Cellular Network Infrastructure - Feature #4539

review timer numbers: use (negative) X-timers instead of non-existing T-timers (like T23001), and avoid collisions of X-timer numbers across osmocom programs

05/09/2020 08:31 PM - neels

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**Description**

The 3GPP specs define various timers like T3001, which we made configurable via vty using the osmo_tdef API. Later on, we introduced the use of negative timer numbers to indicate timers that are not specified by 3GPP, and called them X-timers, like X1, X2,... At that point, various invented timer numbers have already been in use, see for example timeslot_fsm.c and lchan_fsm.c in osmo-bsc: T23001 etc.

Timer numbers can be re-used in different contexts, so per se we could use X1 any number of times in different contexts. However, since we have a huge number space available for X-timers, there is no need to create "collisions" between osmocom programs. It is much clearer to just pick unused numbers for each program, sort of like our Port_Numbers.

Create one common overview of all X-timers (and while at it, why not also all T-timers) available in osmocom programs. Replace osmocom-invented T-timers with X-timers, avoid X-timer collisions between osmocom programs.

Not sure whether we should provide a backwards compat shim to still allow configuring old timer numbers, so that setting the old timer numbers actually adjusts the new ones? Or maybe just make sure that configuring the new timer number causes an error message on program start indicating the matching new X-timer to use?

**Related issues:**

Related to OsmoBSC - Bug #4538: timeslot_fsm.c: make the PDCH act/deact timeout configurable added

05/09/2020

**History**

#1 - 05/09/2020 08:32 PM - neels

- Related to Bug #4538: timeslot_fsm.c: make the PDCH act/deact timeout configurable added

#2 - 05/12/2020 11:58 AM - neels

IMO we should not use numbers like X23001 but start with lower numbers. We could think of either creating a number space for each program, like osmo-bts has X1000-X1999, osmo-bsc X2000-X2999 etc., or just start with X1 and assign the next X2, X3 etc, whichever comes along next, like we did in Port_Numbers.

#3 - 05/15/2020 06:30 AM - osmith

Thanks for creating the issue!

neels wrote:

IMO we should not use numbers like X23001 but start with lower numbers. We could think of either creating a number space for each program, like osmo-bts has X1000-X1999, osmo-bsc X2000-X2999 etc., or just start with X1 and assign the next X2, X3 etc, whichever comes along next, like we did in Port_Numbers.

I'd prefer the number space, so it's clear to which program a timer belongs.

Do we need more opinions on this (laforge, fixeria, pespin?), or can I create such a wiki page and start using these numbers in my open related osmo-bsc patch?

05/16/2020
Do we need more opinions on this (laforge, fixeria, pespin?)

I definitely like the idea of having unique 'X' timer numbers. But still, it's unclean to me how do we ensure backwards compatibility, i.e. what should we do with the existing timer numbers that are used in more than one project (e.g. X1)?

    can I create such a wiki page and start using these numbers in my open related osmo-bsc patch?

It probably makes sense to have a header file in libosmocore listing all used timers, so then we could automatically generate the wiki page from it. This way it's less likely that somebody forgets to reserve a port number, and somebody else starts to use it in another osmo-* program.

#5 - 05/15/2020 11:03 AM - pespin

I'm fine with having a unique list in a wiki page listing all X timers.

Regarding starting timers from X1 and so: I don't think it's generally a good idea (though it can be for some cases). What I mean is: Sometimes afair some of our X timers are highly related to a standard timer T, in which cases it makes sense to keep either Xn for Tn, or some value around n, specially since sometimes in standard some related timers have similar numbering.

#6 - 05/15/2020 07:55 PM - laforge

I don't have any comments on the detailed allocation

Having some systematic approach with per program number ranges and wanted associated wiki page looks like a good idea.