E1/T1 Hardware Interface (including icE1usb) - Feature #4923

DAHDI driver for icE1usb

12/27/2020 12:21 PM - laforge

<table>
<thead>
<tr>
<th>Status:</th>
<th>Resolved</th>
<th>Start date:</th>
<th>12/27/2020</th>
</tr>
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<td>Due date:</td>
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<td>Assignee:</td>
<td>laforge</td>
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<td>Spec Reference:</td>
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Description

I've been hacking up a DAHDI driver for the icE1usb, which is currently available [only] from https://github.com/osmocom/dahdi-linux/tree/laforge/icE1usb

The current code seems to be working fine

- it survives manual USB unplug/replug tests
- it survives hundreds of rmmod/insmod cycles
- it causes no CRC errors when used with e1-prbs-test over multiple hours

It has a number of missing features:

- no reporting of errors via DAHDI APIs (alarms, crc errors, ...)
- no reporting of link status via DAHDI APIs (RED/YELLOW/BLUE/...)
- no control over local/remote clock usage

Related issues:

Related to E1/T1 Hardware Interface (including icE1usb) - Bug #5379: DAHDI icE1usb locks up if channel type is changed during runtime added

Related to E1/T1 Hardware Interface (including icE1usb) - Bug #5381: icE1usb... New 01/02/2022

Related to E1/T1 Hardware Interface (including icE1usb) - Bug #5382: icE1usb... New 01/02/2022

History

#1 - 02/06/2021 09:08 AM - laforge
- Status changed from In Progress to Stalled

#2 - 12/31/2021 06:30 PM - laforge
- Related to Bug #5379: DAHDI icE1usb locks up if channel type is changed during runtime added

#3 - 01/01/2022 08:19 AM - laforge
- Checklist item [x] RED alarm on LOS set to Done

RED alarm reporting merged:

commit aebacd42e5ba4c183d62d54b39884204f5c87052 (HEAD -> laforge/icE1usb, osmocom/master, osmocom/laforge/icE1usb, apu-left/laforge/icE1usb)
Author: Harald Welte <laforge@osmocom.org>
Date: Fri Dec 31 20:17:07 2021 +0100

icE1usb: Support reporting of RED alarm via DAHDI infrastructure

We get loss-of-framing and loss-of-signal notification via USB interrupt transfers. Let's make use of this information to tell the DAHDI core [and ultimately the user] about this.

#4 - 01/01/2022 05:16 PM - laforge
- Checklist item [x] error counters/stats via DAHDI APIs set to Done
  Checklist item [x] CRC4 enable/disable set to Done
  Checklist item [x] select local/remote clock source via DAHDI set to Done

03/08/2022
commit 9fdd2e534b8de22e0e36076c8577de7be81690bb (HEAD -> laforge/icElusb, osmocom/master, osmocom/laforgelcElusb, apu-left/laforgelcElusb)
Author: Harald Welte <laforge@osmocom.org>
Date: Sat Jan 1 10:22:29 2022 +0100
icElusb: support for reporting CRC and alignment errors via DAHDI

commit 68cffb3d8f5bbe5871560629943141a0af13d727
Author: Harald Welte <laforge@osmocom.org>
Date: Sat Jan 1 09:49:01 2022 +0100
icElusb: Support TX configuration (CRC4 on/off, loopback, timing source)
This adds support of configuring the icElusb TX configuration via the standard DAHDI mechanisms.

As for YELLOW alarm, there's a WIP patch for the firmware in https://gerrit.osmocom.org/c/osmo-e1-hardware/+/26706.

#6 - 01/01/2022 08:16 PM - laforge
- Status changed from Stalled to In Progress

#7 - 01/02/2022 12:16 PM - laforge
- Related to Bug #5381: icE1usb DAHDI driver: generate YELLOW alarm towards peer added

#8 - 01/02/2022 12:17 PM - laforge
- Related to Bug #5382: icE1usb: detect all-1 pattern and report as BLUE alarm added

#9 - 01/02/2022 12:18 PM - laforge
- Checklist item [x] host repository on osmocom.org set to Done
Checklist item [x] YELLOW alarm set to Done
- Status changed from In Progress to Resolved
- % Done changed from 80 to 100

reporting of remote alarms as YELLOW alarm has been added in https://github.com/osmocom/dahdi-linux/commit/7043d46f77ee8fe633e5181f7ea22a4e051071

git repo is now [also] at https://git.osmocom.org/dahdi-linux/

remaining issues have been split into #5382 and #5381, so this ticket can be closed. The DAHDI driver exists and works reliably, AFAICT.