infrastructure review: GSM

osmocom, CCCamp 2019, 2019-08-25, Mildenberg

infrastructure review: GSM

running a mobile network

Mission Impossible: mobile telephony in Germany, outside of cities, on the field.

we do it using the Open Source MObile COMmunication stack (osmocom)

osmocom

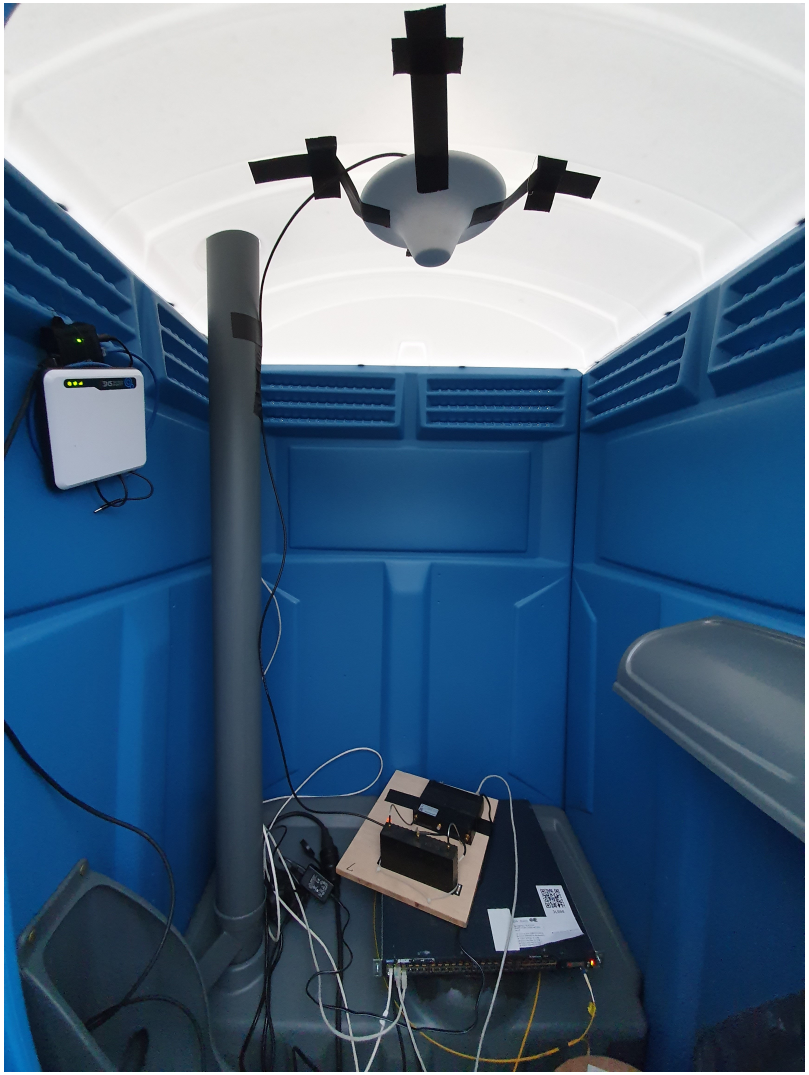
all you need is a SIM card, either from a previous conference, or a new on at the

POC.

flat rate for 3 euros, including outgoing and incoming calls.

base stations

small base stations hidden in toilets



base stations

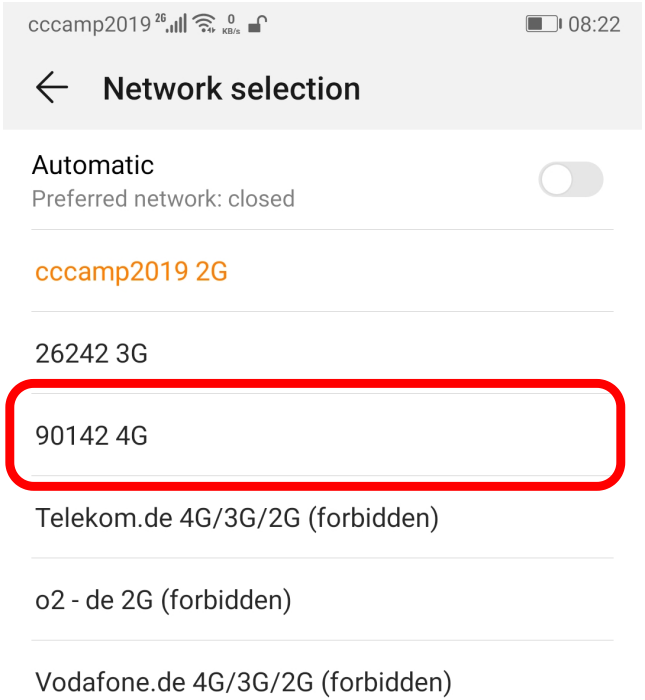
10x 2G/GSM base stations

base stations

17x 3G/UMTS base stations

4G/LTE

This year we also had 4G/LTE for the first time (except for iPhones)



