

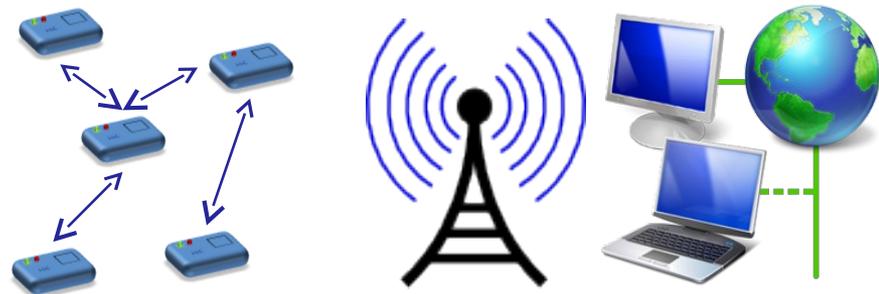
# Software update solution for Wireless Sensor Networks on top of MPL

Communicating Systems Lab

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**list**

## A2Nets project:

- **Type: ITEA2**
- **From: 2011 to 2014**
- **Partners:**
  - **Finland:** VTT,Polar,Vipsolas,Tracker,Planray
  - **France:** LAAS-CNRS, Thales Communications, CEA, Gemalto, eDevice, Bull, Université Paris XII
  - **Spain:** AGGRUPPA, Mirakonta, Universitat Autònoma de Barcelona, Tecnalia-ESI, Rucker Lypsa SA, ATOS Origin
  - **Turkey:** Innova, Vector,C2Tech, Bizitek
- **Main objective:**
  - **Assist transition from M2M fragmented vertical markets to interoperable horizontal markets.**
- **One outcome (among many):**
  - **Don't introduce a new framework for interoperability. Extend or contribute to existing framework.**
    - **Example: ETSI M2M standard**

## The solution needed to be:

- **OTA**
- **Scalable => Multicast**
- **Reliable and robust (support radio channel variations, interferences, failures,...)**
- **Energy efficient (updating software should not drain sensor batteries)**
- **Compatible with OMA DM (as part of ETSI M2M ).**

## **MPL (Multicast Protocol for Low power and Lossy Networks):**

- IETF draft (ROLL group), RFC soon.
- Typically above 6LoWPAN.
- Dissemination of IPv6 datagram through WSN.
- Different from RPL multicast (which is not dissemination oriented).
- Based on “tickle timers” defined in RFC 6206.
- **Well adapted to OTA firmware update**
  
- **➔ see MPL simulator**

## Implementation:

- **Based on Contiki OS**
  - **Provides 6LoWPAN stack**
  - **Provides MPL (version 2.4, 3.x)**
- **Hardware: Zolertia Z1 sensor platforms.**
- **Exploits Contiki's "module" capabilities.**
  - **Fine grained software update, at module level.**
  - **Small update files => better energy efficiency.**
- **Provide CRC mechanism to check correct recovery of modules, and to report success or failure to the gateway.**
- **Possibility to interface with OMA DM Gateway.**
  
- **=> 2 minutes video, if time allows.**

# **THANK YOU !**

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