Technical Specification Group Services and System Aspects ***TSGS#15(02)0080***
Meeting #15, Cheju Island, Korea, 11-14 March 2002

Source: **TSG-SA WG4**

Title: CRs to TS 26.132 on Correction of references and editorial changes (wrong decimal separators) (R99, Release 4 and Release 5)

Document for: **Approval**

Agenda Item: **7.4.3**

The following CRs, agreed at the TSG-SA WG4 meeting #20, are presented to TSG SA #15 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.132	009	1	R99	Correction of references and editorial changes (wrong decimal separators)	F	3.3.0	S4	TSG-SA WG4#20	S4-020018
26.132	010	1	REL-4	Correction of references and editorial changes (wrong decimal separators)	A	4.1.0	S4	TSG-SA WG4#20	S4-020019
26.132	011	1	REL-5	Correction of references and editorial changes (wrong decimal separators)	A	5.1.0	S4	TSG-SA WG4#20	S4-020020

CR-Form-v4

CHANGE REQUEST

⌘	**26.132**	**CR**	**009**	⌘	ev **1**	⌘	Current version:	**3.3.0** ⌘

*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 [ ] Core Network [ ]

Title: ⌘	Correction of references and editorial changes (wrong decimal separators)		
Source: ⌘	TSG SA WG4		
Work item code: ⌘	TEI	***Date:*** ⌘	11 March 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: ⌘	Wrong references, mixing up of tables & formulars, wrong decimal separators
Summary of change: ⌘	References corrected, decimal separators corrected
Consequences if not approved: ⌘	Testing not possible with wrong referenced tables / formulars

Clauses affected: ⌘	5.2.1, 5.2.2, 6.1.1, 6.2, 7.2.2.1, 7.2.2.2, 7.2.3.1, 7.2.3.2, 7.2.4.1, 7.2.4.2, 7.4.3, 7.4.5, 7.5.1, 7.5.2, 7.7.2, 7.7.3, 7.7.4	
Other specs affected: ⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘
Other comments: ⌘		

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5.2.1 Codec approach and specification

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Definition of 0 dBr point:

D/A converter - a Digital Test Sequence (DTS) representing the codec equivalent of an analogue sinusoidal signal whose rms value is 3~~.~~,14 dB below the maximum full-load capacity of the codec shall generate 0 dBm across a 600 ohm load;

A/D converter - a 0 dBm signal generated from a 600 ohm source shall give the digital test sequence (DTS) representing the codec equivalent of an analogue sinusoidal signal whose RMS value is 3~~.~~,14 dB below the maximum full-load capacity of the codec.

Narrow band telephony testing

For testing a 3G terminal supporting narrow-band telephony, the system simulator shall use the AMR speech codec as defined in 3GPP TS 26 series specifications, at the source coding bit rate of 12~~.~~,2kbit/s. The transcoding from the output of the AMR speech coding in the system simulator to analogue signals shall be carried out using an ITU-T G.711 codec performing to ITU-T G.712 (4-wire analogue).

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a) The test signal to be used for the measurements shall be the artificial voice according to ITU-Recommendation P. 50 or a speech like test signal as described in ITU-T Recommendation P.501. The type of test signal used shall be stated in the test report. The spectrum of acoustic signal produced by the artificial mouth is calibrated under free field conditions at the MRP. The test signal level shall be –4,7 dBPa, measured at the MRP. The test signal level is averaged over the complete test signal sequence. The broadband signal level then is adjusted to –28~~.~~,7 dBPa at the HFRP or the HATSHFRP (as defined in P. 581) and the spectrum is not altered.

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7.5.1 Connections with Handset UE

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7.7.2 Acoustic echo control in a Hands-free UE

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$$s(t) = \sum_i \left[\left[A + \mu_{AM} \cos(2\pi t * f_{AM})\right] * \cos(2\pi t * f_{0i})\right]$$

with A = 0,5

f_{AM} = 4 Hz, μ_{AM} = 0~~.~~,5

$f_{0\,i}$= 250Hz * $2^{(i/3)}$;i=1..11

CF= 14dB ±1 dB (10 dB + 4~~.~~,26 dB due to 100% AM modulation)

CF = Crest Factor = Peak to RMS ratio

The training sequence level shall be –16 dBm0 in order not to overload the codec. The test signal level shall be -10 dBm0. The TCLw is calculated according to ITU-T Recommendation G.122 [8], annex B, clause B.4 (trapezoidal rule). For the calculation the averaged measured echo level at each frequency band is referred to the averaged test signal level measured in each frequency band. The length of the test signal shall be at least one second (1~~.~~,0 s).

