**OsmoPCU - Feature #5198**

**Support GPRS on Ericsson RBS**

**07/13/2021 04:36 PM - pespin**

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<td>Target version:</td>
<td>RBS2000 with BSC-located PCU</td>
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**Description**

References of older work on this topic:

https://git.osmocom.org/osmo-el2tpd/
https://git.osmocom.org/osmo-pcu/log/?h=lynxis/siu
https://osmocom.org/versions/118/
https://osmocom.org/issues/1823
https://osmocom.org/issues/4881

**History**

#1 - 07/15/2021 11:40 AM - laforge

- Checklist item [ ] libosmo-abis: encode and decode GPRS/EGPRS TRAU frames in E1 slots/subslots added
- Checklist item [ ] libosmo-abis: SYNC / timing loop for GPRS/EGPRS TRAU frames added
- Checklist item [ ] osmo-bsc: activation of PDCCH via OM2000/RSL from BSC side added
- Checklist item [ ] osmo-pcu support for opening e1 timeslots [like bsc, mgw] added
- Checklist item [ ] osmo-pcu using GPRS/EGPRS TRAU frame decoders from above added
- Checklist item [ ] osmo-pcu / osmo-bsc pcu socket interaction (paging, ...) added
- Checklist item [ ] test everything end-to-end with DUG20 added

A more easily digestible description:

- GPRS/EGPRS is fully supported within Osmocom when using non-Ericsson BTS
- E1 based BTS have the CCU in the BTS and the PCU co-located at the BSC
- RLC/MAC blocks are transferred over E1 sub-slots (16k, GPRS) or slots (64k, EDGE)
- Ericsson supports three different data formats for back-haul:
  - Classic "channelized" Abis with 64k/16k slots/sub-slots as we implement it in osmo-bsc and osmo-mgw
  - PacketAbis over TDM: E1 line is unchannelized (31 concatenated timeslots) with HDLC inside, that ~2Mbps superchannel is then used with some LAPD-style protocol to transmit OM2000, RSL, voice frames and GPRS RLC/MAC blocks
  - PacketAbis over IP: Same as above but encapsulated in a slightly modified dialect of L2TP. This is what the Ericsson SIU-02 or TCU speak; they convert from PacketAbis/TDM to PacketAbis/IP
- Osmocom has implemented GPRS-only support for PacketAbis/IP in osmo-el2tpd, tested with RBS2111 some years ago. As part of that, osmo-bsc received a PCU socket interface

For this ticket, we want to support "classic, channelized E1", so the current CS setup consisting of (DUG20, icE1usb, osmo-e1d, osmo-bsc, osmo-mgw) can be extended with PS services by osmo-pcu. I'm adding check-list items.