

OsmoBSC - Feature #4716

support handover between different codec types, like TCH/F FR1 <--> TCH/H HR1

08/18/2020 12:00 PM - neels

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|--|-------------------------------|
| Status: Stalled | Start date: 08/18/2020 |
| Priority: Normal | Due date: |
| Assignee: neels | % Done: 0% |
| Category: | |
| Target version: | |
| Spec Reference: | |
| Description The handover algorithm 2 supports congestion resolution by re-assigning within the same cell (like move from TCH/F to TCH/H) and across cells. So far, the lchan type may change between TCH/F <--> TCH/H, when the AMR codec is in use, because that can automatically adapt its bandwidth to continue a call. The aim of this issue is to also support TCH/F <--> TCH/H handovers where the codec is not AMR, i.e. {FR1,EFR} <--> HR1. First, take stock of what osmo-bsc currently does right, and what parts are missing. | |
| Related issues: Related to OsmoMSC - Feature #4717: support Handover with changing codec New 08/18/2020 | |

History

#1 - 08/18/2020 12:14 PM - neels

I tested osmo-bsc:

- apply a patch that does TCH/F <-> TCH/H handovers regardless of codec (<http://git.osmocom.org/osmo-bsc/log/?h=neels/hodec2>)
- configuration of two TCH/F and a couple TCH/H lchans, and handover algorithm 2.
- establish voice call on the two TCH/F
- then set 'handover2 min-free-slots tch/f 1'
- the congestion check moves the first TCH/F to a TCH/H lchan.

What **should** happen?

Marking 'ok:' for things that already work with current osmo-bsc, 'TODO:' for things that don't.

RSL:

- ok: Establish new lchan with HR1 codec
- ok: Perform handover dance

MGCP:

- ok: redirect the BTS-facing endpoint conn to the new lchan's RTP port
- ok: configure the BTS-facing endpoint conn to indicate the change to HR1 codec
- TODO: since osmo-mgw does not transcode, also indicate the codec change on the MSC-facing endpoint conn

BSSAP:

- TODO: After handover, a Handover Performed message should indicate the codec change.
 - the Handover Performed message is sent, but it still indicates FR1 codec being used.

MSC, out of scope for this issue:

- the MSC's MGW endpoint conns should be reconfigured to match the codec change.
- mismatching codecs are only possible for external MNCC, i.e. using a SIP PBX behind osmo-msc.
- the MNCC socket and SIP should be notified of the codec change (by updated SDP info).

#2 - 08/18/2020 12:23 PM - neels

- Related to Feature #4717: support Handover with changing codec added

#3 - 08/18/2020 12:25 PM - neels

- File handover_tch-f_to_tch-h_first_trial.pcapng added

#4 - 10/28/2020 08:21 PM - neels

- File *resolve_congestion_across_tch_types.patch* added

attaching patch as file since above link is to a branch which might get lost at some point

#5 - 10/28/2020 08:22 PM - neels

- Status changed from *In Progress* to *Stalled*

Files

| | | | |
|--|---------|------------|-------|
| handover_tch-f_to_tch-h_first_trial.pcapng | 10.1 MB | 08/18/2020 | neels |
| resolve_congestion_across_tch_types.patch | 6.89 KB | 10/28/2020 | neels |