

## OsmoBSC - Bug #3659

### LCLS directly between BTSs

10/17/2018 09:22 AM - laforge

<b>Status:</b>	In Progress	<b>Start date:</b>	10/17/2018
<b>Priority:</b>	Urgent	<b>Due date:</b>	
<b>Assignee:</b>	msuraev	<b>% Done:</b>	40%
<b>Category:</b>	RTP/Media		
<b>Target version:</b>	3GPP LCLS		
<b>Spec Reference:</b>			
<b>Description</b>			
<p>So far, we have implemented LCLS on the BSC level, i.e. in case of a local switch, the RTP stream still goes from BTS A to the BSC-colocated MGW and from there to BTS B. This removes the RTP/voice from A, but not from the Abis side.</p> <p>In deployments where there are e.g. 3 BTS (A,B,C) at one site, back-hauled via Abis to a BSC in a remote data center, we want the voice to go directly between BTS A and BTS B, without going to the MGW at the BSC.</p> <p>This basically means that we close the loop not inside our osmo-mgw via MGCP, but that we close it between the two involved BTSs.</p> <p>Even in a single-remote-BTS use case, this helps in cases where both calling and called subscribers are attached to that same BTS.</p>			
<b>Related issues:</b>			
Related to OsmoBSC - Feature #1602: BSC side of LCLS (local call local switch...		<b>Resolved</b>	<b>02/23/2016</b>
Related to OsmoBSC - Bug #3413: TC_lcls_connect_clear does not pass anymore.		<b>In Progress</b>	<b>07/23/2018</b>
Related to OsmoMSC - Feature #2487: MSC side of LCLS (local call local switch...		<b>In Progress</b>	<b>09/03/2017</b>
Related to OsmoBSC - Feature #3586: support LCLS for inter-BSC handover		<b>New</b>	<b>09/24/2018</b>
Related to OsmoMSC - Feature #1609: Inter-BSC hand-over is missing (MSC side)		<b>In Progress</b>	<b>11/21/2016</b> <b>11/21/2016</b>
Related to OsmoMGW - Feature #3429: idea: auto-cleanup endpoints after long p...		<b>Resolved</b>	<b>07/28/2018</b>
Related to OsmoMGW - Feature #3783: Make conn-timeout compatible with LCLS		<b>New</b>	<b>02/06/2019</b>

### History

#### #1 - 10/17/2018 10:33 AM - laforge

- Priority changed from Normal to Urgent

#### #2 - 10/22/2018 01:18 PM - msuraev

- Related to Feature #1602: BSC side of LCLS (local call local switching) as per the 3GPP specs added

#### #3 - 10/24/2018 10:05 AM - msuraev

- Status changed from New to In Progress

Preparing test setup using fake\_trx/virtphy to check signalling locally.

#### #4 - 10/29/2018 11:31 AM - msuraev

On a related note: right now TTCN-3 TC\_lcls\_connect\_clear() fails due to commit 6fe125294b219a519c77f7140de26870d17bf40a in OsmoBSC. Reverting just this commit doesn't fix it though so it's also affected by some changes in related commits as well.

The failing part in TC\_lcls\_connect\_clear is probably CONN\_A.receive(tr\_RSL\_DATA\_REQ(? , tr\_RslLinkID\_DCCH(0), l3\_rr\_chan\_rel)) due to missing "DATA REQuest (DTAP) (RR) Channel Release" packet - see difference in .pcap from <https://jenkins.osmocom.org/jenkins/view/TTCN3/job/ttcn3-bsc-test/369/> and <https://jenkins.osmocom.org/jenkins/view/TTCN3/job/ttcn3-bsc-test/370/>

**#5 - 11/01/2018 10:37 AM - msuraev**

- % Done changed from 0 to 30

Implemented "lcls-mode bts-loop" in Gerrit 11552, corresponding tests are in 11559 - WIP. Related preparation patches are under review.

**#6 - 11/01/2018 10:39 AM - msuraev**

- Related to Bug #3413: TC\_lcls\_connect\_clear does not pass anymore. added

**#7 - 11/01/2018 10:41 AM - msuraev**

- Related to Feature #2487: MSC side of LCLS (local call local switching) as per the 3GPP specs added

**#8 - 11/08/2018 10:16 AM - msuraev**

- Checklist item [ ] add TTCN tests for RSL MDCX added  
Checklist item [ ] add RSL MDCX to BSC LCLS added  
Checklist item [ ] handle LCLS-MGW in handover added  
Checklist item [ ] handle LCLS-BTS in handover added  
Checklist item [ ] add TCCN test handover with LCLS-MGW added  
Checklist item [ ] add TCCN test handover with LCLS-BTS added

- % Done changed from 30 to 20

**#9 - 11/19/2018 01:33 PM - msuraev**

- Checklist item [x] add TTCN tests for RSL MDCX set to Done

**#10 - 11/19/2018 01:35 PM - msuraev**

- % Done changed from 20 to 30

Almost all related libosmocore code is merged (except for Gerrit 11703), TTCN-3 tests for RSL MDCX are merged but will fail until Gerrit 11552 and 11550 are merged.

**#11 - 01/17/2019 04:06 PM - msuraev**

- Checklist item [x] add RSL MDCX to BSC LCLS set to Done

**#12 - 01/17/2019 04:10 PM - msuraev**

- % Done changed from 30 to 40

Both BTS and MGW variants are tested using unmerged (yet) code from [#2487](#) and work fine. Handover-related cases are pending on completion of handover implementation in [#3586](#). What remains in addition to handover is to check that:

- LCLS break works as intended (needs corresponding MSC code)
- both variants work fine when closing the loop between phones connected to different BTS (using osmocombb "stick" feature to use explicit ARFCN)

Remaining patches: libosmocore 7, OsmoBSC 4.

**#13 - 01/17/2019 04:10 PM - msuraev**

- Related to Feature #3586: support LCLS for inter-BSC handover added

**#14 - 01/17/2019 04:26 PM - msuraev**

- Related to Feature #1609: Inter-BSC hand-over is missing (MSC side) added

**#15 - 01/24/2019 11:42 AM - msuraev**

LCLS-BTS is not working when 2 phones are connected to different BTS: the loop is established but but no voice can be heard. Investigation is in progress.

**#16 - 01/31/2019 09:32 AM - msuraev**

- *Related to Feature #3429: idea: auto-cleanup endpoints after long period of inactivity? added*

**#17 - 02/14/2019 02:43 PM - msuraev**

- *Related to Feature #3783: Make conn-timeout compatible with LCLS added*