



Arm Solutions at Lightspeed

# Linux-wpan

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# Agenda

- SubGHz
- UWB
- MLME Support Gaps
- Userspace interfaces: WiSUN, OpenThread, ZBOSS, etc
- lowpand PAN coordinator - requirements

# SubGHz

- **SubGHz**
- **Partial PHY layer support and a driver does exist**
- **Lacking on anything mac802154 or specific MLME?**
- **Zephyr has support and could be used for testing**
- **Requirements from BeagleConnect?**

# UWB

- Ultra Wide Band
- No PHY layer support
- No driver/hardware support
- mac802154
- Location / ranging?
- Any interest on this in linux-wpan?

# MLME Support

- Current status and gaps
- Beacon sending, scanning (active & passive), association & dis-association
- IEEE 802.15.4-2020 updates
- e.g. extended PHR, MTU up to 2048 octets
- Additional bands and more PHY's (lacks hardware/driver support)

# Userspace Interfaces

- Offering PHY and MAC capabilities to userspace stacks
- Candidates could be WiSUN, OpenThread, ZBOSS, etc
- Many would prefer their own PHY and MAC on an exposed low level device driver
- Fallback to AF\_PACKET
- Linux-wpan always wanted them to use the kernel PHY and MAC
  
- Any middle ground?
- Can we expect them to use our stack if we are lacking needed functionality?
- How important?

# lowpand

- PAN coordinator user-space service
- Anyone with a working PoC?
- Gathering requirements
  - Use device coordinator interface
  - Send beacons
  - Handle association requests
  - Short address handling, leases
  - Node availability (with LQI?)
  - Compression scheme availability (e.g. GHC through 6CIO)

# Thank You!

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To discuss this further you can reach the Linux-wpan project at:  
[linux-wpan@vger.kernel.org](mailto:linux-wpan@vger.kernel.org)

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