

OsmoBTS - Feature #1615

make use of OML Alert

02/23/2016 04:25 PM - laforge

Status: Closed	Start date: 02/23/2016
Priority: High	Due date:
Assignee: msuraev	% Done: 100%
Category:	
Target version:	
Spec Reference:	
Description	
A-bis OML has the capability of reporting alarms / errors towards the BSC for centralized reporting. We don't really use this in OsmoBTS so far.	
The messages involved in this are	
<ul style="list-style-type: none">• NM_MT_REP_OUTST_ALARMS• NM_MT_REP_OUTST_ALARMS_ACK• NM_MT_REP_OUTST_ALARMS_NACK• NM_MT_FAILURE_EVENT_REP• NM_MT_SET_ALARM_THRES• NM_MT_SET_ALARM_THRES_ACK• NM_MT_SET_ALARM_THRES_NACK	
We should make use of this mechanism to report various alerms/errors to the BSC, including	
<ul style="list-style-type: none">• over-temperature of any of the on-board temperature sensors• possible status information from the RF transmitter (too much reflected power measured, indicating antenna/cabling problems)• power supply related errors• protocol / PHY related errors	
Related issues:	
Related to OsmoBSC - Feature #1857: aggregate and report OML ALERT messages r...	New 11/18/2016

History

#2 - 06/22/2016 10:19 PM - laforge

- Status changed from New to In Progress

there is some work to that regard contributed by Minh from Nutaq, see <https://gerrit.osmocom.org/#/c/255/> and related patches in that series.

#3 - 06/22/2016 10:24 PM - laforge

- Assignee set to neels

#4 - 07/11/2016 01:22 PM - neels

- Status changed from In Progress to New

Was assigned to me in "In Progress" state, but this ticket is not in my immediate awareness yet. Setting to "New". ("Stalled" would be more accurate)

#5 - 11/09/2016 10:14 AM - laforge

- Assignee changed from neels to msuraev

please check the related patches by minh in gerrit, which unfortunately have been abandoned. Let's get at least the core support for generating alarms cleaned up and merged, and then add a few basic alarm cases.

#6 - 11/09/2016 10:23 AM - laforge

- Priority changed from Normal to High

#7 - 11/18/2016 10:09 PM - laforge

- Related to Feature #1857: aggregate and report OML ALERT messages received from BTSs added

#8 - 01/02/2017 05:36 PM - msuraev

- Status changed from New to In Progress
- % Done changed from 0 to 10

Basic support has been sent for review in gerrit # 1519-1522.

#9 - 01/04/2017 01:08 PM - msuraev

- Status changed from In Progress to Stalled

Example BTS alerts were sent for review in gerrit 1525.

#10 - 01/09/2017 09:19 AM - msuraev

- % Done changed from 10 to 20

Support for simple OML alerts have been merged: so far we only supports "push" mode - when BTS face particular error Alarm is immediately sent to BSC. What's missing is:

- support for "pull" mode (NM_MT_REP_OUTST*)
- threshold support (NM_MT_SET_ALARM_THRES*)
- propagation of PCU alarms to BSC via BTS
- sensors error related alarms

The last 2 points are rather straightforward, the first 2 will require some state/configuration stored somewhere. Would be nice to have detailed example of what kind of alarms and how shall be reported in "pull" mode above.

#11 - 01/09/2017 12:39 PM - laforge

On Mon, Jan 09, 2017 at 09:19:48AM +0000, msuraev [REDMINE] wrote:

Support for simple OML alerts have been merged

great.

What's missing is:

- support for "pull" mode (NM_MT_REP_OUTST*)
- threshold support (NM_MT_SET_ALARM_THRES*)

I don't think we need the above two.

- propagation of PCU alarms to BSC via BTS
- sensors error related alarms

yes, those two are quite more important. The PCU interface can easily be extended b an additional message type for those alarms.

However, in terms of environmental/sensor alarms, we need a way how an external process can originate/create such alarms.

Our old idea for this was to extend the osmobts-mgr into something that includes an 'OML router / proxy' functionality between the BSC and osmo-bts. This would also be required for stacked sysmBTS acting as one multi-TRX BTS, but there never was a pressing need to support this.

So I think in the context of this ticket, a simpler and less intrusive mechanism would probably make sense. Maybe a CTRL command to generate/push an OML ALERT from external program? Any ideas?

