shall exhibit full performance up to the limit of 112 mV_{pp} total noise and ripple within 0.15 - 30 MHz.

CHANGE REQUEST

№ 25.461 CR 002 № rev 1 № Current version: 6.0.0 №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Improved demodulator characteristics specification		
Source:	№ RAN3		
Work item code:	№ RANimp-TiltAnt	Date:	№ 09/11/2004
Category:	№ F 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-6 Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

Reason for change:	№ The current specification is unclear.
Summary of change:	№ The range for which full performance for the demodulator (e.g. for 4.3.6) is required is defined. A treshold when the demodutor shall provide no output is defined.
Consequences if not approved:	№ Risk for poor or undefined performance at complex antenna configurations.

Clauses affected:	№ 4.3.5								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X	№ 	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Test specifications	#	X
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4.3.5 Demodulator characteristics

~~4.3.5.1 Threshold~~

~~Threshold: $-15\text{ dBm} \pm 3\text{ dB}$~~

The demodulator shall fulfil the requirement in section 4.3.6 for a carrier On level within +5 dBm to -12 dBm and a carrier Off level less than -18 dBm. The levels within -12 dBm to -18 dBm are undefined.

CHANGE REQUEST

25.461 CR 003 # rev - # Current version: 6.0.0

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Requirements missing for when the RS485 bus shall not be driven by the secondary device		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt Date: # 09/11/2004		
Category:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> # F 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. </td> <td style="width: 50%; vertical-align: top;"> Release: # Rel-6 Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7) </td> </tr> </table>	# F 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-6 Use <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)
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Reason for change:	# Missing requirements.
Summary of change:	# Requirements for when the bus shall be driven actively by the secondary station added. Also more importantly requirements for when the bus shall NOT be driven actively by the secondary station added. Background; Idle State Biasing on the primary side secures a defined state when the bus is undriven. When the primary or the secondary uses the bus it must be driven actively. The added requirement is fundamental to be able to design a working implementation for the primary.
Consequences if not approved:	# Risk for bus collisions between primary and secondary stations. Risk that the bus cannot be shared by additional secondary devices.

Clauses affected:	# 2, 4.2															
Other specs affected:	<table style="width: 100%; border: none;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">Y</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">N</td> <td style="padding: 2px;">#</td> <td style="padding: 2px;">Other core specifications</td> <td style="padding: 2px;">#</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">#</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="padding: 2px;">#</td> <td style="padding: 2px;">Test specifications</td> <td style="padding: 2px;">#</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">#</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="padding: 2px;">#</td> <td style="padding: 2px;">O&M Specifications</td> <td style="padding: 2px;">#</td> </tr> </table>	Y	N	#	Other core specifications	#	#	X	#	Test specifications	#	#	X	#	O&M Specifications	#
Y	N	#	Other core specifications	#												
#	X	#	Test specifications	#												
#	X	#	O&M Specifications	#												
Other comments:	# Based on R3-041340 presented at the RAN WG4 #44 updated after offline discussions.															

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[1] 3GPP TS 25.462: "UTRAN Iuant interface: Signalling transport".

[2] ISO/IEC 8482 (1993): "Information technology - Telecommunications and information exchange between systems - Twisted pair multipoint interconnections".

[x] [TIA/EIA TSB89: "Application guidelines for TIA/EIA-485-A"](#)

4.2 RS485 option

This option are constituted by a two wire bi-directional multi-drop configuration conforming to [2]. The mapping of mark/space to logical one and zero as referred to in [2] shall be according to figure 4.1.

The use of Idle-State Biasing (ISB), [also called idle-line failsafe in \[x\]](#), is mandatory and all secondary devices shall be capable of supporting its use. The bias voltages shall be applied by the primary station to any separate RS485 bus. The polarity of the idle-state bias is defined as a transmitted 1.

[The RS485 transmitter shall be set to drive the bus before the first startbit is sent and held active until the last stop bit is sent. The RS485 transmitter shall stop driving the bus within 20 bit-times after the last stop bit is sent.](#)

NOTE: If a RET modem is used ISB must be implemented by the RET modem.

CHANGE REQUEST

25.461 CR 4 # rev 1 # Current version: 6.0.0

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# RET DC power consumption modes		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt	Date:	# 18/11/2004
Category:	# F	Release:	# Rel-6
	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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# Unclear specification		
Summary of change:	# Definition of power consumption modes for RET devices.		
Consequences if not approved:	# Power consumption modes missing for classification of RETAP elementary procedures with respect to the power consumption.		

Clauses affected:	# 4.4.1 and 4.4.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	# CR9 for TS 25.463	
Y	N										
X											
	X										
	X										
Other comments:	#										

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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.

4.4 DC power supply

4.4.1 Power consumption

The reference point for the DC supply shall be on the secondary device.

The RET shall be able to operate with a DC supply voltage range: 10 V – 30 V.

The RET ~~has two maximum~~ power consumption ~~modes~~:

Table 4.x: Power consumption modes for RET

Power mode	Maximum power consumption
High	< 15 W
Low	< 2 W

~~shall be in operating mode < 15 W and in quiescent mode < 2 W.~~

4.4.2 Conducted emission

The levels of generated conducted noise and ripple on DC Power supply shall be within the limits given in table 4.2.

Table 4.2: Noise and ripple

Item	Limit	Frequency	Remarks
RET operate power mode High	70 mV _{pp}	0.15 - 30 MHz	Only one operating unit a time
RET quiescent power mode Low	20 mV _{pp}	0.15 - 30 MHz	

All RET units connected to a DC supply bus shall exhibit full performance up to the limit of 112 mV_{pp} total noise and ripple within 0.15 - 30 MHz.

