

# Interfacing with VoIP using osmo-sip-connector

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- Project started approximately one year ago:

```
commit a1909e6c80448f3dd7b56942a5af9d4106afd2f9
Author: Holger Hans Peter Freyther <holger@moiji-mobile.com>
Date: Sun Mar 20 18:49:29 2016 +0100

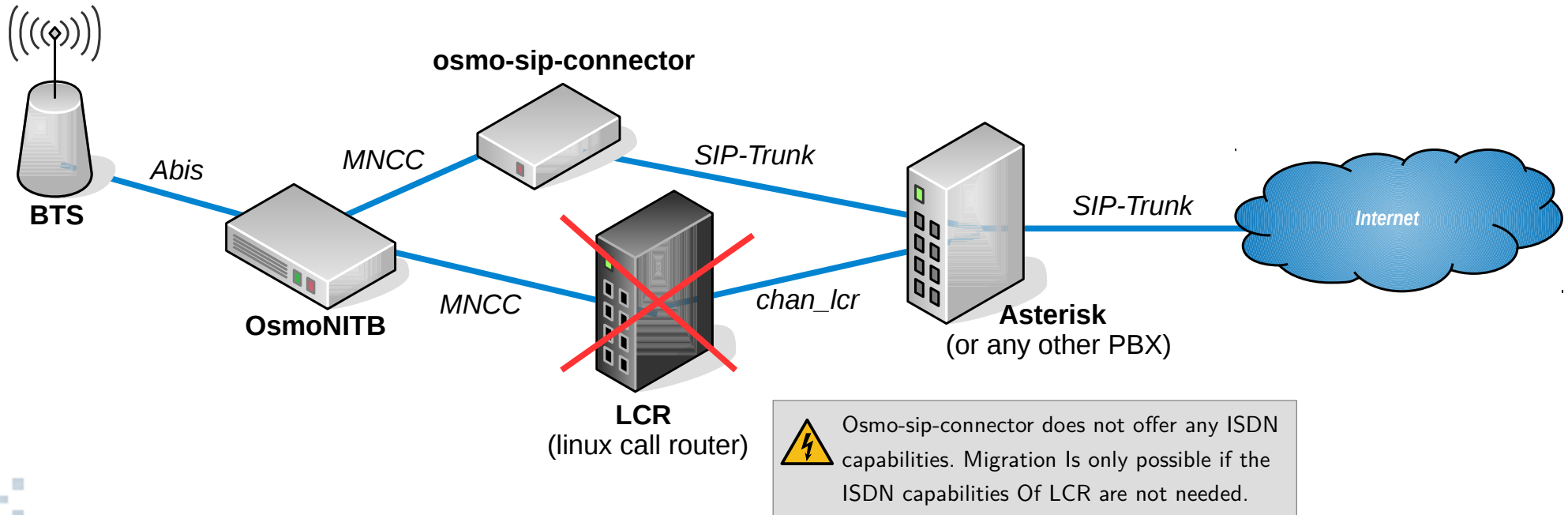
Initial commit for a MNCC to SIP gateway (and maybe auth GW too)

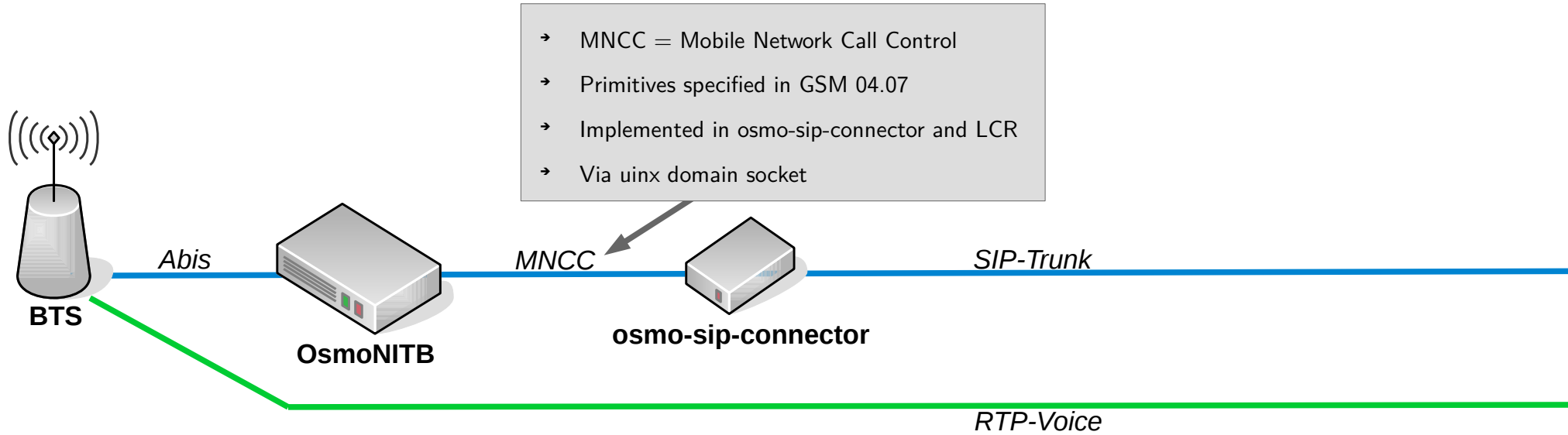