4G/LTE

6x 4G/LTE base stations

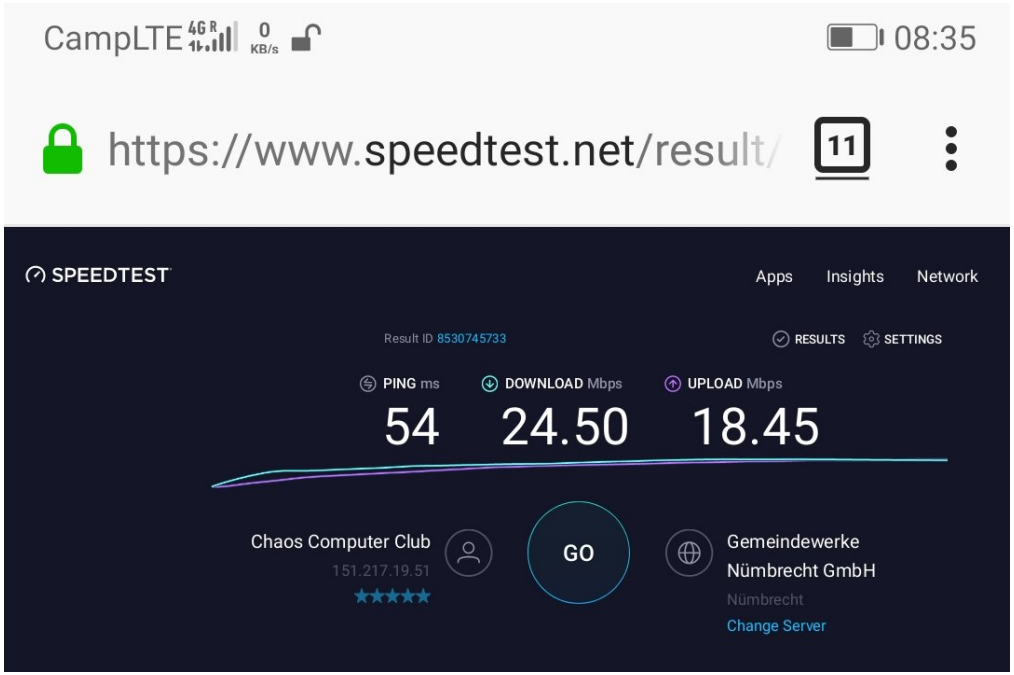
4G/LTE

backend: NextEPC MME + osmocom HLR

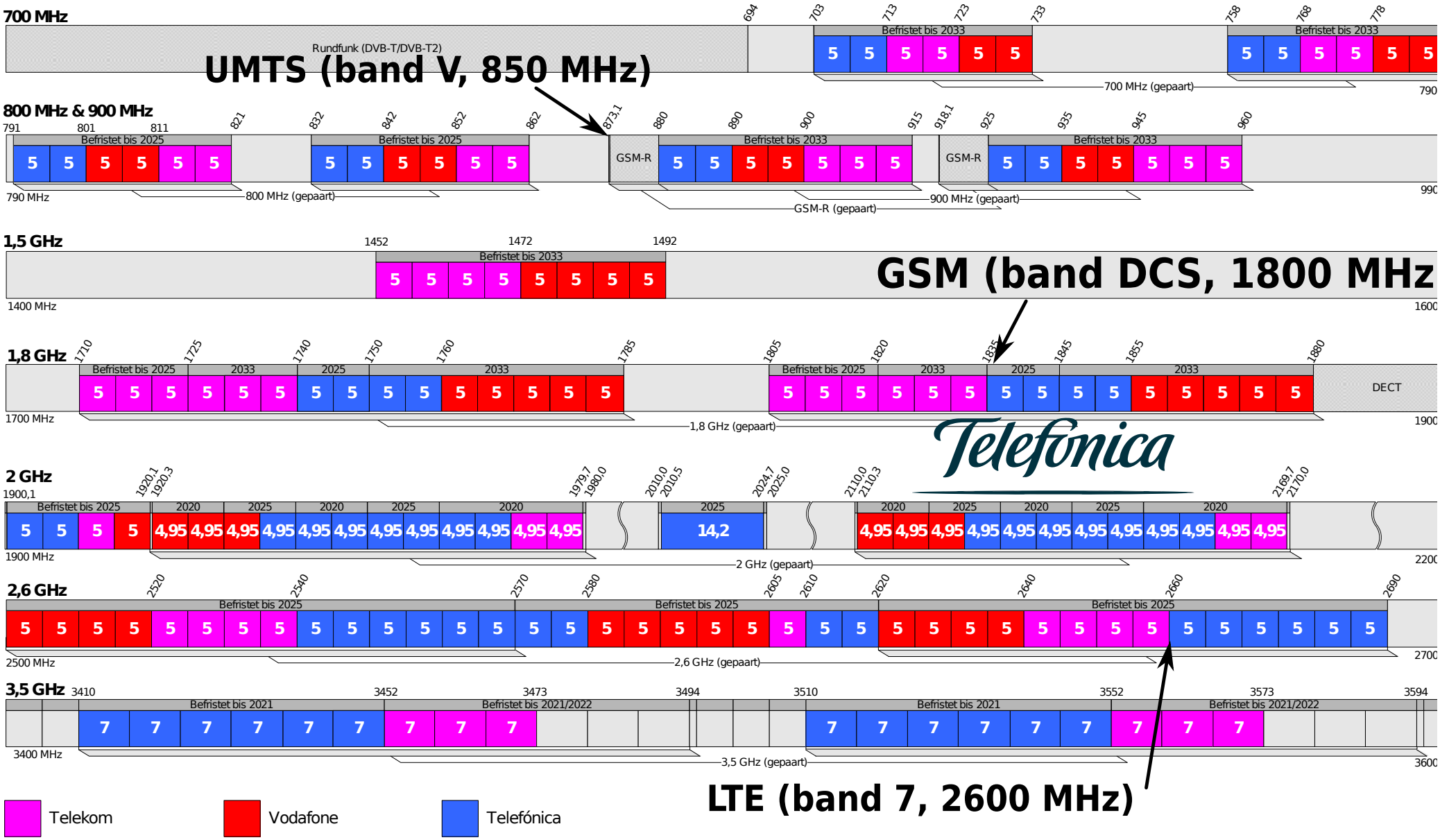
4G/LTE

backend: NextEPC MME + osmocom HLR

with decent speed



licensed frequencies



rollout

setup timeline:

- Day 0: voice ready
- Day 1: LTE ready
- Day 2: UMTS data ready

rollout

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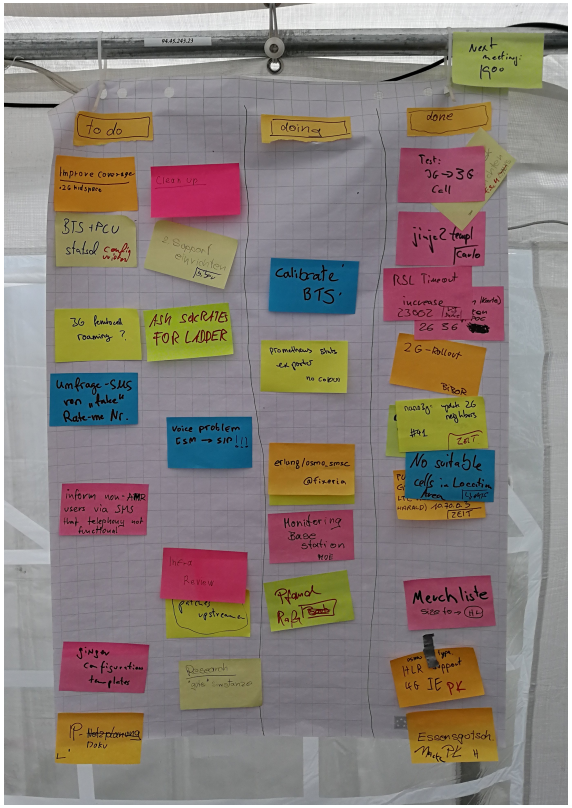
subscriber activity:

- ~ 1000 subscribers connected at least once
- ~ 800 registered subscribers
- ~ 750 cards sold (request keys at gsmkeys@fe80.eu)
- ~ 600 subscribers "camping" on the network at all times

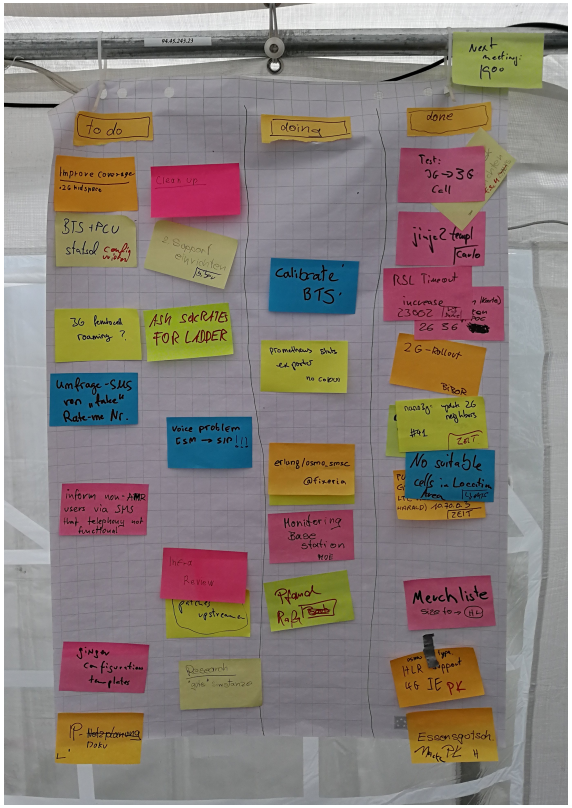
operation

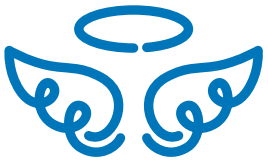
smooth operation



operation

smooth operation





new this year: angel-driven help desk

TODO

2G/3G audio codec mismatch (we don’t transcode yet)

4G/LTE calls/SMS (using Circuit Switched Fall Back)

questions ?