CHANGE REQUEST

25.461 CR 5 # rev **-** # Current version: **6.0.0**

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Minor Corrections and editorial changes to 25.461		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt	Date:	# 10/11/2004
Category:	# F	Release:	# Rel-6
	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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# Minor corrections and editorial changes for cleaner and more precise specification.
Summary of change:	# Subclause 3.2 Symbols removed because it is not needed. Abbreviation "BTS" not used but instead "BS" is used in the specification. Clarification in the General clause. Clarification of idle bit coding figure 4.1, since a stop bit can not be "logical 0" or "carrier on". Clarification for the RS485 option: ISB is mandatory, so supporting of its use is duplication (of the wording) and is therefore removed. The Note is made in a normal style. Correction of two section numbers in subclause 4.3.1.2. Editorial corrections in subclauses 4.3.5 and 4.4.1.
Consequences if not approved:	# Incomplete, unclear or wrong specification.

Clauses affected:	# 3, 4.1, 4.2, 4.3.1.2, 4.3.6, 4.4.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	#	X	#	X	#	X		
Y	N										
#	X										
#	X										
#	X										
Other comments:	#										

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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.

3 Definitions, ~~symbols~~ and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

On-Off keying: A modulation system in which a carrier is switched between two states, ON and OFF.

Common Feeder Cable: Feeder cable where some antenna line devices (e.g. RET, TMA) are connected via the same feeder cable.

~~3.2 Symbols~~

~~void~~

3.32 Abbreviations

For the purposes of the present document, the following abbreviations apply:

BTS	Base Transceiver Station
DC	Direct Current
ISB	Idle-state biasing
OOK	On-Off-Keying
RET	Remote Electrical Tilt Unit
RF	Radio Frequency
TMA	Tower-Mounted Amplifier

4 Luant Layer 1

4.1 General

There are two layer 1 options:

- RS485 option: A screened multicore cable, which supports a conventional RS485 serial multi-drop bus.
- Modem option: A connection to a RET control unit by way of a coaxial cable which is shared with DC supply and RF signals.

Both layer 1 options support the connection of two-way serial data and DC power to the RET antenna device.

At least one of these two layer 1 options needs to be supported.

The default data rate for both layer 1 options shall be 9.6 kbps. Higher data rates of 38.4 kbps for both layer 1 options and 115.2 kbps only for the RS485 layer 1 option may optionally be supported. Each unit communicates on one of the three data rates, but different units on the same interface may use different data rates.

After any reset, a secondary station shall alternate between supported data rates. When alternating between data rates, the rate shall be held constant for 300 ms. After every ~~correctly received~~~~successful reception of a~~ device scan command, (see [1]) ~~independent of whether it matches or not~~, at ~~one of the supported~~ data rates, that data rate shall be held constant for 1.5 seconds. After successful reception of an address assignment ~~frame at a data rate~~, the secondary station shall use that data rate until it is reset.

Data rates:

9.6 kbps \pm 3 %

38.4 kbps ± 3 %

115.2 kbps ± 3 %

The format of the data octet shall be [as shown in figure 4.1](#):

