

**Source:** TSG-SA WG4

**Title:** CRs TS 26.173 and TS 26.204 on AMR-WB codec : Incorrect definition of vector nb\_of\_bits (Release 5 and Release 6)

**Document for:** Approval

**Agenda Item:** 7.4.3

The following CRs, agreed at the TSG-SA WG4 meeting #33, are presented to TSG SA #26 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.173	021		Rel-5	Incorrect definition of vector nb_of_bits	F	5.8.0	S4	TSG-SA WG4#33	S4-040745
26.173	020	1	Rel-6	Incorrect definition of vector nb_of_bits	A	5.8.0	S4	TSG-SA WG4#33	S4-040746
26.204	010		Rel-5	Incorrect definition of vector nb_of_bits	F	5.2.0	S4	TSG-SA WG4#33	S4-040747
26.204	009	1	Rel-6	Incorrect definition of vector nb_of_bits	A	5.2.0	S4	TSG-SA WG4#33	S4-040748

## CHANGE REQUEST

⌘ **TS 26.173 CR 021** ⌘ 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  Core Network

<b>Title:</b>	⌘ Incorrect definition of vector nb_of_bits		
<b>Source:</b>	⌘ TSG-SA WG4		
<b>Work item code:</b>	⌘ AMRWB	<b>Date:</b>	⌘ 2004-12-14
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ REL-5
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ One line has been erroneously repeated in the AMR-WB C-code (contained in TS 26.173) in the definition of vector nb_of_bits. This results in a wrong mode index to be generated for the SID mode and a superfluous index for the 23.85 kbit/s mode.
<b>Summary of change:</b>	⌘ The mode indices generated by the C-code are corrected.
<b>Consequences if not approved:</b>	⌘ The mode indices for the SID frame and 23.85 kbit/s frame generated by the C-code of TS 26.173 are not in line with the indices used in the generic AMR-WB interface formats explained in TS 26.201. (E.g., according to TS 26.201 the SID frame type index is 9, while the C-code of TS 26.173 produces index 10 for SID frames.) This may raise confusion and even interoperability problems when implementing the generic AMR-WB interface formats of TS 26.201.  The incorrect indices are not used in the encoding-decoding process itself in the C-code of TS 26.173. Therefore, the correction has no impact to the bit-exactness of the AMR-WB C-code.

<b>Clauses affected:</b>	⌘ bits.h and cnst.h files										
<b>Other specs affected:</b>	<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> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

## 1) Change in bits.h

### Before the change:

```
static const Word16 nb_of_bits[NUM_OF_MODES] = {
    NBBITS_7k,
    NBBITS_9k,
    NBBITS_12k,
    NBBITS_14k,
    NBBITS_16k,
    NBBITS_18k,
    NBBITS_20k,
    NBBITS_23k,
    NBBITS_24k,
    NBBITS_24k,
    NBBITS_SID};
```

### After the change:

```
static const Word16 nb_of_bits[NUM_OF_MODES] = {
    NBBITS_7k,
    NBBITS_9k,
    NBBITS_12k,
    NBBITS_14k,
    NBBITS_16k,
    NBBITS_18k,
    NBBITS_20k,
    NBBITS_23k,
    NBBITS_24k,
NBBITS_24k,
    NBBITS_SID};
```

## 2) Change in cnst.h

### Before the change:

```
#define MODE_7k      0
#define MODE_9k      1
#define MODE_12k     2
#define MODE_14k     3
#define MODE_16k     4
#define MODE_18k     5
#define MODE_20k     6
#define MODE_23k     7
#define MODE_24k     8
#define MRDTX        10
#define NUM_OF_MODES 11          /* see bits.h for bits
definition                       */
```

### After the change:

```
#define MODE_7k      0
#define MODE_9k      1
#define MODE_12k     2
#define MODE_14k     3
#define MODE_16k     4
#define MODE_18k     5
#define MODE_20k     6
#define MODE_23k     7
#define MODE_24k     8
#define MRDTX        109
#define NUM_OF_MODES 1110    /* see bits.h for bits
definition                       */
```

## CHANGE REQUEST

⌘ **TS 26.173 CR 020** ⌘ rev **1** ⌘ 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  Core Network

<b>Title:</b>	<span>⌘</span> Incorrect definition of vector nb_of_bits		
<b>Source:</b>	<span>⌘</span> TSG-SA WG4		
<b>Work item code:</b>	<span>⌘</span> AMRWB	<b>Date:</b>	<span>⌘</span> 2004-12-14
<b>Category:</b>	<span>⌘</span> <b>A</b> Use <u>one</u> of the following categories: <i>F</i> (correction) <i>A</i> (corresponds to a correction in an earlier release) <i>B</i> (addition of feature), <i>C</i> (functional modification of feature) <i>D</i> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		<b>Release:</b> <span>⌘</span> REL-6 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

<b>Reason for change:</b>	<span>⌘</span> One line has been erroneously repeated in the AMR-WB C-code (contained in TS 26.173) in the definition of vector nb_of_bits. This results in a wrong mode index to be generated for the SID mode and a superfluous index for the 23.85 kbit/s mode.
<b>Summary of change:</b>	<span>⌘</span> The mode indices generated by the C-code are corrected.
<b>Consequences if not approved:</b>	<span>⌘</span> The mode indices for the SID frame and 23.85 kbit/s frame generated by the C-code of TS 26.173 are not in line with the indices used in the generic AMR-WB interface formats explained in TS 26.201. (E.g., according to TS 26.201 the SID frame type index is 9, while the C-code of TS 26.173 produces index 10 for SID frames.) This may raise confusion and even interoperability problems when implementing the generic AMR-WB interface formats of TS 26.201.  The incorrect indices are not used in the encoding-decoding process itself in the C-code of TS 26.173. Therefore, the correction has no impact to the bit-exactness of the AMR-WB C-code.

