

# Re-introducing E1 in OsmoBSC

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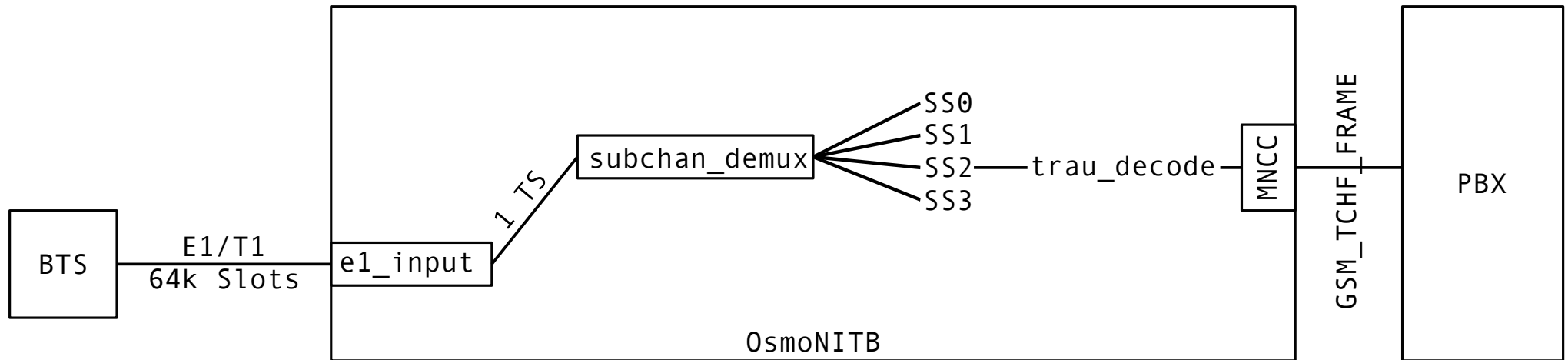
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# Intro

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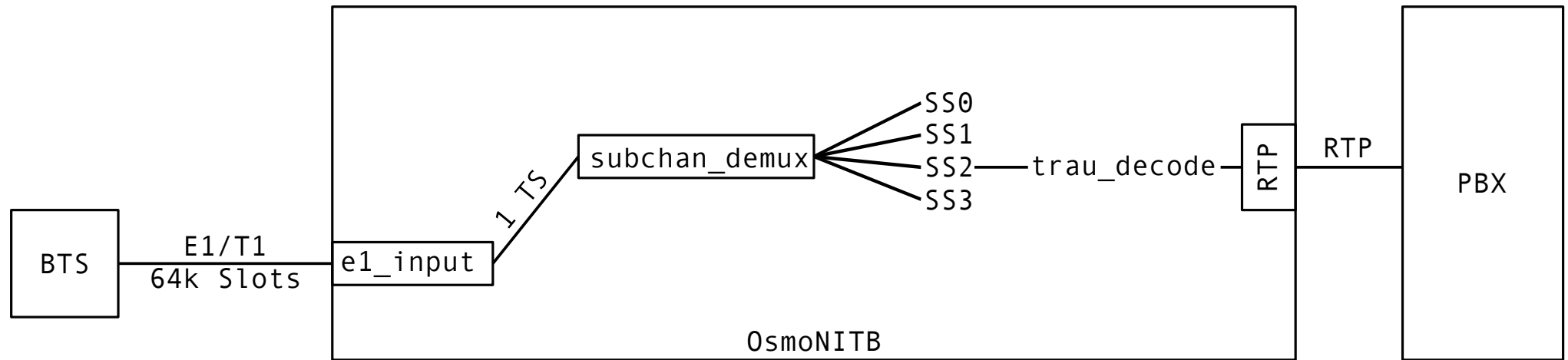
- OpenBSC (later OsmoNITB) started with E1 BTS
- until NITB Split, E1 support remained present
- even old OsmoBSC (sccplite) never had E1 BTS support
- new OsmoBSC also has no E1 BTS support
- let's change that!

