

OsmoPCU - Feature #4048

PCU support for sending ETWS primary notifications

06/05/2019 10:58 AM - laforge

Status: Resolved	Start date: 06/05/2019
Priority: Urgent	Due date:
Assignee: osmith	% Done: 100%
Category:	
Target version:	
Spec Reference:	
Description	
ETWS (Earthquake and Tsunami Warning System) doesn't only use SMSCB, but also contains parts that ensure notification of all MS as quickly as possible. Specifically, this means	
<ul style="list-style-type: none">• there's a PACKET APPLICATION INFO message sent over PACCH to all MS with TBF established	
This ticket is about implementing the required features in the PCU.	
We need to	
<ul style="list-style-type: none">• receive the ETWS primary notification message from the BTS via the PCU interface• construct the PACKET APPLICATION INFO message from it• send it via PACCH to all MS in packet dedicated mode	
One interesting question is that the specs don't appear to describe how often this is to be re-transmitted (if at all). I suppose as we're not operating RLC/MAC in reliable mode, messages might get lost and they have to be re-transmitted? For how long? Do we also need to send it to MS who are establishing TBF at some later point? For how long?	
Related issues:	
Related to OsmoBTS - Feature #4047: BTS support for generating ETWS primary n...	Resolved 06/05/2019
Related to OsmoBSC - Feature #4046: BSC support for generating ETWS primary n...	Resolved 06/05/2019

History

#1 - 06/05/2019 10:58 AM - laforge

- Related to Feature #4047: BTS support for generating ETWS primary notifications added

#2 - 06/05/2019 10:58 AM - laforge

- Related to Feature #4046: BSC support for generating ETWS primary notifications added

#3 - 09/05/2019 10:54 AM - laforge

[lynxis](#) getting back to your question of tuesday: Of course they also specified how the phones in TBF established mode will receive the primary notification. I apparently knew this three months ago when writing this ticket but have meanwhile forgotten about it. As the BTS support of [#4047](#) is in review now, PCU will be up next.

#4 - 09/05/2019 11:48 AM - laforge

Relevant sections of 44.060 are 8.1.7.2 (indicating its a PACKET APPLICATION INFORMATION message) and 11.2.47 for the actual structure of PACKET APPLICATION INFORMATION.

The sections about PCCCH / PACKET PAGING are not relevant.

So what we need to do is to

- transfer the complete (typically 56 bytes) of ETWS primary notification from BTS to PCU over PCUIF
- generate + send PACKET APPLICATION INFORMATION as per 11.2.47 to every MS that has a TBF established.

The specs are not clear if the message shall be sent once or multiple times. As we use RLC/MAC in confirmed (acknowledged) mode, I expect once is sufficient, as RLC/MAC would take care of retransmissions.

This compares to the situation on the CS side, where the ETWS primary notification is also sent only once over L3 through every dedicated channel (by the BSC), and LAPDm handles any retransmissions as needed.

#5 - 09/05/2019 12:35 PM - laforge

- Assignee changed from laforge to osmith
- Priority changed from Normal to Urgent

as of <https://gerrit.osmocom.org/c/osmo-bts/+/15420>, osmo-bts passes the ETWS Primary Notification into the PCU. The task remaining is to actually build the PACKET APP INFO as per TS 11.2.47 and to iterate over all UE with active TBF and send that message to them.

Care should be taken that if possible, this message precedes any other data that we may have queued for the given MS. I'm not familiar with the inner details of how the queues for the MSs work, but I'm confident it must be possible to insert at beginning rather than append at the end somehow.

#6 - 09/06/2019 01:34 PM - osmith

- Status changed from New to In Progress
- % Done changed from 0 to 30

#7 - 09/06/2019 02:51 PM - osmith

WIP branch: osmith/pcu-etws

#8 - 09/09/2019 03:24 PM - osmith

- % Done changed from 30 to 90

<https://gerrit.osmocom.org/c/osmo-pcu/+/15459>

#9 - 09/16/2019 06:38 AM - osmith

- Status changed from In Progress to Resolved
- % Done changed from 90 to 100