The Next Steps

RF Links

Once you're connected into AREDN over the internet, the next step is to add an RF link. For that, a second device can be placed outside and connected back to the hAP via CAT5e. For this, you can use:

- A Ubiquiti Rocket M5 radio with a sector antenna, or a dish antenna,
- An integrated MikroTik dish and radio,
- A MikroTik LDF with a repurposed dish,
- ...

- Only equipment listed on the Supported Devices' page will work with the AREDN firmware.
- See here for more details.

Mapping

These sites are useful to model line of sight and the Fresnel zone:

- ISP Design Center (formerly link.ui)
- radiofresnel

Nodes

See the setups page for a list of sector antennas currently online.

NPR

> NPR (New Packet Radio) is a custom radio protocol, designed to transport bidirectional IP trafic over 430MHz radio links (ham radio frequencies 420-450MHz). This protocol is optimized for “point to multipoint” topology, with the help of managed-TDMA. Bitrate is 50 to 500kbps (net, effective bitrate), depending on the RF bandwidth chosen. –Hackaday Project Page

See our NPR page for more details on how to integrate this with AREDN.

HaLow

> HaLow (IEEE 802.11ah) is a Wi-Fi standard designed to operate in sub-GHz spectrum, including the 902–928 MHz ISM band (and amateur allocations near 900 MHz where permitted). It is optimized for long-range links and better penetration through foliage and terrain compared to 2.4/3.4/5.8 GHz microwave. Typical throughput is in the hundreds of kbps to a few Mbps depending on conditions, with a default 1 MHz channel width. HaLow supports standard IP networking, making it directly usable with AREDN mesh. Current support is available in the latest babel-only nightly builds.

See the HaLow Page for more information