

OsmoBTS - Bug #3510

Make sure the ECU (Error Concealment Unit) is working correctly

08/29/2018 07:50 AM - fixeria

Status:	New	Start date:	08/29/2018
Priority:	Normal	Due date:	
Assignee:	tnt	% Done:	0%
Category:	osmo-bts-trx		
Target version:			
Spec Reference:			

Description

In 69d0d506775c82eb2bde66fe748100a94a3173a0 "osmo-bts-trx: perform error concealment for FR frames", the ECU (Error Concealment Unit) was introduced. In short, if one (or more) speech frame is lost, one may experience some unpleasant audio effects. The ECU is used to avoid such effects.

While working on audio support in OsmocomBB, I have discovered that the libosmocoding API actually produces decoded **speech frames in RTP format**, and I guess the ECU implementation may expect **speech frames in canonical format**.

I think it makes sense to:

- clarify, which frame format is expected by the libosmocoding's ECU FR implementation?
 - add some comments there (I couldn't find any);
- manually test with a regular phone (by dripping TCH bursts somehow);
- add some TTCN-3 testing coverage;

History

#1 - 10/20/2018 07:34 PM - laforge

- Assignee set to tnt

#2 - 05/15/2019 03:26 PM - tnt

The RTP order and "canonical order" are the same (and different from the order "on-the-air" where bits are priority shuffled). Only difference is the "marker" in the first 4 bits, but we never use the canonical format anywhere.

The ECU takes a frame in RTP payload format for sure and AFAICT it works and it has a test included in libosmocore.

#3 - 05/15/2019 03:48 PM - tnt

[fixeria](https://gerrit.osmocom.org/c/libosmocore/+/14051) I submitted <https://gerrit.osmocom.org/c/libosmocore/+/14051> to improve the documentation.

Other than that, AFAICT the ECU works "fine" (i.e. as I understand GSM 06.11)