jRPL

Java implementation of RPL, IPv6 Routing Protocol for Low power and Lossy Networks

Context

This software is a Java implementation of the Routing Protocol for Low-Power and Lossy Networks (RPL) [RFC6550], intended for performance evaluation by way of network simulations.

RPL is a protocol for routing in low-power lossy networks, also often called "sensor networks". While this protocol implementation is intended for use with the network simulator ns2, it is independent (contains no code from ns2) and can be adapted to run also on any JVM.

Technical description

jRPL, as implemented for use in ns2, permits performance studies of the RPL protocol by way of network simulation; this includes studying if a given parameterization of RPL is viable for a given deployment, if a given deployment is even viable with RPL, or how a given extension or auxiliary technology would impact the performance and behavior of RPL. jRPL is implemented as a Java package net.rpl.

Assets:

Implemented in Java using AgentJ facilitates rapid prototyping, extensions, testing and possible easy porting to prototype hardware - as compared to a native ns2-implementation.

Maturity level:

The algorithm is ready and implemented.

Potential markets:

Performance evaluation of the applicability of this protocol for various deployments of Wireless Sensor Networks, Automated Metering Infrastructure, smart grid, home-automation, building automation, urban management, sensor networks in general, low-power and lossy networks.

KEYWORDS:

Networking, Algorithms
Routing protocol
WSN (Wireless Sensor Networks)
LLN (Low-power and Lossy Networks)
RPL
Performance evaluation and testing
Pre-deployment testing

INTELLECTUAL PROPERTY:

The software has been registered with:

- APP (Agence pour la protection des programmes) certificate N.001.010012.000.S.P.2013.000.10200

DESIRED PARTNERSHIP:

Licensing
Industrial partnership

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CONTEXT AND PARTNERS:

The project was supported by Ecole polytechnique.