# Classic OsmoNITB with E1-BTS + ext MNCC



- Abis/E1 with 16k sub-slots in 64k slots
- E1 device offers 64k timeslots only
  - 16k sub-channel mux/demux done in software
- TRAU frames in 16k sub-slots decoded (to FR/EFR codec frames)
- passed next to MNCC signaling over MNCC socket

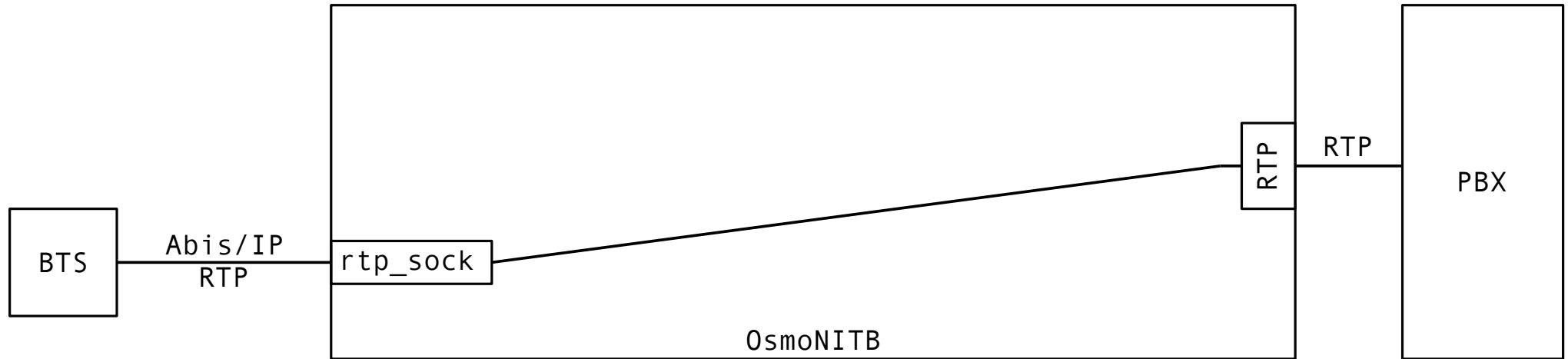
# Classic OsmoNITB with E1-BTS + ext MNCC + RTP



- just like previous example, but we generate RTP from TRAU frames
- MNCC interface is signaling only
- user voice frames handled via RTP

# Classic OsmoNITB with IP-BTS + ext MNCC + RTP proxy

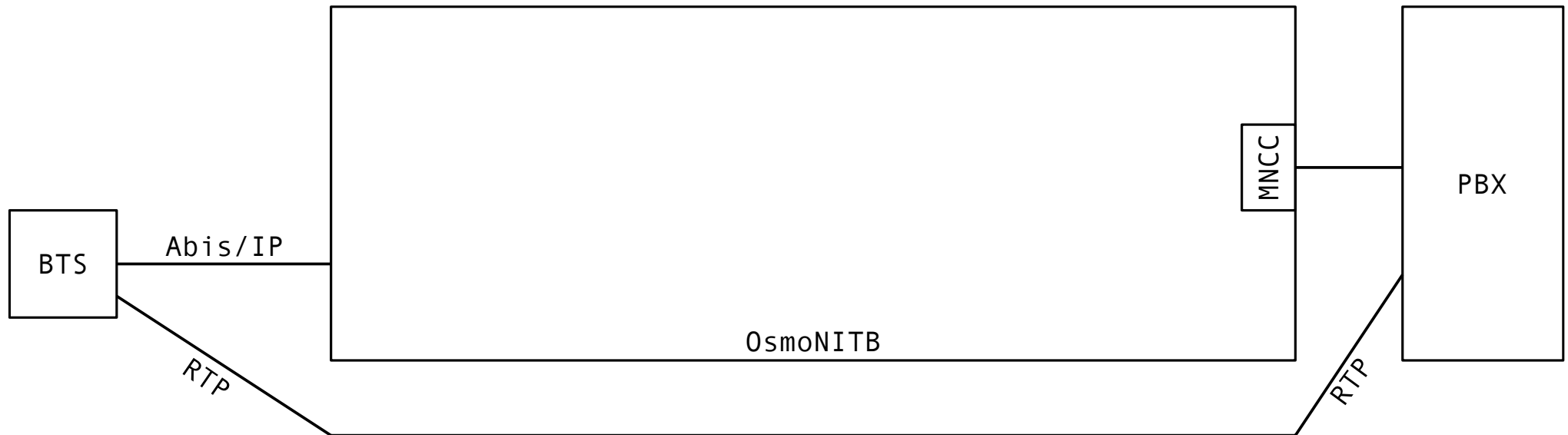
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- Abis/IP BTS use RTP transport for speech frames
- OsmoNITB is asked to provide RTP proxy functionality