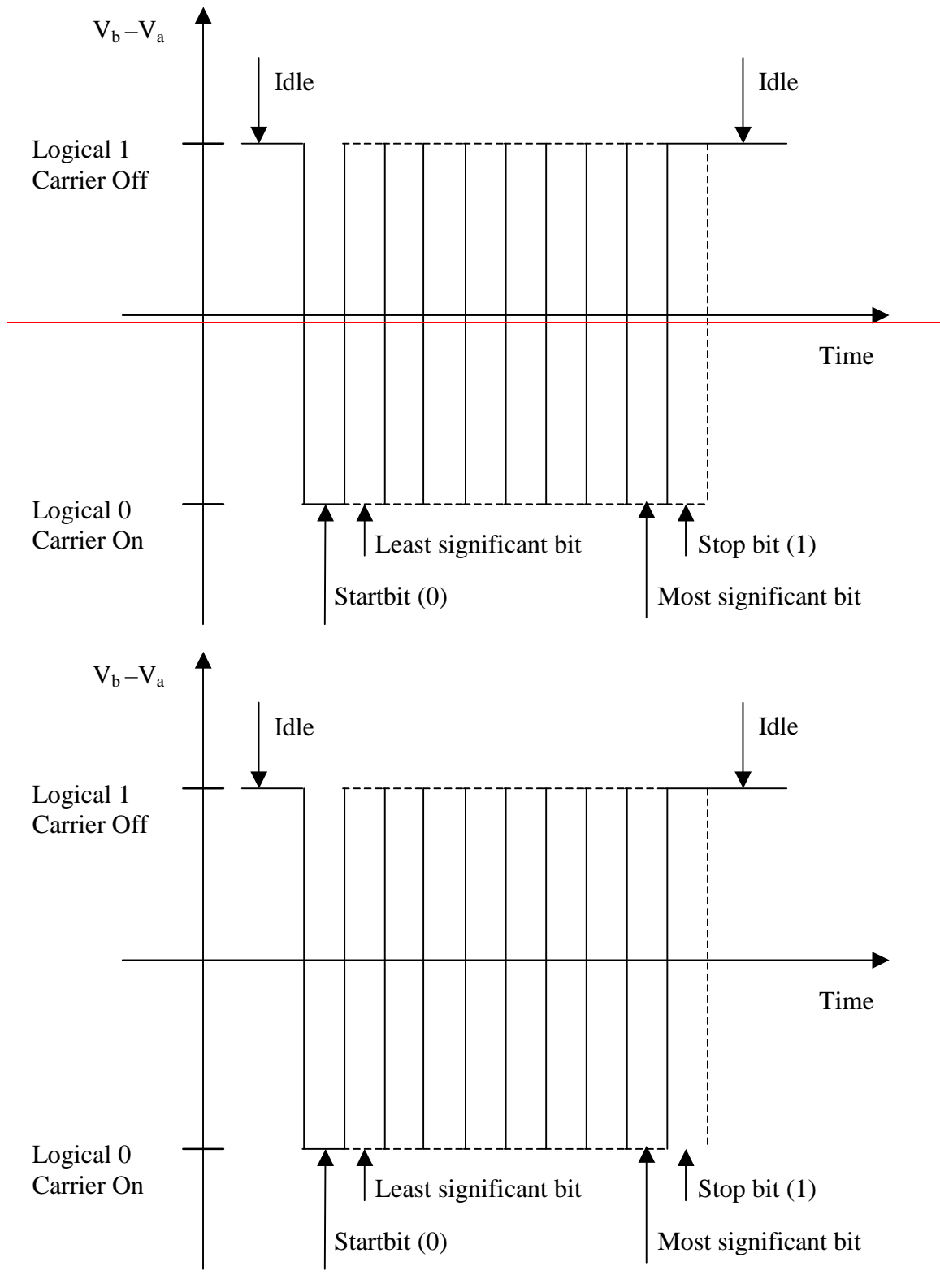


Figure 4.1: Format and order of transmitted data

4.2 RS485 option

This option are constituted by a two wire bi-directional multi-drop configuration conforming to [2]. The mapping of mark/space to logical one and zero as referred to in [2] shall be according to figure 4.1.

The use of Idle-State Biasing (ISB) is mandatory ~~and all secondary devices shall be capable of supporting its use~~. The bias voltages shall be applied only by the primary station to any separate RS485 bus. The polarity of the idle-state bias is defined as a transmitted 1.

~~NOTE:—If a RET modem is used ISB must be implemented by the RET modem.~~

If a RET modem is used ISB shall be implemented by the RET modem.

4.3 Modem option

The connection to a RET control unit by way of a coaxial cable which is shared with DC supply and RF signals is provided by two modems, a BS modem and a RET modem. The BS modem shall be either connected to the antenna connector of the BS or integrated in the BS. It provides signal transmission to the RET modem and signal reception from the RET modem over the antenna feeder cable. The RET modem is located between antenna feeder cable and antenna. Modem configurations and reference points for modem characteristics are specified in figure 4.2 and figure 4.3. Unless otherwise stated, requirements in this section apply to BS modem and RET modem.

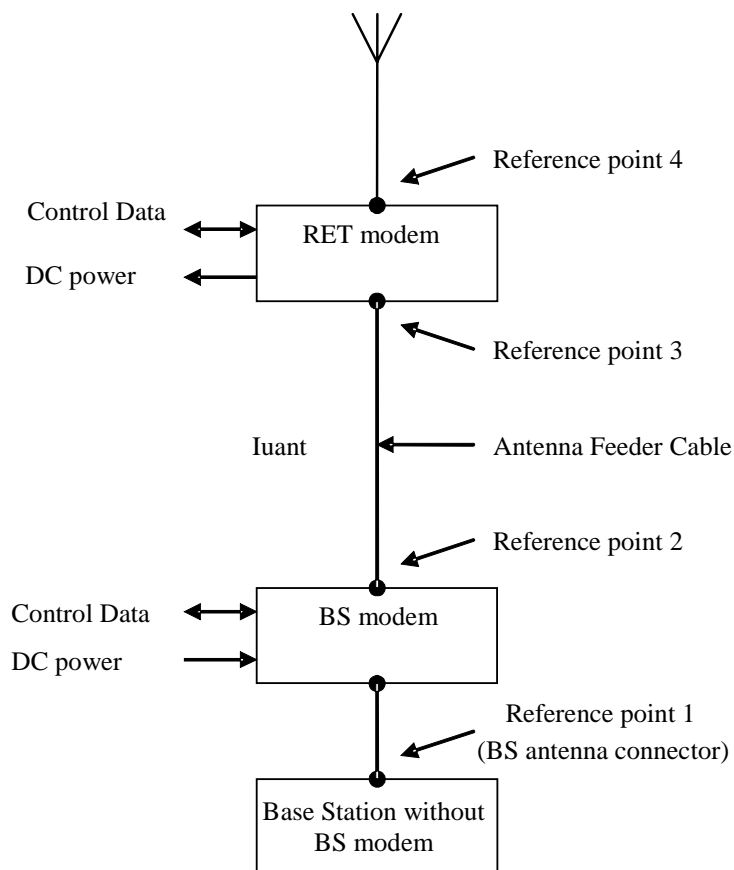


Figure 4.2: Modem configuration and modem reference points for base station without BS modem

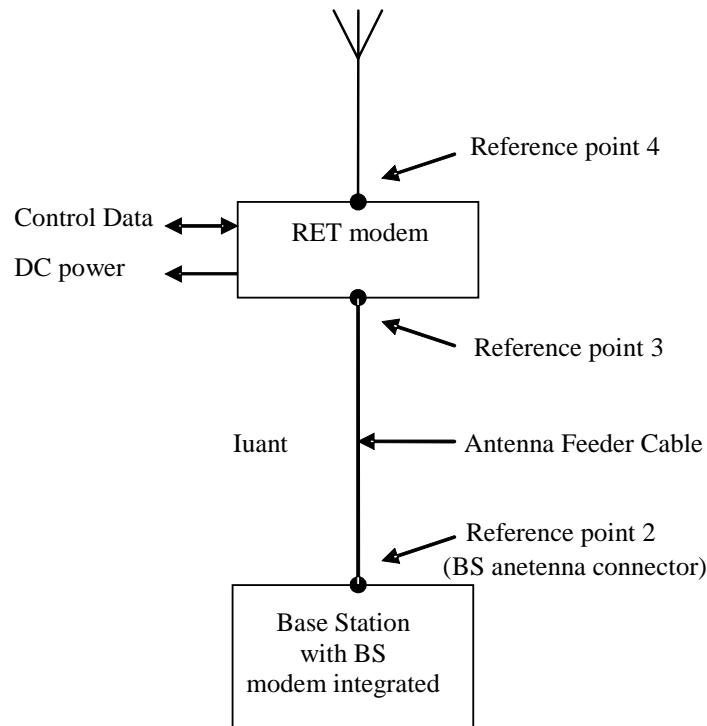


Figure 4.3: Modem configuration and modem reference points for base station with integrated BS modem

4.3.1 Interference with existing systems

The modem circuit shall be capable of managing its transmitting characteristic according to subclause 4.3.5.