* It is written in C and using libosmovty and other data structures
* It is using sofia-sip for the SIP handling as a good library for
such a task
* It is using glib for the sofia-sip event loop integration. In the
future we can write our own root context but right now that looks
like a necessary evil. No glib usage is allowed in this code and
only sofia-glib is linked.

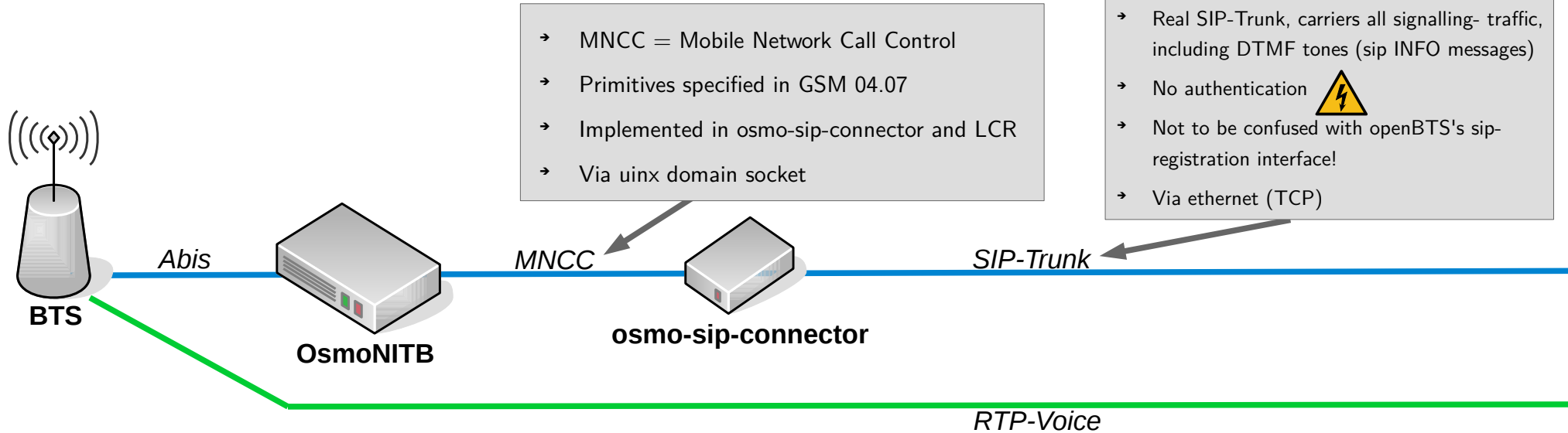
(END)
```