<b>Clauses affected:</b>	<span>⌘</span> bits.h and cnst.h files										
<b>Other specs affected:</b>	<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> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></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 <span>⌘</span>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<b>Other comments:</b>	<span>⌘</span>										

## 1) Change in bits.h

### Before the change:

```
static const Word16 nb_of_bits[NUM_OF_MODES] = {
    NBBITS_7k,
    NBBITS_9k,
    NBBITS_12k,
    NBBITS_14k,
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    NBBITS_18k,
    NBBITS_20k,
    NBBITS_23k,
    NBBITS_24k,
    NBBITS_24k,
    NBBITS_SID};
```

### After the change:

```
static const Word16 nb_of_bits[NUM_OF_MODES] = {
    NBBITS_7k,
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    NBBITS_16k,
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    NBBITS_20k,
    NBBITS_23k,
    NBBITS_24k,
NBBITS_24k,
    NBBITS_SID};
```

## 2) Change in cnst.h

### Before the change:

```
#define MODE_7k      0
#define MODE_9k      1
#define MODE_12k     2
#define MODE_14k     3
#define MODE_16k     4
#define MODE_18k     5
#define MODE_20k     6
#define MODE_23k     7
#define MODE_24k     8
#define MRDTX        10
#define NUM_OF_MODES 11          /* see bits.h for bits
definition                       */
```

### After the change:

```
#define MODE_7k      0
#define MODE_9k      1
#define MODE_12k     2
#define MODE_14k     3
#define MODE_16k     4
#define MODE_18k     5
#define MODE_20k     6
#define MODE_23k     7
#define MODE_24k     8
#define MRDTX        109
#define NUM_OF_MODES 1110    /* see bits.h for bits
definition                       */
```

## CHANGE REQUEST

⌘ **TS 26.204 CR 010** ⌘ rev **-** ⌘ Current version: **5.2.0** ⌘

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

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

<b>Title:</b>	⌘ Incorrect definition of vector nb_of_bits		
<b>Source:</b>	⌘ TSG-SA WG4		
<b>Work item code:</b>	⌘ AMRWB	<b>Date:</b>	⌘ 2004-12-14
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ REL-5
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)	

<b>Reason for change:</b>	⌘ In the AMR-WB floating point C-code (contained in TS 26.204), the definitions of MRDTX and NUM_OF_MODES are changed to be consistent with TS 26.201 and TS 26.173.
<b>Summary of change:</b>	⌘ The definitions of mode index and the number of modes in the floating point C-code (TS 26.204) are corrected.
<b>Consequences if not approved:</b>	⌘ The definitions for mode indices and the number of modes for the SID frame generated by the floating point C-code of TS 26.204 are not in line with the indices used in the generic AMR-WB interface formats explained in TS 26.201. (E.g., according to TS 26.201 the SID frame type index is 9, while the C-code of TS 26.204 produces index 10 for SID frames. Also according to TS 26.173 the number of modes is 10, while the C-code of TS 26.204 produces 11 as the number of modes) This may raise confusion and even interoperability problems when implementing the generic AMR-WB interface formats of TS 26.201.

<b>Clauses affected:</b>	⌘ dec_if.c, enc_dtx.c, enc_if.c, enc_main.c files										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="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> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

## 1) Change in dec\_if.c, enc\_dtx.c, enc\_if.c, enc\_main.c files

### Before the change:

```
#define MRDTX 10
```

### After the change:

```
#define MRDTX 9
```

## 2) Change in dec\_if.c

### Before the change:

```
#define NUM_OF_MODES 11
```

### After the change:

```
#define NUM_OF_MODES 10
```

## CHANGE REQUEST

⌘ **TS 26.204 CR 009** ⌘ rev **1** ⌘ Current version: **5.2.0** ⌘

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

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

<b>Title:</b>	⌘ Incorrect definition of vector nb_of_bits		
<b>Source:</b>	⌘ TSG-SA WG4		
<b>Work item code:</b>	⌘ AMRWB	<b>Date:</b>	⌘ 2004-12-14
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-6
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)	

<b>Reason for change:</b>	⌘ In the AMR-WB floating point C-code (contained in TS 26.204), the definitions of MRDXTX and NUM_OF_MODES are changed to be consistent with TS 26.201 and TS 26.173.
<b>Summary of change:</b>	⌘ The definitions of mode index and the number of modes in the floating point C-code (TS 26.204) are corrected.
<b>Consequences if not approved:</b>	⌘ The definitions for mode indices and the number of modes for the SID frame generated by the floating point C-code of TS 26.204 are not in line with the indices used in the generic AMR-WB interface formats explained in TS 26.201. (E.g., according to TS 26.201 the SID frame type index is 9, while the C-code of TS 26.204 produces index 10 for SID frames. Also according to TS 26.173 the number of modes is 10, while the C-code of TS 26.204 produces 11 as the number of modes) This may raise confusion and even interoperability problems when implementing the generic AMR-WB interface formats of TS 26.201.

<b>Clauses affected:</b>	⌘ dec_if.c, enc_dtx.c, enc_if.c, enc_main.c files										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										



## 1) Change in dec\_if.c, enc\_dtx.c, enc\_if.c, enc\_main.c files

### Before the change:

```
#define MRDTX 10
```

### After the change:

```
#define MRDTX 9
```

## 2) Change in dec\_if.c

### Before the change:

```
#define NUM_OF_MODES 11
```

### After the change:

```
#define NUM_OF_MODES 10
```