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- Harald Welte <laforge@gnumonks.org> <http://laforge.gnumonks.org/>

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"Privacy in residential applications is a desirable marketing option."
(ETSI EN 300 175-7 Ch. A6)

#12 - 01/09/2017 01:05 PM - msuraev

laforge wrote:

However, in terms of environmental/sensor alarms, we need a way how an external process can originate/create such alarms.

Is there a way to access those programmatically from *bts code? How such events are handled now? Is there some script/command which I should adopt to use ctrl interface?

So I think in the context of this ticket, a simpler and less intrusive mechanism would probably make sense. Maybe a CTRL command to generate/push an OML ALERT from external program? Any ideas?

Sounds good to me - it's also useful for debugging.

#13 - 01/09/2017 02:20 PM - laforge

msuraev wrote:

laforge wrote:

However, in terms of environmental/sensor alarms, we need a way how an external process can originate/create such alarms.

Is there a way to access those programmatically from *bts code? How such events are handled now? Is there some script/command which I should adopt to use ctrl interface?

See sysmobts_mgr_temp.c for example on how this is done in the sysmoBTS 2050.

In general, we should have some generic way how other processes can report alarms. The rest ist then up to the particular hardware vendor.

#14 - 01/11/2017 12:52 PM - msuraev

- Status changed from Stalled to In Progress

Gerrit # 1567-1570 were submitted for review.

#15 - 01/16/2017 11:52 AM - msuraev

- Status changed from In Progress to Stalled

#16 - 01/19/2017 02:55 PM - msuraev

- % Done changed from 20 to 30

Gerrit 1629, 1895-1897 have been merged. Gerrit 1630 is under review.

#17 - 03/03/2017 12:37 PM - msuraev

- % Done changed from 30 to 60

#18 - 03/06/2017 05:38 PM - msuraev

- Status changed from Stalled to In Progress

- % Done changed from 60 to 70

Gerrit 1630 has been merged, alarms from PCU are underway.

#19 - 03/07/2017 05:32 PM - msuraev

- Checklist item [x] protocol / PHY related errors added
Checklist item [] power supply related errors added
Checklist item [] status information from the RF transmitter added
Checklist item [x] over-temperature of any of the on-board temperature sensors added

#20 - 03/07/2017 05:55 PM - msuraev

- Checklist item [] propagation of PCU alarms to BSC via BTS added

- Status changed from In Progress to Stalled

We have 2 options for propagating PCU alarms to BSC:

- 1) use bts' ctrl interface from pcu to send alarms as external
- 2) extend bts-pcu socket protocol with oml-specific messages

Not sure which one would be better.

#21 - 03/07/2017 06:54 PM - laforge

Hi Max,

On Tue, Mar 07, 2017 at 05:55:49PM +0000, msuraev [REDMINE] wrote:

We have 2 options for propagating PCU alarms to BSC:

- 1) use bts' ctrl interface from pcu to send alarms as external
- 2) extend bts-pcu socket protocol with oml-specific messages

Not sure which one would be better.

I think it's better to extend the bts-pcu protocol, as this can then be identical in pcu+bts setups as well as pcu+bsc setups (ericsson).

#22 - 03/09/2017 11:50 AM - msuraev

How can we programmatically obtain "power supply related errors" and "status information from the RF transmitter"? How is that handled now?

#23 - 03/09/2017 06:15 PM - laforge

On Thu, Mar 09, 2017 at 11:50:16AM +0000, msuraev [REDMINE] wrote:

How can we programmatically obtain "power supply related errors" and "status information from the RF transmitter"? How is that handled now?

this mostly relates only to the SOB-BTS, where such features were planned. We can ignore this for now.

#24 - 03/13/2017 02:48 PM - msuraev

- Checklist item deleted (power supply related errors)
Checklist item deleted (status information from the RF transmitter)

#25 - 03/20/2017 12:58 PM - msuraev

- % Done changed from 70 to 80

OsmoPCU part for supporting OML alerts has been merged in gerrit 2071, OsmoBTS part is under review in gerrit 2086 and 2087.

#26 - 04/10/2017 08:42 AM - msuraev

2086 is merged, 2087 is under review.

#27 - 04/10/2017 03:08 PM - msuraev

- % Done changed from 80 to 90

Gerrit 2087 has been merged, 2288 and 2289 are under review.

#28 - 05/08/2017 08:37 AM - msuraev

- Checklist item [x] propagation of PCU alarms to BSC via BTS set to Done

#29 - 05/08/2017 08:39 AM - msuraev

- Status changed from Stalled to Resolved

- % Done changed from 90 to 100

Everything has been merged.

#30 - 05/14/2017 11:09 AM - laforge

- Status changed from Resolved to Closed