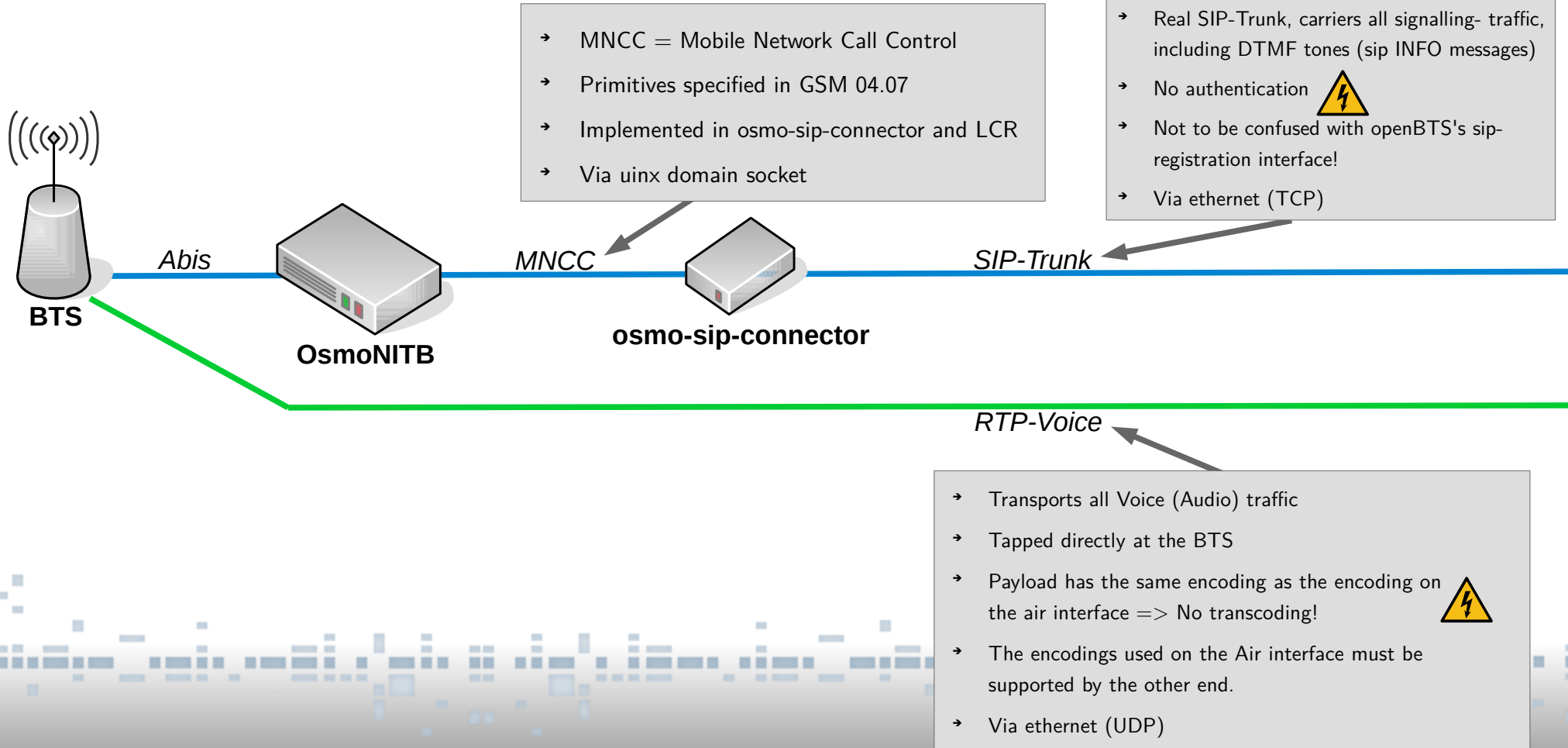
- Adds a SIP-Trunk interface to OsmoNITB and OsmoBSC, allowing to connect OsmoNITB and OsmoBSC to be connected to any Voip PBX that supports SIP-Trunks
- Replaces the rather complicated LCR approach with a much simpler to use SIP-Only solution

