

## OsmoBTS - Feature #1855

### provide actual BER or C/I values from osmo-bts-trx into the PCU

11/18/2016 10:03 PM - laforge

<b>Status:</b> Resolved	<b>Start date:</b> 11/18/2016
<b>Priority:</b> Urgent	<b>Due date:</b>
<b>Assignee:</b> fixeria	<b>% Done:</b> 100%
<b>Category:</b> osmo-bts-trx	
<b>Target version:</b> osmo-bts-trx refresh	
<b>Spec Reference:</b>	
<b>Description</b> see fo reexample 4b76a323b3bb71f8d3f4dc7439ecd9bad0f13bcf which introduces various FIXMEs explaining what's missing.	
<b>Related issues:</b>	
Related to OsmoPCU - Bug #3395: Uplink CS/MCS control is broken osmo-pcu is u...	<b>Resolved</b> <b>07/14/2018</b>
Related to OsmoBTS - Bug #1616: osmo-bts-trx / osmo-bts-octphy doesn't provid...	<b>Resolved</b> <b>02/23/2016</b>

#### History

##### #1 - 07/15/2018 05:20 AM - laforge

- Related to Bug #3395: Uplink CS/MCS control is broken osmo-pcu is used with osmo-bts-trx/osmo-trx added

##### #2 - 08/24/2018 03:49 PM - laforge

- Related to Bug #1616: osmo-bts-trx / osmo-bts-octphy doesn't provide C/I information to PCU added

##### #3 - 08/24/2018 03:55 PM - laforge

##### #4 - 09/30/2018 10:59 AM - laforge

- Priority changed from Normal to High

##### #5 - 10/20/2018 07:33 PM - laforge

- Assignee set to tnt

##### #6 - 04/25/2019 03:11 PM - laforge

[tnt](#), any news here?

I just re-investigated this topic with Lynxis. The C/I value can be computed from the training sequence of each burst, where we can compare the "ideal" training sequence with the actual training sequence and then express that in dB.

As osmo-trx is already doing the correlation against the training sequence, it may make sense to do it there. In fact, detectBurst() appears to already return the complex normalized amplitude of the correlation of the training sequence, which is probably almost exactly the value we're interested in here? If this is true, we should probably extend the trx protocol to provide the data to osmo-bts-trx, rather than having osmo-bts-trx do another correlation against the training sequence...

##### #7 - 05/14/2019 04:25 PM - tnt

I got the math worked out that computes a value that might be the C/I ... (at least it seems to have the right properties and it's also in the right range of value).

<http://git.osmocom.org/osmo-trx/commit/?h=tnt/ci&id=d40f11962a4d0e2c0ea9e3bde4c568c6c4b62a12>

How/Where to actually pass it all the way to the PCU is TBD.

##### #8 - 05/14/2019 06:06 PM - ipse

tnt wrote:

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range of value).

<http://git.osmocom.org/osmo-trx/commit/?h=tnt/ci&id=d40f11962a4d0e2c0ea9e3bde4c568c6c4b62a12>

How/Where to actually pass it all the way to the PCU is TBD.

Great to finally see some progress here :)

By "right properties" - have you tested increasing interference to check that it's correctly accounted?

Do you have test vectors which could be used as a test case when/if someone decides to write an optimized version of the code?

**#9 - 05/14/2019 06:42 PM - tnt**

I checked that :

- It's independent of scaling (so if you multiply the input vector by any value, it doesn't change the result, except for 'float' precision of course).
- Adding noise tends to decrease the value. I say "tends" because it's all based on only 16 samples ... which doesn't provide much averaging at all, so I ran it through thousands of runs, adding noise to some off the air captures and just looked at the shape of the graph.

**#10 - 05/16/2019 03:19 PM - tnt**

I think it was [pespin](#) and [fixeria](#) were discussing how to extend the TRX protocol ?  
Just ping me when you came up with that extended protocol and where to plug that value ...

**#11 - 05/16/2019 07:55 PM - fixeria**

- *Blocked by Feature #4006: TRX protocol: wind of change added*

**#12 - 06/26/2019 09:13 PM - fixeria**

- *Tracker changed from Bug to Feature*
- *Status changed from New to In Progress*
- *Assignee changed from tnt to fixeria*
- *Priority changed from High to Urgent*
- *% Done changed from 0 to 80*

Please see: <https://gerrit.osmocom.org/#/c/osmo-bts/+14613/>

**#13 - 07/03/2019 06:56 AM - fixeria**

- *Status changed from In Progress to Feedback*
- *% Done changed from 80 to 90*

I finally wrote a TTCN-3 test case:

<https://gerrit.osmocom.org/#/c/osmo-ttcn3-hacks/+14660/>

Waiting for all changes to be merged now...

**#14 - 07/16/2019 08:13 AM - fixeria**

- *% Done changed from 90 to 100*

All required changes have been merged. The TTCN-3 test case passes.

P.S. I cannot mark it as resolved for some reason.

**#15 - 07/16/2019 05:13 PM - fixeria**

- *Blocked by deleted (Feature #4006: TRX protocol: wind of change)*

**#16 - 07/16/2019 05:13 PM - fixeria**

- *Status changed from Feedback to Resolved*