4.3.1.1 Carrier frequency and frequency stability

The following carrier frequency shall be used for this application:

$$2.176 \text{ MHz} \pm 100 \text{ ppm}$$

4.3.1.2 Modem isolation and modem emissions

The BS modem shall provide at least 41 dB attenuation for frequencies below 400 MHz between reference point 2 and reference point 1 to protect the base station from emissions of the RET modem.

BS modem emissions at reference point 1 for frequencies below 400 MHz shall be at least 41 dB below the levels specified for the modem spectrum emission mask in subclause 4.3.5.4.2 to protect the base station from emissions of the BS modem.

The RET modem shall provide at least 41 dB attenuation for frequencies below 400 MHz between reference point 3 and reference point 4 to protect other radio systems from emission of the BS modem.

RET modem emissions at reference point 4 for frequencies below 400 MHz shall be at least 41 dB below the levels specified for the modem spectrum emission mask in subclause 4.4.5.3.4.2 to protect other radio systems from emission of the RET modem.

4.3.1.3 Modem intermodulation attenuation

BS modem and RET modem shall provide intermodulation attenuation of [TBD] at a interferer level of [TBD].

4.3.2 Recovery time

A minimum recovery time shall be allowed between receiving and transmitting messages on the bus. For this reason a minimum permitted response time is specified in subclause 4.5 in [1].

4.3.3 Impedance

The modem transceiver shall provide constant impedance in both transmitting and receiving modes:

- Nominal impedance Z_0 : 50 Ω .
- Return loss at nominal modem carrier frequency > 6 dB.
- Return loss in base station operating band [TBD].

4.3.4 Modulator characteristics

4.3.4.1 Levels

ON-Level: +3 dBm \pm 2 dB

OFF-Level: \leq -40 dBm

4.3.4.2 Spectrum emission mask

The modem spectrum emission mask is specified in figure 4.4. Intermediate values may be obtained by linear interpolation between the points shown. The corresponding measurement bandwidths are specified in table 4.1. For modem configurations according to figure 4.2 the BS modem shall meet the spectrum emission mask at reference point 2. For modem configurations according to figure 4.3 the base station with BS modem integrated shall meet the spectrum emission mask at reference point 2 only for frequencies below 400 MHz. RET modems shall meet the spectrum emission mask at reference point 3.

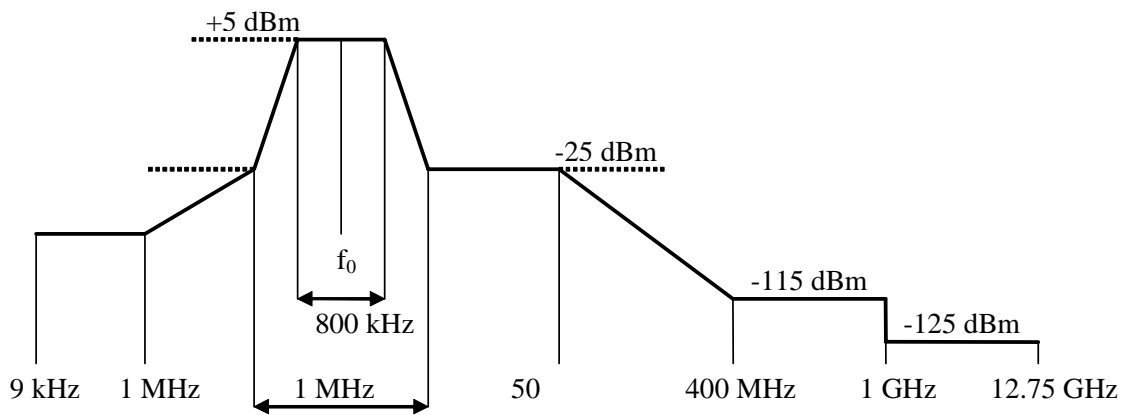


Figure 4.4: Modem spectrum emission mask.

Table 4.1: Modem spectrum emission mask measurement bandwidth

Band	Measurement Bandwidth
9 kHz - 150 kHz	1 kHz
150 kHz - 30 MHz	10 kHz
30 MHz - 1 GHz	100 kHz
1 GHz - 12.75 GHz	1 MHz

4.3.5 Demodulator characteristics

4.3.5.1 Threshold

Threshold: -15 dBm ± 3 dB

4.3.6 Duty cycle variation

In order to guarantee proper transmission of data bits through the processes of modulation and demodulation, the following limit shall be met for the duty cycle variation:

$$\Delta DC_{SYSTEM} = |DC_{RX} - DC_{TX}| \leq 10 \%$$

Where: ΔDC_{SYSTEM} is the difference between the duty cycles of the transmitted and received bit streams,

DC_{TX} = Duty cycle for the input bit stream, and

DC_{RX} = Duty cycle for the output bit stream.

