

## OsmoSGSN - Bug #1818

### luPS: CN should lu Release in certain situations

10/12/2016 02:10 AM - neels

<b>Status:</b> New	<b>Start date:</b> 10/12/2016
<b>Priority:</b> Normal	<b>Due date:</b>
<b>Assignee:</b>	<b>% Done:</b> 0%
<b>Category:</b> lu interface	
<b>Target version:</b>	
<b>Spec Reference:</b>	
<b>Description</b>	
<p>I observe sporadic data service failure which is solved by reconnecting the UE.</p> <p>The situation looks like this:</p> <p>The UE keeps sending GMM Attach Requests and the SGSN keeps answering with GMM Attach Accepts (more often than it receives Attach Requests even), but the process never goes on after that. I notice the lack of lu Releases.</p> <p>When I put the phone in flight mode and back online, an lu Release (and complete UE DE-REGISTER) is done, and after that 3G data service works immediately and well.</p> <p>The SGSN never sends and lu Release on own accord nor invalidates the UE conn unless the UE asks for an lu Release.</p> <p>There should be timeouts and the SGSN should do an lu Release on a given conn at some point. The UE will then re-connect with another InitialUE message and hopefully fix things.</p> <p>There is possibly another hidden root cause for this situation, but this issue calls for sane lu Release timeouts by the SGSN.</p>	
<b>Related issues:</b>	
Related to OsmoSGSN - Bug #1977: 3G luPS is unreliable	<b>Closed</b> <b>03/09/2017</b>
Related to OsmoSGSN - Bug #3302: implement a FSM for GMM Attach Request	<b>Closed</b> <b>05/29/2018</b>
Related to OsmoSGSN - Bug #3908: "PS Activation" takes long time - missing lu...	<b>Resolved</b> <b>04/07/2019</b>

### History

#### #1 - 10/12/2016 11:10 AM - neels

- Description updated

#### #2 - 01/12/2017 02:25 PM - laforge

- Assignee set to daniel

#### #3 - 01/23/2017 01:27 PM - neels

- File *iups\_sporadic\_failure.pcapng* added

just now I tested again and saw luPS not working most of the time. I remember that previous tests also had this sometimes, so it seems to be some race depending on when the user requests to contact the internet.

Attached find a pcap filtered 'sctp || gtp', obtained with nano3G. In the middle there loading xkcd.com worked, numerous other attempts resulted in "This web page is not available".

#### #4 - 03/09/2017 04:58 PM - daniel

Looking at the trace I can see that the difference between working and not working ist that the SecurityModeControl is answered with an UnsuccessfulOutcome (#618, #650,#689, #720, others) instead of a SuccessfulOutcome (#197, #219,#267).

We had this before, it seems to be an issue with the KeyValue and KeyStatus not matching what the UE expects.

The successful attempts are when using a new key value with status new (packets 207, 219) and this old key with status old (264, 267).

Then for some reason the next SecurityModeCommand has a different (new) key value, but the key status is still old (612). This then is answered with a reject (618). After we get into this the same dance continues with subsequent packets.

We should do two things:

- if we receive a SecurityModeReject we need to choose a new key and reset the state to new in order to resync
- fix the behaviour where a new key can be sent with keystate old

**#5 - 03/09/2017 05:01 PM - neels**

- Related to Bug #1977: 3G luPS is unreliable added

**#6 - 08/30/2017 10:40 PM - neels**

daniel wrote:

- if we receive a SecurityModeReject we need to choose a new key and reset the state to new in order to resync
- fix the behaviour where a new key can be sent with keystate old

This is likely a solution for [#1977](#), excellent.

This issue here will be about more aggressive lu Release on luPS.

**#7 - 12/10/2017 08:10 PM - laforge**

- Category set to lu interface

**#8 - 03/16/2018 07:51 PM - laforge**

- Assignee changed from daniel to sysmocom

**#9 - 05/30/2018 03:01 PM - laforge**

- Tags set to 3G

**#10 - 05/31/2018 01:08 PM - neels**

- Related to Bug #3302: implement a FSM for GMM Attach Request added

**#11 - 04/09/2019 11:26 AM - laforge**

- Related to Bug #3908: "PS Activation" takes long time - missing lu-Release Command after Attach Complete added

**#12 - 04/09/2019 11:27 AM - laforge**

the issue has been worked around for the attach with a patch from [#3908](#). However, let's keep this issue open for the more comprehensive fix with timeouts as described in the comments above.

**#13 - 04/09/2019 11:28 AM - laforge**

- Assignee changed from sysmocom to lynxis

**#14 - 05/03/2019 12:00 AM - laforge**

The release procedure on the SGSN side should be performed as follows:

- transmit of lu-ReleaseCommand, start of a timer
  - somehow blocking/preventing any further communication on this connection. Possibly by FSM state transition
- reception of lu-ReleaseComplete (successful), or timeout
- disconnection/termination of SCCP connection using N-DISCONNECT.req towards SCCP user SAP

See Section 8.5 lu Release of TS 25.413 as well as section 4.5.1.1.3 of TS 25.410.

**#15 - 01/08/2020 10:47 PM - laforge**

- Assignee deleted (lynxis)

**Files**

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iups\_sporadic\_failure.pcapng

179 KB

01/23/2017

neels