Note:

Full scale of coder input signal corresponds to +3~~.~~,14 dBm0 with sinusoidal signal, CF= 3dB. A test signal with a CF of maximum 15 dB can thus have a level of up to –8~~.~~,86 dBm0 without overloading the codec. In order to get best dynamic range the signal amplitude should be as high as possible.

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3GPP TSG-SA WG4#20
Lulea, Sweden
18 - 22 Feb 2002

Tdoc S4-020020
(S4-010557 Revised)

CR-Form-v4

CHANGE REQUEST

⌘	**26.132**	**CR**	**011**	⌘	ev	**1**	⌘	Current version:	**5.1.0**	⌘

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Date:	⌘	11 March 2002
Category:	⌘	**A**
Release:	⌘	REL-5

Use one of the following categories:
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

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7.7.4 Acoustic echo control in a headset UE

...

f_{AM} = 4 Hz, μ_{AM} = 0~~.~~,5

$f_{0\,i}$= 250Hz * $2^{(i/3)}$;i=1..11

CF= 14dB ±1 dB (10 dB + 4~~.~~,26 dB due to 100% AM modulation)

CF = Crest Factor = Peak to RMS ratio

The training sequence level shall be –16 dBm0 in order not to overload the codec. The test signal level shall be -10 dBm0. The TCLw is calculated according to ITU-T Recommendation G.122 [8], annex B, clause B.4 (trapezoidal rule). For the calculation the averaged measured echo level at each frequency band is referred to the averaged test signal level measured in each frequency band. The length of the test signal shall be at least one second (1~~.~~,0 s).

Note:

Full scale of coder input signal corresponds to +3~~.~~,14 dBm0 with sinusoidal signal, CF= 3dB. A test signal with a CF of maximum 15 dB can thus have a level of up to –8~~.~~,86 dBm0 without overloading the codec. In order to get best dynamic range the signal amplitude should be as high as possible.

Tdoc S4-020019
(S4-010556 Revised)

CR-Form-v4

CHANGE REQUEST

⌘	**26.132**	**CR**	**010**	⌘ ev	**1**	⌘ Current version:	**4.1.0** ⌘

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

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

Title:	⌘	Correction of references and editorial changes (wrong decimal separators)		
Source:	⌘	TFS SA WG4		
Work item code:	⌘	TEI	***Date:*** ⌘	11 March 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:	⌘	Wrong references, mixing up of tables & formulars, wrong decimal separators
Summary of change:	⌘	References corrected, decimal separators corrected
Consequences if not approved:	⌘	Testing not possible with wrong referenced tables / formulars

Clauses affected:	⌘	5.2.1, 5.2.2, 6.1.1, 6.2, 7.2.2.1, 7.2.2.2, 7.2.3.1, 7.2.3.2, 7.2.4.1, 7.2.4.2, 7.4.3, 7.4.5, 7.5.1, 7.5.2, 7.7.2, 7.7.3, 7.7.4		
Other specs affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2.1 Codec approach and specification

...

Definition of 0 dBr point:

D/A converter - a Digital Test Sequence (DTS) representing the codec equivalent of an analogue sinusoidal signal whose rms value is 3~~.~~,14 dB below the maximum full-load capacity of the codec shall generate 0 dBm across a 600 ohm load;

A/D converter - a 0 dBm signal generated from a 600 ohm source shall give the digital test sequence (DTS) representing the codec equivalent of an analogue sinusoidal signal whose RMS value is 3~~.~~,14 dB below the maximum full-load capacity of the codec.

Narrow band telephony testing

For testing a 3G terminal supporting narrow-band telephony, the system simulator shall use the AMR speech codec as defined in 3GPP TS 26 series specifications, at the source coding bit rate of 12~~.~~,2kbit/s. The transcoding from the output of the AMR speech coding in the system simulator to analogue signals shall be carried out using an ITU-T G.711 codec performing to ITU-T G.712 (4-wire analogue).

5.2.2 Direct digital processing approach

In this approach, the companded digital input/output bit-stream of the terminal connected through the radio link to the system simulator is operated upon directly. For the purposes of 3G acoustic testing, the direct digital processing shall use the default speech codec, the AMR speech codec as defined in 3GTS26 series specifications, at it’s highest source coding bit rate of 12~~.~~,2kbit/s.