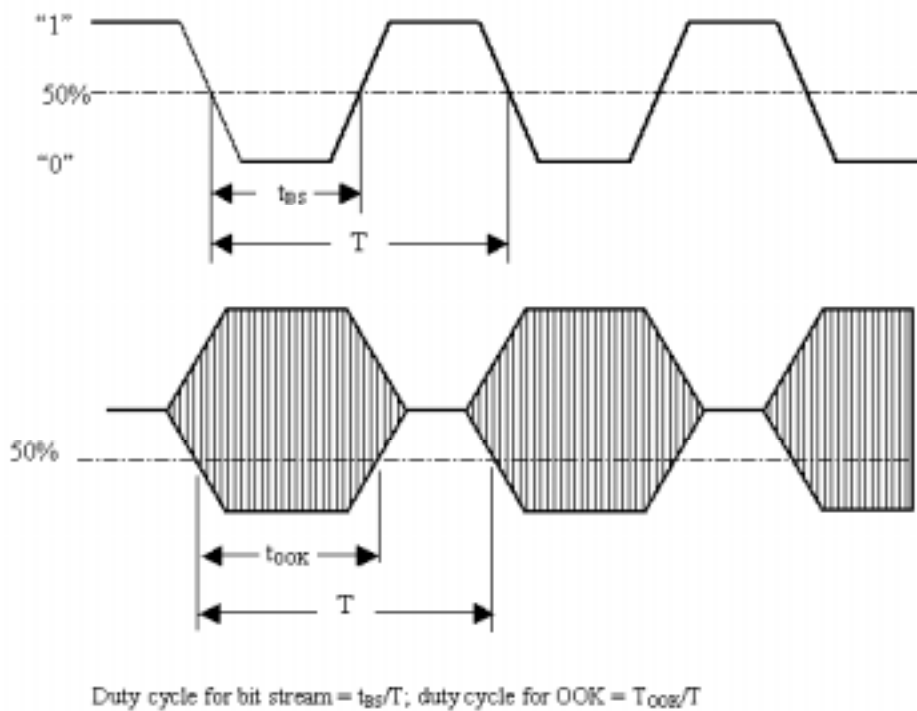


Figure 4.5: Duty cycles of the bit stream and OOK modulated subcarrier

For transmission through a coaxial cable, two converters are required, one from a bit stream to OOK (modulator) and one from OOK back to a bit stream (demodulator), so for each converter half of the total duty cycle tolerance is available.

For an input bit stream with a duty ratio of 50%, the cascaded modulator and demodulator shall provide an output bit stream with a duty ratio within the limits 40% - 60%, measured in each case at 0.5 times peak amplitude (see figure 4.5).

4.4 DC power supply

4.4.1 Power consumption

The reference point for the DC supply shall be ~~at~~ the secondary device.

The RET shall be able to operate with a DC supply voltage range ~~of~~ 10 V – 30 V.

The RET maximum power consumption shall be in operating mode < 15 W and in quiescent mode < 2 W.

4.4.2 Conducted emission

The levels of generated conducted noise and ripple on DC Power supply shall be within the limits given in table 4.2.

Table 4.2: Noise and ripple

Item	Limit	Frequency	Remarks
RET operate	70 mV _{pp}	0.15 - 30 MHz	Only one operating unit a time
RET quiescent	20 mV _{pp}	0.15 - 30 MHz	

All RET units connected to a DC supply bus shall exhibit full performance up to the limit of 112 mV_{pp} total noise and ripple within 0.15 - 30 MHz.

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
September 2004	TSG-RAN#25	RP-040344	-	-	presentation to TSG-RAN for information	-	1.0.0
September 2004	TSG-RAN#25	RP-040344	-	-	approved at TSG-RAN#25 and placed under change control	1.0.0	6.0.0

CHANGE REQUEST

25.462 CR 001 # rev - # Current version: 6.0.0

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Minor Corrections and editorial changes to 25.462 according to RAN3#44		
Source:	# RAN3		
Work item code:	# RANimp-TiltAnt	Date:	# 02/11/2004
Category:	# F	Release:	# Rel-6
	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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# Minor corrections and editorial changes for cleaner and more precise specification.
Summary of change:	# Adding of Definition for ASCII-character. Removal of section for Symbols and re-structuring of section 3. Clarification on supported HDLC frame lengths. Type of device code changed from hexadecimal to integer. Re-wording and editorials on Address Assignment and Device Scan for clarification. Alignment of example messages in annex D and E with normative text.
Consequences if not approved:	# Incomplete and wrong specification.

Clauses affected:	# 3, 4.2, 4.4, 4.6, 4.7, 4.8.3, 4.8.4, A.6, Annex B, Annex D, Annex E						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#	
Y	N						
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	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#	
Y	N						
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	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
Other comments:	#						

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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.

***** Unchanged Parts omitted *****

3 Definitions, ~~symbols~~ and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

[ASCII character](#): A character forming part of the International Reference Version of the 7-bit character set defined in ISO/IEC 646:1991

Octet: 8 bits as used in [2]

Device type: One octet identifying the type of a device

Vendor code: A unique ASCII 2-character code assigned to each vendor in [4]

~~3.2~~ ~~Symbols~~

~~Void~~

3.2.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ADDR	Address
ACK	Acknowledgment
CRC	Cyclic Redundancy Check
DISC	Disconnect (frame type)
DM	Disconnected Mode (frame type)
FCS	Frame Checking Sequence
FRMR	Frame Reject (frame type)
HDLC	High-Level Data Link Control
I	Information (frame type)
INFO	Information (field name)
NAK	Non Acknowledgment
NRM	Normal Response Mode
RET	Remote Electrical Tilting
RNR	Receive Not Ready (frame type)
RR	Receive Ready (frame type)
SNRM	Set Normal Response Mode (frame type)
TWA	Two Way Alternate
UA	Unnumbered Acknowledgement (frame type)
UNC	Unbalanced Operation Normal Response Mode Class
XID	Exchange ID (frame type)

***** Unchanged Parts omitted *****

4.2 Frame lengths

HDLC frame lengths may vary between 4 and N octets.

