RPL Applicability Statement for AMI

Jorjeta Jetcheva
(jorjeta.jetcheva@itron.com)

IETF #81, IETF ROLL WG
Québec City, Canada
July 25-29, 2011

Scope & Goals

- Why we need applicability statement for AMI
  - AMI in rapid deployment world-wide
  - Strong momentum in the Smart Grid industry towards utilizing open standards
  - Document how RPL can be used to meet AMI routing requirements
- What this document is NOT
  - Document is not a deployment guide

Document Overview

(draft-ietf-roll-applicability-ami-01)

- Introduction
  - Electric Metering
  - Gas and water metering
- Deployment Scenarios
  - Network Topology
  - Traffic Characteristics
- Using RPL to Meet Functional Requirements
- RPL Profile
  - RPL Features
  - RPL Options
  - Recommended Configuration Defaults & Ranges
- Manageability Considerations
- Security Considerations
- **Others: TBD**

Sample AMI Deployment Scenario Characteristics

- Millions of resource-constrained devices, including meters, DA devices, etc.
- Network densities vary widely (1 to 100s of neighbors per node)
- Each 1-10K devices form their own routing domain
- Traffic between the meter and utility networks goes through one or more Network Aggregation Points (NAPs)

Example AMI Applications

- Meter Data Management (MDM)
  - **Unicast & multicast** communication between a utility application and the meters
  - Scheduled traffic, e.g., periodic meter reads
  - On-demand traffic, e.g., demand reads
- Distribution Automation
  - Delay sensitive & delay tolerant **P2P** applications

Status

- The RPL AMI applicability Internet-Draft addresses one of the ROLL WG charter work items
- Thank you for all comments received so far. Some active discussions going on in the following areas:
  - Comments on Trickle parameterization
  - Network density considerations
  - PAP2, SG-Net work at Open-SG/SG-Net
- Looking forward to continued discussion/comments/ feedback