MeshNetics

Easy Wireless for Things

MeshNetics OpenMAC
Open Source Software for Easy Networking

OpenMAC is MeshNetics' open source implementation of IEEE802.15.4 Media Access Control (MAC) layer. MAC layer forms the basis of MeshNetics eZeeNet software stack, and provides support to peer-to-peer and star network topologies. OpenMAC has been ported to several AVR-based platforms, including MeshNetics' own ZigBit OEM Module and Atmel's RF Accessory (RZ502) and Demonstration (RZ200) Kits. It is supplied complete with code samples and device drivers for each of the supported platforms.

Benefits

- Full compliance with IEEE802.15.4
- Easy WSN application development
- Convenient C API
- Reference design for HW platforms
- Wire replacement

Applications Examples

- Building automation & monitoring
- Industrial monitoring
- Automated meter reading (AMR)
- HVAC monitoring & control
- Wireless sensor networks
- Asset tracking

Supported Hardware

- MeshNetics ZigBit RF modules
- MeshNetics MeshBean Development Boards
- Atmel RF Accessory Kit (RZ502)
- Atmel RF Demo Kit (RZ200)

Topologies Supported

Star   Peer-to-Peer

- ● Coordinator
- ● Devices
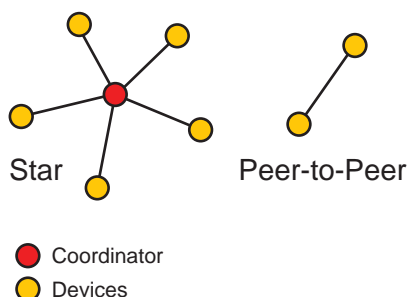
With MeshNetics OpenMAC you can:

- **develop** custom WSN applications around MeshNetics ZigBit modules if you do not require full functionality of MeshNetics eZeeNet Software Stack.
- **modify** OpenMAC internals for your specific application needs.
- **start** application development on top of MAC with thoroughly documented sample applications.
- get a **convenient C API** if you are not familiar with TinyOS or nesC programming language (technologies at the core of OpenMAC).

OpenMAC is production code and is included, virtually unaltered, in MeshNetics eZeeNet software. It is heavily commented and comes with extensive documentation.

OpenMAC and eZeeNet Software Stack

OpenMAC is MeshNetics' implementation of IEEE 802.15.4 MAC layer. The MAC layer handles all access to the physical radio channel and is responsible for the following

- Generating network beacons if the device is a coordinator;
- Synchronizing to the beacons;
- Supporting sensor network association and disassociation;
- Supporting device security;
- Mediating access to radio channel shared by multiple peers;
- Handling and maintaining the GTS mechanism;
- Providing a reliable link between two peer MAC-capable devices;
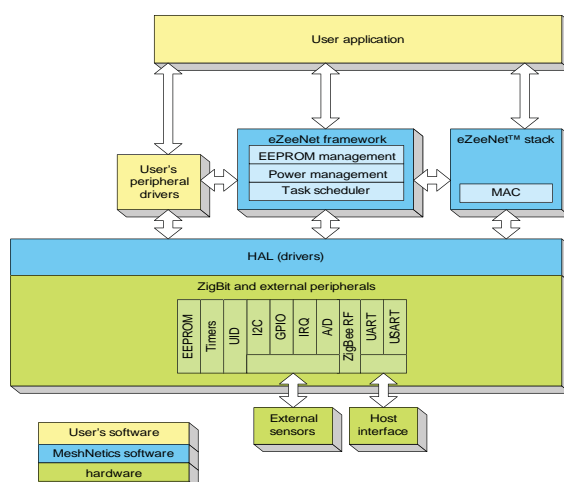
The MAC layer lies at the core of eZeeNet Software, and is a fundmental building block upon which high-level functionality like mesh networking and multi-hop routing depend. Diagram below shows MAC layer in the overall architecture of eZeeNet software stack.

OpenMAC Stack Diagram

Ordering Information

You can download it for free at
http://www.meshnetics.com/opensource/mac