# Meshnet Meeting 2025/01

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| **Date** | 16/10/2021 |
| **Time** | 20:00 - 22:00 |
| **Location** | NextCloud |
| **Attendees** | orimpe, virii, xbr |
| **Minutes Recording** | xbr |

## Agenda

- Freifunk
- DEA

## Minutes

### Freifunk

Updates regarding firmware updates:

- v2023.2.5
  - has been released on **experimental** for more than a week
  - built for **beta** and **stable**, soon to be signed and slowly released.

### DEA

DEA has shown interest in technologies used by MeshNet, we have been given a list of locations, and asked to draft a quote.

#### Overview

There are 14 locations of interest, times 2, for both technologies: Meshtastic and MeshCore. Some places have much better coverage than others. orimpe says we should do 3 dB antennas in that context.

The choice of hardware is one that has to be done wisely:

- some locations have better coverage
- some locations do not have power and require solar
- mixing hardware is preferable for reliability, but having the same hardware everywhere makes it easier.

In the context of power, out of the 14 locations, 4 of them have UPSes, the other 10 require solar power.

orimpe has curated the list of locations by impactfulness (reach), which can be used to prioritize locations over others.

orimpe thinks we *could consider* avoiding Meshtastic **if** it's difficult to install and balloons the cost too much. After all, we are talking about 2 devices per location, for 14 locations.

### Considerations

433 MHz amateur radio band supports exists for MeshCore and Meshtastic, this would allow for higher transmit power and reach. If we wanted to do 433 MHz, the operator need require an amateur radio license, and each node would require registration and approvol from the ILR, the institude handling radio things in Luxembourg.

Ownership and liability is another consideration: we cannot control what happens on the network (e.g. abuse), we need to be allowed to install and operate the hardware, and what if hardware malfunctioned and brought a UPS down. It would be benefitial to have something written down and signed. One possibility is that it is our hardware and they have it installed and use it.

Regarding updates: MeshCore, for instance, has quite fast progress; there is an update very couple of weeks. This is fine as long as they are backwards compatible, but this is not a guarantee; what if they need to be updated, how would we go about that? This is where update boxes could come useful.

Fiber is present at some locations, but not all of them. This is relevant for MQTT, where we should also work on forwarding our MQTT stuff towards Meshtastic's (minutes writer note: what about MeshCore?). Regarding the map, these would be installed on DEA locations, which could be considered critical infrastructure, as such it does impact mapping. virii says we could do 1.8km approxmiation.

### Hardware specifics

Good antennas are critical: according to orimpe, a 3dB antenna is a duplication in transmit power. As such, for impactful locations, a good antenna is very important. If we want a good antenna, e.g. n-type, we need to add €50 to €70. Note that this is not relevant to all locations, but probably half.

- For UPS-powered locations:
  - LILYGO T-Beam SUPREME (UBLOX) is the most preferable.
  - Heltech v4 provides variety in the hardware and works quite well with MeshCore (according to orimpe).
- For Solar locations:
  - Heltech's MeshTower ($140 excl. fees & shipping) comes with additional mounting options, which can be useful for some locations.
  - RakWireless' WisMesh Repeater (€300) can provide variety in hardware.
- Other:
  - if PoE is available, RakWireless is preferable, as they have special devices.
  - a **3D printed car node** can be built for €50 (incl. everything), but it depends on the specifics.
  - a **reset box** can be built for €35 to €40, and can be put at the bottom of poles. If pressed twice, it sets itself into reset mode, and we can plug USB into it. This is only relevant for

antenna poles, and would be quite useful at some locations.

### Quote

See private page.

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