All secondary stations shall support an N of 78 octets. A secondary station may, after XID negotiation, support a larger ~~an N of not more than 65543 octets.~~

***** Unchanged Parts omitted *****

4.4 Windows size

All stations shall support a window size of 1. A station may, after XID negotiation, support any window size up to 7.

***** Unchanged Parts omitted *****

4.6 State model

The connection state model for the layer 2 of the secondary station is shown in figure 4.1. The events written in *italic* are procedures from higher levels e.g. link establishment. The HDLC frames that correspond to the events are written in bold as **command (from primary station) / response (from secondary station)**-messages.

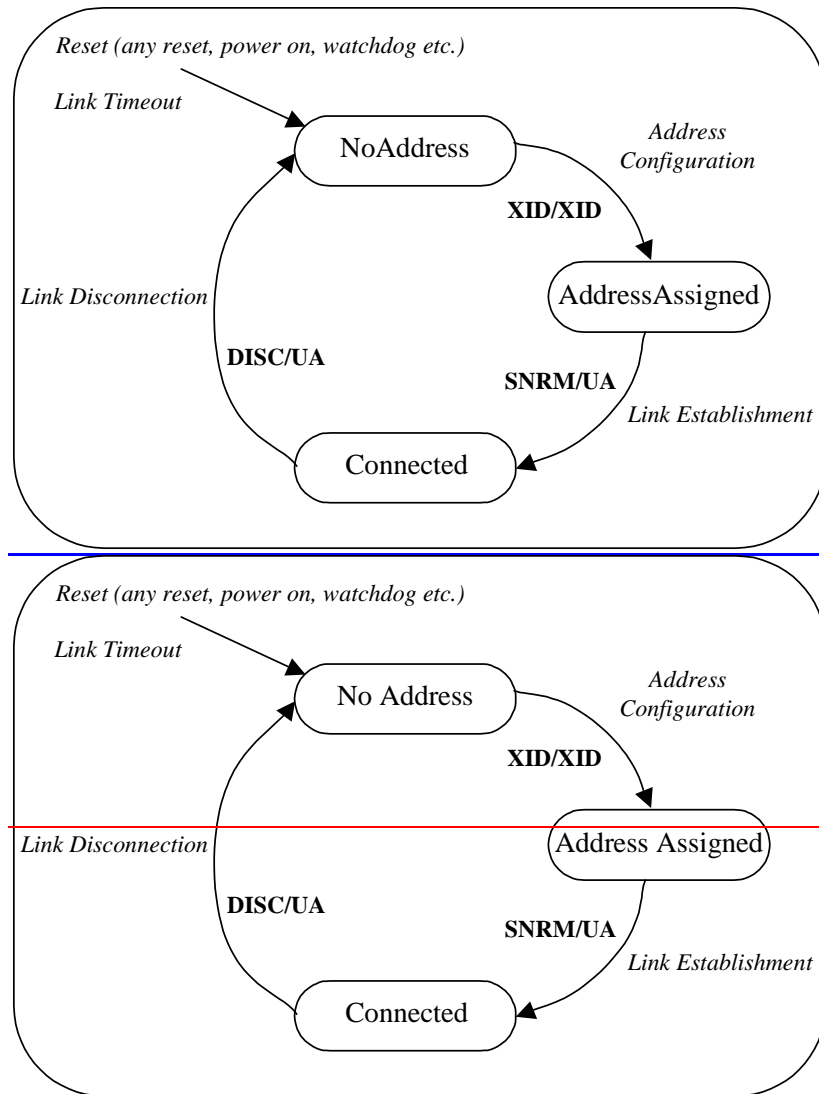


Figure 4.1: Connection State Model

4.7 Device types

Two device types are defined and identified by the assigned 1-octet hexadecimal integer code.

Table 4.7.1: Device types and codes

Device Type	1-octet hexadecimal <u>unsigned integer</u> code
Single-Antenna RET Device	0x01
Multi-Antenna RET Device	0x11

***** Unchanged Parts omitted *****

4.8.3 Addressing Assignment

The primary station broadcasts the XID commands. The secondary station(s) which match shall respond. The primary shall ensure that only one secondary matches the supplied parameter(s). See below for details.

Format Identifier (FI) shall be 0x81 and Group Identifier (GI) shall be 0xF0. All secondary stations shall support the following parameters:

Table 4.4: HDLC parameters for addressing and device scan

PI	PL	Description of PV
1	1 to 19	Unique ID
2	1	HDLC Address
3	1 to 19	Bit Mask (for Unique ID), indicates a device scan
4	1	Device Type (see table 4.1)
6	2	Vendor Code as given in [4]

The XID message can be used to assign HDLC addresses or to scan for devices. ~~If parameter 3 is present, the XID message is used for a device scan. If parameter 3 is not present, the XID message is used for an address assignment.~~

An address assignment XID command shall contain at least PI=2 (HDLC Address) and ~~may shall~~ not contain PI=3 (Bit Mask). During an address assignment all secondary stations first assume a match and then carry out the following steps:

- If PI=1 (Unique ID) is supplied, the right-most PL octets of the secondary station's Unique ID ~~is~~ are compared to the Unique ID in the XID command. If they are different, the secondary station does not match, and the message is ignored. If the Unique ID in the XID command is longer than the secondary station's Unique ID, the secondary station does not match, and the message is ignored.
- If PI=4 (Device Type) is supplied, the device type of the secondary station is compared to the device type in the XID command. If they are different, the secondary station does not match, and the message is ignored.
- If PI=6 (Vendor Code) is supplied, the vendor code of the secondary station is compared to the vendor code in the XID command. If they are different, the secondary station does not match, and the message is ignored.