Narrow band telephony testing

For testing a 3G terminal supporting narrow-band telephony, the system simulator shall use the AMR speech codec as defined in 3GPP TS 26 series specifications, at the source coding bit rate of 12~~.~~,2kbit/s.

6.1.1 Handset and headset terminals

...

Alternatively, a test room may be used which meets the following two criteria:

1. The relationship between the pressure at the mouth opening and that at 5~~.~~,0, 7~~.~~,5 and 10cm in front of the centre of the lip ring is within ±0~~.~~,5dB of that which exists in a known acoustic free-field.

...

6.2 System Simulator conditions

The system simulator should provide an error free radio connection to the UE under test. The default speech codec, the AMR speech codec, shall be used at it’s highest bit rate of 12~~.~~,2kbit/s. Discontinuous Transmission, DTX, (silence suppression) shall be disabled for the purposes of 3G acoustic testing.

...

7.2.2.1 Sending Loudness Rating (SLR)

...

c) The sensitivity is expressed in terms of dBV/Pa and the SLR shall be calculated according to ITU-T Recommendation P.79, formula ~~2.1~~(A-23b), over bands 4 to 17, using m = 0,175 and the sending weighting factors from ITU-T Recommendation P.79, table 1.

7.2.2.2 Receiving Loudness Rating (RLR)

...

c) The sensitivity is expressed in terms of dBPa/V and the RLR shall be calculated according to ITU-T Recommendation P.79 [~~18~~16], formula ~~2.1~~(A-23c), over bands 4 to 17, using m = 0,175 and the receiving weighting factors from table 1 of ITU-T Recommendation P.79 [~~18~~16].

7.2.3.1 Sending Loudness Rating (SLR)

a) The test signal to be used for the measurements shall be the artificial voice according to ITU-Recommendation P. 50 or a speech like test signal as described in ITU-T Recommendation P.501. The type of test signal used shall be stated in the test report. The spectrum of acoustic signal produced by the artificial mouth is calibrated under free field conditions at the MRP. The test signal level shall be –4,7 dBPa, measured at the MRP. The test signal level is averaged over the complete test signal sequence. The broadband signal level then is adjusted to –28~~.~~,7 dBPa at the HFRP or the HATSHFRP (as defined in P. 581) and the spectrum is not altered.

...

c) The sensitivity is expressed in terms of dBV/Pa and the SLR shall be calculated according to ITU-T Recommendation P.79, formula ~~2.1~~ (A-23b), over bands 4 to 17, using m = 0,175 and the sending weighting factors from ITU-T Recommendation P.79, table 1.

7.2.3.2 Receiving Loudness Rating (RLR)

...

c) The sensitivity is expressed in terms of dBPa/V and the RLR shall be calculated according to ITU-T Recommendation P.79 [~~18~~16], formula ~~2.1~~ (A-23c), over bands 4 to 17, using m = 0,175 and the receiving weighting factors from table 1 of ITU-T Recommendation P.79.

7.2.4.1 Sending Loudness Rating (SLR)

a) The test signal to be used for the measurements shall be the artificial voice according to ITU-Recommendation P. 50 or a speech like test signal as described in ITU-T Recommendation P.501. The type of test signal used shall be stated in the test report. The spectrum of acoustic signal produced by the artificial mouth is calibrated under free field conditions at the MRP. The test signal level shall be –4,7 dBPa, measured at the MRP. The test signal level is averaged over the complete test signal sequence. The broadband signal level then is adjusted to –28~~.~~,7 dBPa at the HFRP or the HATSHFRP (as defined in P. 581) and the spectrum is not altered.

...

c) The sensitivity is expressed in terms of dBV/Pa and the SLR shall be calculated according to ITU-T Recommendation P.79, ~~formula 2.1~~ Formula (A-23b), over bands 4 to 17, using m = 0,175 and the sending weighting factors from ITU-T Recommendation P.79, table 1.

7.2.4.2 Receiving Loudness Rating (RLR)

...

c) The sensitivity is expressed in terms of dBPa/V and the RLR shall be calculated according to ITU-T Recommendation P.79 [~~18~~16], ~~formula 2.1~~Formula A-23c, over bands 4 to 17, using m = 0,175 and the receiving weighting factors from table 1 of ITU-T Recommendation P.79.

