3GPP TSG-SA Codec Working Group

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Source: **Ericsson**
Title: **Usage of Error patterns for WB-AMR Subjective Experiments**
Document for: **Discussion, decision and inclusion in document WB-7a**
Agenda Item:

1 Introduction

Document 'Processing Functions for WB-AMR Subjective Experiments (WB-7a)' currently does not specify how to use of the channel error patterns both for applications A, B and application E. This document proposes an update of section 8 (Error patterns) of WB-7a. In particular, it is intended to specify the usage of the error pattern files with time offsets depending on the name of the processed speech file.

8. Error Patterns

Application A, B:

Source: ETSI server [Nortel Networks]
Location: /tech-org/smg/Document/smg11/ smg11_amr_wb [tbc]
Format: Annex C
Files: q_wb_ab.zip

The archive *q_wb_ab.zip* contains the following files:

tu3ifh04.qwp, tu3ifh07.qwp, tu3ifh10.qwp, tu3ifh13.qwp, tu3ifh16.qwp, tu3ifh19.qwp, tu3ifh100.qwp

See next section for information on using the static error patterns.

Usage of static error patterns for applications A and B and EFR reference:

The mapping of static error pattern files by error condition for applications A and B and EFR reference is given in Table **1**.

Table 1: Mapping of static error patterns for applications A, B and EFR reference by error condition.

Condition	Error pattern
EC4	tu3ifh04.qwp
EC7	tu3ifh07.qwp
EC10	tu3ifh10.qwp
EC13	tu3ifh13.qwp
EC16	tu3ifh16.qwp
EC19	tu3ifh19.qwp
No errors	tuifh100.qwp

For applications A and B and the EFR reference *all* conditions that require the insertion of channel errors should be processed using the static common error patterns displayed in **Table 1**, i.e. the static common error patterns should be used for both the AMR-WB codec in application A and B and the GSM EFR reference codec. In order to make processing scripts less complicated also the no errors conditions will be simulated with a pseudo error pattern containing no errors (tuifh100.qwp).

A different segment of the static error patterns will be used for each talker. The start positions as a function of talker are given in Table 2.

Table 2: Mapping of static error patterns segments as a function of talker.

Talker	Start position/bursts
male 1	1000
female 1	2600
male 2	4200
female 2	5800

For example, when processing error condition EC7 through the EFR GSM reference codec with speech from female 2, the call to the error insertion device is as follows:

```
ed_iface bitstream decoded tu3ifh07.qwp -s 1450
```

Note, that the value of 1450 is obtained by dividing the start position in bursts (5800) by the number of bursts per frame (4).

Application E:

Source: ETSI server [Ericsson for UL, Nokia for DL]
Location: /tech-org/smg/Document/smg11/ smg11_amr_wb [tbc]
Format: Annex D
Files: q_wb_e.zip
The archive *q_wb_e.zip* contains the following files:

ep_e1.qfe, ep_e1.qrb, ep_e2.qfe, ep_e2.qrb, ep_e3.qfe, ep_e3.qrb, ep_e4.qfe, ep_e4.qrb, ep_e5.qfe, ep_e5.qrb
See next section for information on using the WCDMA error patterns.

Usage of WCDMA error patterns for application E:

The mapping of WCDMA error pattern files by error condition for applications E is given in Table **1**.

Table 3: Mapping of static error patterns for applications E

Condition	FER file	RBER file
EP_E_1	ep_e1.qfe	ep_e1.qrb
EP_E_2	ep_e2.qfe	ep_e2.qrb
EP_E_3	ep_e3.qfe	ep_e3.qrb
EP_E_4	ep_e4.qfe	ep_e4.qrb
EP_E_5	ep_e5.qfe	ep_e5.qrb

For application E *all* conditions should be processed using the common WCDMA channel error patterns displayed in **Table 3**. In order to make processing scripts less complicated also the no errors condition (EP_E_1) will be simulated with a pseudo error pattern containing no errors (ep_e1.qfe, ep_e1.qrb).

A different segment of the WCDMA channel error patterns will be used for each talker. The start positions as a function of talker are given in **Table 4**.

Table 4: Mapping of WCDMA channel error patterns segments as a function of talker.

Talker	Start position/frames
male 1	250
female 1	650
male 2	1050
female 2	1450

For example, when processing error condition EP_E_2 for application E with speech from female 1, the call to the error insertion device is as follows:

```
wcdma_eid  -classA <ActualClassA_bitnumber> -maxClassB <MaxClassB_bitnumber>
          -offset 650 bitstream_in bitstream_out ep_e2.qfe ep_e2.qrb
```