If the secondary station still matches after these steps, the secondary station sets its HDLC address to the address specified in PI=2 and responds with an XID response which contains PI=1 and PI=4.

NOTE: Unlike the normal XID negotiation, in this XID negotiation, the XID response message returns a different set of parameters than the XID command message.

4.8.4 Device Scan

A device scan XID command shall only contain PI=1 (Unique ID) and PI=3 (Bit Mask), see table 4.4. PI=1 and PI=3 shall be of equal length PL octets. The secondary station masks the left-most PL octets of its Unique ID with the bit mask in the XID command, and compares the first L octets of the result with the L octets of the Unique ID supplied in the XID command. If they match, the secondary station transmits an XID response message with PI=1 (Unique ID), PI=2 (HDLC Address) and PI=4 (Device Type).

For the device scan comparison, the Unique ID of the secondary station shall be padded with trailing spaces (character code 0x20) to a length of 19 bytes octets.

The device scan messages may be utilised by the primary to identify all secondary stations on an interface.

***** Unchanged Parts omitted *****

A.6 Link safety

HDLC provides the upper layer with a safe link between two stations.

Unless excessive frame lengths are used, the CRC16 checksum provides excellent protection against transmission errors. At worst, 10⁻⁵ of the bit errors will not be detected. The likelihood of an undetected error in a frame can be calculated by multiplying 10⁻⁵ with the Bit Error Rate (at least 10⁻⁹ for a reasonable link) and the frame length.

The sequence numbers provide protection against:

- Message duplication;
- Message deletion;
- Message re-ordering.

Without sequence numbers, the protection is only given by a checksum and some sort of ACK.

If the original message is lost, there will be no ACK and a timeout will cause retransmission which solves the problem.

If the original message is not lost, but the ACK is lost, the same timeout will cause a retransmission which causes message duplication.

With sequence numbers, the message is still retransmitted, but the receiving station sees that the sequence number is the same, i.e. that the message is a retransmission, and throws it away without processing it further. It does send an ACK which informs the transmitting station that the message got through.

Without sequence numbers, commands such as "Increase by one" cannot be used, since there is no way to know how many times the command will be executed.

***** Unchanged Parts omitted *****

Annex B (informative): HDLC parameter negotiation

See also sections 5.5.3.1 – 5.5.3.2.3.2 in [2].

Table B.1: Format of XID parameters

FI	GI	GL	PI	PL	PV	PI	PL	PV
----	----	----	----	----	----	----	----	----

XID parameter negotiation uses a specific format (see table C.1) to transfer parameters.

The parameters are identified by a one octet Format Identifier (FI) code and a one octet Group Identifier (GI) code. The Group Length (GL) is a one octet unsigned integer giving the length in octets of the parameters following it.

The parameters are a sequence of PI/PL/PV values. The Parameter Identifier (PI) is a one octet code identifying the parameter. Parameter Length (PL) is a one octet unsigned integer giving the length in octets of the Parameter Value. [The parameter order is not defined.](#)

The HDLC parameter negotiation is initiated by the primary station. The primary station transmits an XID frame with the values it suggests. The secondary station can either accept these or lower them. Regardless, it responds with an XID with the appropriate values.

Generally this means that the primary initially uses whatever its maximum limit is for each parameter. If the secondary can accept this, it responds with the same values. If it cannot support that, it lowers the values.

Maximum frame length is a good example. If the primary suggests using a frame length of 28000 octets, the secondary station can respond with 28000, if it can use that much or even more, or maybe 70 if that is its maximum supported frame length.

The same applies to the Release ID. If a release 7 primary station attempts to communicate with a release 6 secondary station, the initial message will suggest release 7 and the response will be release 6.

On the other hand, if a release 6 primary station attempts to communicate with a release 7 secondary station, the initial message will suggest release 6 and the response will release 6.

Regardless, the primary station will have the final decision, since it can refuse to communicate with a station that does not support whatever parameter values it suggests. It can always repeat the XID negotiation with a new value.

***** Unchanged Parts omitted *****

Annex D (informative): Address assignment example

D.1 Address Assignment command

Table D.1: Format of the XID frame originated by the primary station

Field	Content	Description
ADDR	0xFF	All-station address (Broadcast)
CTRL	XID	Command
FI	0x81	Format identifier
GI	0xF0	User defined parameter set
GL	Length in octets for the rest of the message ⁿ⁺¹⁴	Length of parameter field
PI	1	Parameter id 1 = Unique ID
PL	N	Length of PV field in octets
PV	Unique ID	Concatenation of vendor code and serial number (ⁿ N octets)
PI	2	Parameter id 2 = HDLC

		address
PL	1	Length of PV field in octets
PV	1 – 254	Assigned HDLC address
PI	3	Parameter id 3 = Bit Mask (for Unique ID), indicates a device scan Vendor Code as given in [4]
PL	2 M	Length of PV field in octets
PV	Vendor Code Bit Mask	Unique assigned vendor code as given in [4] Bit Mask for Unique ID used for device scan
PI	4	Parameter id 4 = Device Type
PL	1	Length of PV field in octets
PV	Device Type	Device Type as defined in table 4.1
PI	5 6	Parameter id 5 = 3GPP Release ID Vendor Code as given in [4]
PL	2 +	Length of PV field in octets
PV	Release ID Vendor Code	Unique assigned vendor code as given in [4] Latest supported 3GPP release version

D.2 Address assignment response

The secondary station verifies the validity of the XID command. Thereafter the secondary station matches PV1, PV3 and PV4.