7.4.3 Vehicle Mounted & Desk-Top hands-free UE sending

a) The test signal to be used for the measurements shall be the artificial voice according to ITU-Recommendation P. 50 or a speech like test signal as described in ITU-T Recommendation P.501. The type of test signal used shall be stated in the test report. The spectrum of acoustic signal produced by the artificial mouth is calibrated under free field conditions at the MRP. The test signal level shall be –4,7 dBPa, measured at the MRP. The test signal level is averaged over the complete test signal sequence. The broadband signal level then is adjusted to –28~~.~~,7 dBPa at the HFRP or the HATSHFRP (as defined in P. 581) and the spectrum is not altered.

7.4.5 Hand-Held hands-free UE sending

a) The test signal to be used for the measurements shall be the artificial voice according to ITU-Recommendation P. 50 or a speech like test signal as described in ITU-T Recommendation P.501. The type of test signal used shall be stated in the test report. The spectrum of acoustic signal produced by the artificial mouth is calibrated under free field conditions at the MRP. The test signal level shall be –4,7 dBPa, measured at the MRP. The test signal level is averaged over the complete test signal sequence. The broadband signal level then is adjusted to –28~~.~~,7 dBPa at the HFRP or the HATSHFRP (as defined in P. 581) and the spectrum is not altered.

7.5.1 Connections with Handset UE

...

The sidetone path loss L_{meST} as expressed in dB shall be calculated from each band of the 14 frequencies given in table 1 of ITU-T Recommendation P.79, bands 4 to 17. The STMR (in dB) shall be calculated from the formula B-4~~2.1~~ of ITU-T Recommendation P.79, using m = 0~~,~~.225 and the weighting factors in table B.2~~3~~ of ITU-T Recommendation P.79.

7.5.2 Headset UE

...

The sidetone path loss L_{meST} as expressed in dB shall be calculated from each band of the 14 frequencies given in table 1 of ITU-T Recommendation P.79, bands 4 to 17. The STMR (in dB) shall be calculated from the formula B-4 of ITU-T Recommendation P.79 [16], using m = 0,225 and the weighting factors in Table ~~3~~B.2 of ITU-T Recommendation P.79 [16].

7.7.2 Acoustic echo control in a Hands-free UE

...

$$s(t) = \sum_i \left[\left[A + \mu_{AM} \cos\left(2\pi t * f_{AM}\right)\right] * \cos\left(2\pi t * f_{0i}\right)\right]$$

with A = 0,5

f_{AM} = 4 Hz, μ_{AM} = 0~~.~~,5

$f_{0\,i}$= 250Hz * $2^{(i/3)}$;i=1..11

CF= 14dB ±1 dB (10 dB + 4~~.~~,26 dB due to 100% AM modulation)

CF = Crest Factor = Peak to RMS ratio

The training sequence level shall be –16 dBm0 in order not to overload the codec. The test signal level shall be -10 dBm0. The TCLw is calculated according to ITU-T Recommendation G.122 [8], annex B, clause B.4 (trapezoidal rule). For the calculation the averaged measured echo level at each frequency band is referred to the averaged test signal level measured in each frequency band. The length of the test signal shall be at least one second (1~~.~~,0 s).

Note:

Full scale of coder input signal corresponds to +3~~.~~,14 dBm0 with sinusoidal signal, CF= 3dB. A test signal with a CF of maximum 15 dB can thus have a level of up to –8~~.~~,86 dBm0 without overloading the codec. In order to get best dynamic range the signal amplitude should be as high as possible.

7.7.3 Acoustic echo control in a handset UE

...

$$s(t) = \sum_i \left[\left[A + \mu_{AM} \cos(2\pi t * f_{AM})\right] * \cos(2\pi t * f_{0i})\right]$$

with A = 0,5

f_{AM} = 4 Hz, μ_{AM} = 0~~.~~,5

$f_{0\,i}$= 250Hz * $2^{(i/3)}$;i=1..11

CF= 14dB ±1 dB (10 dB + 4~~.~~,26 dB due to 100% AM modulation)

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7.7.4 Acoustic echo control in a headset UE

...

f_{AM} = 4 Hz, μ_{AM} = 0~~.~~,5

$f_{0\,i}$= 250Hz * $2^{(i/3)}$;i=1..11

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