# Classic OsmoNITB with IP-BTS + ext MNCC + direct RTP

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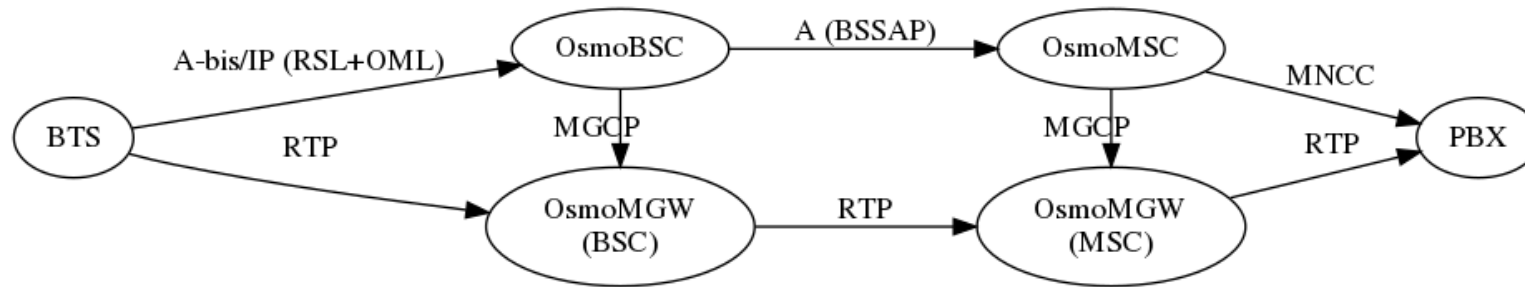


- Abis/IP BTS use RTP transport for speech frames
- OsmoNITB rtp\_proxy is disabled
- RTP data passes directly from BTS to external PBX and vice-versa

# IP-BTS User Plane in post-NITB

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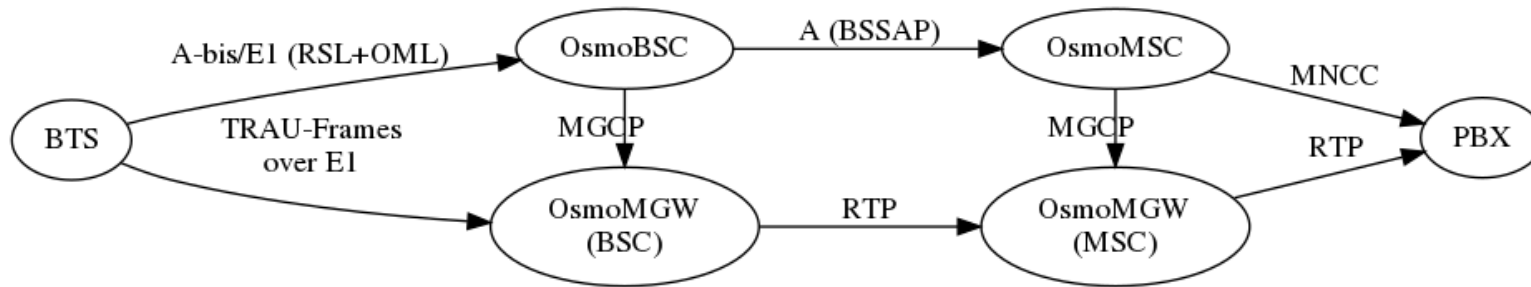
When using IP-based BTS like OsmoBTS, this looks like this:



- RTP to/from the BTS is handled by the BSC-located OsmoMGW

# E1-BTS User Plane in post-NITB

When using E1-based BTS, it should look like this:



- TRAU frames in 16k E1 sub-slots to/from the BTS are handled by the BSC-located OsmoMGW
- OsmoMGW needs real media gateway functionality from E1 sub-slots to RTP
- E1 driver needs to support single E1 span (line) that
  - opens RSL/OML LAPDm signaling on one TS from OsmoBSC
  - opens TRAU on other TS from OsmoMGW
- `osmo-bsc.cfg` states which Um TS maps to which E1 TS/SS
- `osmo-bsc` uses MGCP EP naming scheme like `E1/Line1/TS4/SS2@mgw`



# EOF

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