- To fulfil the match with the Unique ID given as the first parameter value PV1, the following two rules shall be valid:
 1. Length of given Unique ID shall be less or equal to the length of its own Unique ID.
 2. When compared character by character, from right to left, they shall match.
- To fulfil the match with the vendor code given as the third parameter value PV3, one of the following two rules shall be valid:
 1. The given vendor code is a wild card coded as 0xFF 0xFF.
 2. The given vendor code matches exactly
- To fulfil the match with the device type given as the fourth parameter value PV4, one of the following two rules shall be valid:
 1. The given device type is a wild card coded as 0xFF.
 2. The given device type matches exactly.

Table D.2: Format of Address Assignment Response by the secondary station

Field	Content	Description
ADDR	#	Station address
CTRL	XID	Command
FI	0x81	Format identifier
GI	0xF0	User defined parameter set
GL	n+14	Length of parameter field
PI	1	Parameter id 1 = Unique ID
PL	N	Length of PV field in octets
PV	Unique ID	Concatenation of vendor code and serial number (n octets)
PI	2	Parameter id 2 = HDLC address
PL	1	Length of PV field in octets
PV	1 – 254	Assigned HDLC address
PI	3	Parameter id 3 = Bit Mask (for Unique ID), indicates a device scan Vendor Code as given in [4]
PL	2 M	Length of PV field in octets
PV	Vendor Code Bit Mask	Bit Mask for Unique ID used for device scan Unique assigned vendor code as given in [4]
PI	4	Parameter id 4 = Device Type
PL	1	Length of PV field in octets
PV	Device Type	Device Type as defined in table 4.1
PI	5	Parameter id 5 = 3GPP Release-ID
PL	1	Length of PV field in octets
PV	Release-ID	Latest supported 3GPP Release version

In case of a match it changes its address to the one supplied in the second PV. It then responds with an XID frame transmitted from its new address.

If the match fails, the secondary station does nothing.

After the assignment of its address a secondary station enters the state *Connected*.

NOTE: Some further work on this example might be needed.

Annex E (informative): Device scan example

In some situations it may be found that the Unique ID of a bus device is unknown or has been inaccurately recorded. This HDLC command exchange is used by the primary station to perform a binary tree scan of the bus, in order to identify all connected and disconnected devices, ~~and is always carried out at 9.6 kbps.~~

Table E.1: Primary device scan command (XID Frame)

ADDR	0xFF	All-station address (Broadcast)
CTRL	XID	Command
FI	0x81	Format identifier
GI	0xF0	User defined parameter set
GL	Length in octets for the rest of the message ^{2*n+4}	Length of parameter field
PI	1	Parameter id 1 = Unique ID
PL	n N	Length of PV field in octets
PV	Unique ID	Concatenation of vendor code and serial number (n N octets)
PI	3	Parameter id 3 = bit Bit mask Mask
PL	n	Length of PV field in octets (same as for PI=1)
PV	bit Bit mask Mask	Bit M mask (n octets)

➤ Device Scan Response

When each secondary station receives the command it masks its Unique ID with the bit mask and compares the result with the Unique ID supplied. If they match, the secondary station responds using ~~any unnumbered~~XID format frame according to table 8 of section 5.5 of [2]. It is recommended that the response of individual devices is subject to a random delay (within the permitted response time) to aid collision detection at the primary station.

If there is no response, the primary station knows that no secondary station had those bits in its Unique ID, so the tree scan can be truncated at that branch.

If multiple secondary stations respond, the messages may arrive after each other or at the same time. In the first case multiple responses will arrive before the timeout, in the second case the responses might garble each other, unless one secondary station is close enough to overpower the signal from the other(s).

If any response arrives, a single frame, multiple frames or frames with incorrect checksums or framing errors, the primary station shall assume that that branch of the tree is inhabited and scan through it.

NOTE: Some further work on the example given here is needed in order to align it with the device scan procedure described in section 4.8.3.

***** End of Changes *****

3GPP TSG-RAN3 Meeting #45
Shin-Yokohama, Japan, 15th - 19th November 2004

Tdoc # R3-041678

CR-Form-v7.1	CHANGE REQUEST
# 25.462 CR 003 # rev 3 # Current version: 6.0.0 #	

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

Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	#	Maximum data payload size in the Transport Layer.	
Source:	#	RAN3	
Work item code:	#	RANimp-TiltAnt	Date: # 18/11/2004
Category:	#	F	Release: # Rel-6
		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: Ph2 (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) Rel-7 (Release 7)

Reason for change:	#	Maximum data payload size in the transport layer is unclear. Risk of depleting the Data Payload size in some procedures in the application layer.
Summary of change:	#	Maximum data payload size in is defined in the transport layer.
Consequences if not approved:	#	Maximum data payload size in the transport layer remains unclear. Risk of depleting the Data Payload size in some Elementary Procedures in the application layer remain.

Clauses affected:	#	3.1								
Other specs affected:	#	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # CR16 for TS25.463 Test specifications O&M Specifications	Y	N	X			X		X
Y	N									
X										
	X									
	X									
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 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Octet: 8 bits as used in [2]

Device type: One octet identifying the type of a device

Vendor code: A unique ASCII 2-character code assigned to each vendor in [4]

Secondary Payload Transmit Length: The maximum length of the Info field of an HDLC I-frame in the direction secondary station to primary station. The value is by default 74 octets or decided by XID negotiation. It is always 74 octets or larger.

Secondary Payload Receive Length: The maximum length of the Info field of an HDLC I-frame in the direction primary station to secondary station. The value is by default 74 octets or decided by XID negotiation. It is always 74 octets or larger.