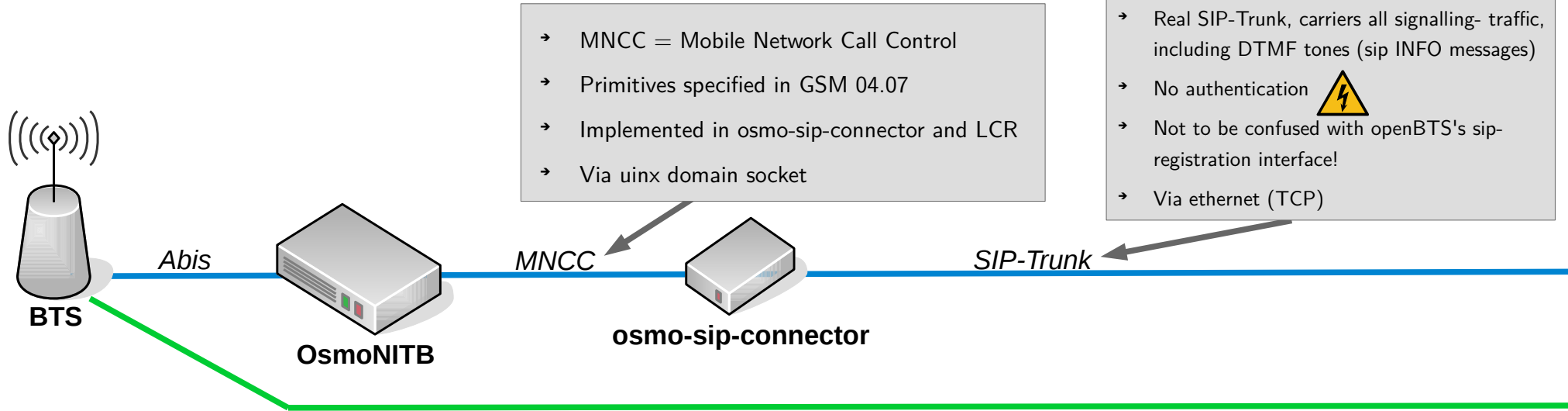
# Layout of a typical network











- MNCC = Mobile Network Call Control
- Primitives specified in GSM 04.07
- Implemented in osmo-sip-connector and LCR
- Via unix domain socket

- Real SIP-Trunk, carries all signalling- traffic, including DTMF tones (sip INFO messages)
- No authentication ⚡
- Not to be confused with openBTS's sip-registration interface!
- Via ethernet (TCP)

- Osmo-sip-connector
  - acts as a **translator** between GSM Call control and SIP
  - is **not a transcoder!**
  - implements a call control handler
  - provides industry standard interfaces to the outside world
  - has a custom, but open interface (MNCC) towards the osmocom world

- RTP-Voice
  - Transports all Voice (Audio) traffic
  - Tapped directly at the BTS
  - Payload has the same encoding as the encoding on the air interface => No transcoding! ⚡
  - The encodings used on the Air interface must be supported by the other end.
  - Via ethernet (UDP)

- OsmoNITB's internal MNCC handler is disabled and the MNCC socket interface is activated, from now on external MNCC handlers like osmo-sip-connector or LCR are able to take over call control.
- Add commandline option `-M /path/to/my/mncc-socket`
- The osmo-nitb configuration file is not touched.

Commandline:

```
osmo-nitb -c ./osmo-nitb.cfg -p ./osmo-nitb.pcap -l hlr_1.sqlite3 -M /tmp/bsc_mncc
```



## Config file: osmo-sip-connector.cfg

```
app
mnc
socket-path /tmp/bsc_mnc
sip
local 10.9.1.101 5069
remote 10.9.1.101 5060
```

## Commandline:

```
sudo osmo-sip-connector -c ./osmo-sip-connector.cfg
```

- Set up the path to your mncc-socket
- Set local sip IP-Address and port number
- Set remote (PBX) IP-Address and port number



You may only use 127.0.0.1 if osmo-sip-connector, your PBX software and osmo-bts run on the same machine!

- Start osmo-sip-connector
- Startup order does not matter

- Detailed howto and example configs can be downloaded at:  
<https://osmocom.org/projects/osmo-sip-conector/wiki/Osmo-sip-connector>