How to integrate ReCom into a design for Commissioning and Parameterization

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enocean alliance

Building Smarter Connectivity

ReCom Workshop - Agenda

→ Introduction Recom & Reman

→ The importance of ReCom within the EnOcean Alliance

→ Hints for integration of ReCom in a system's concept

→ Mistakes to be avoided

→ Example "ReCom Controller"

Reman/Recom in the Alliance World

Wire	Air
Application	
EnOcean Equipment Profiles / Generic profiles	
Remote Commissioning	
Remote Management	
Smart Acknowledge	
Security	
EnOcean Serial Protocol	EnOcean Radio Protocol
RS232 – UART	868.3, 315, 902, 928 MHz (Radio)

Application

Network

Data Link

Physical

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EnOcean Equipment Profiles (EEP)

ISO/IEC 14543-3-1X

Recom vs Reman

Remote Commissioning

Remote Management

Remote Commissioning (RECOM) :

- Builds on REMAN
- Defined new function codes for SYS_EX
- Complex processes – link tables, device parameters, discovery
- This is the **interesting protocol**

Remote Management (REMAN) :

- the SYS_EX telegram and structure definition
- Basic processes and function

Remote Commissioning   - Why

- **Set Up -** During commissioning of newly installed networks

- **Maintenance** - When modifications, by adding and removing devices and/or changing devices' configuration parameters.
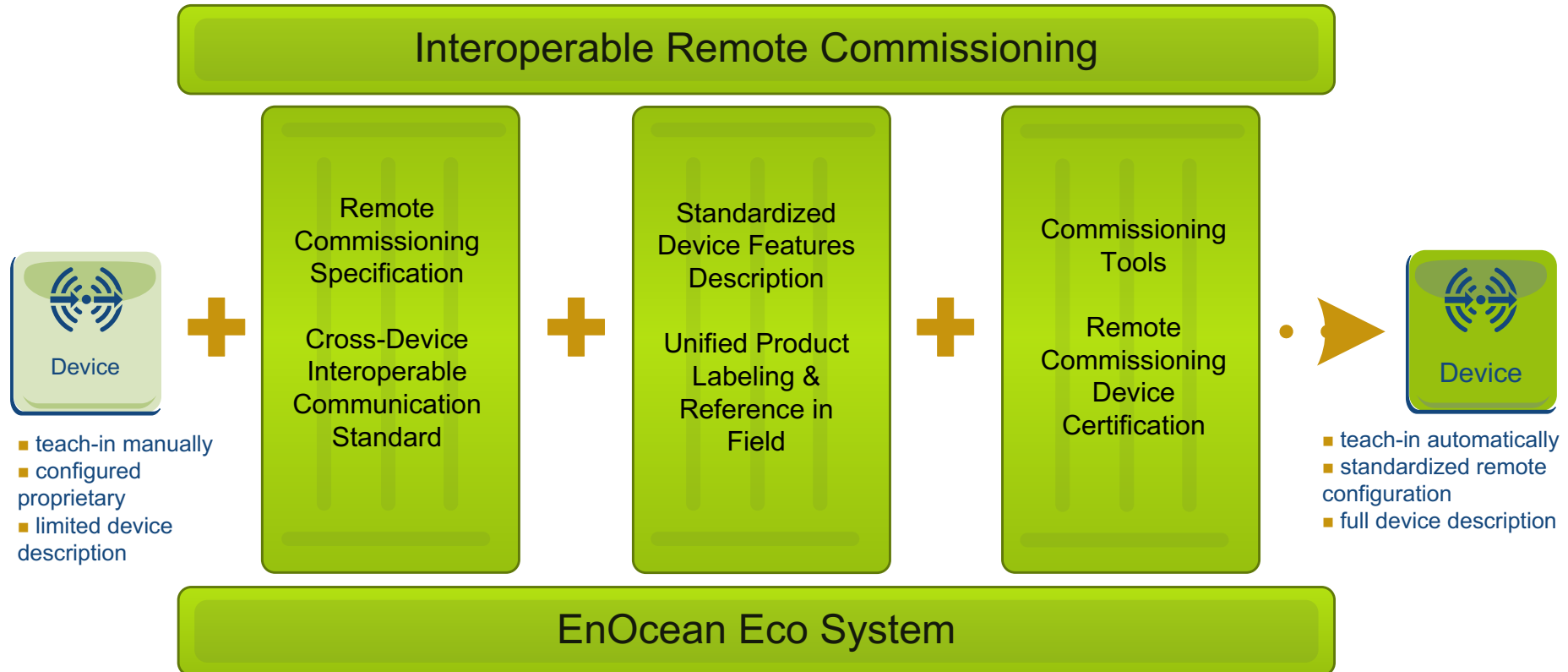
- **Replace** - When replacing a non-operating device with a pre-commissioned, ready to install one.

- **Troubleshooting** - When trouble shooting an operating EnOcean network.

Three pillars

Interoperable Remote Commissioning

Device
- teach-in manually
- configured proprietary
- limited device description

+

Remote Commissioning Specification

Cross-Device Interoperable Communication Standard

+

Standardized Device Features Description

Unified Product Labeling & Reference in Field

+

Commissioning Tools

Remote Commissioning Device Certification

Device
- teach-in automatically
- standardized remote configuration
- full device description

EnOcean Eco System

Why is ReCom Important

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Standardized Protocol which allows:

- Binding from different products from different Manufacturer to each other without need of physical access to the product

- The electrical installer and the "commissioning" manager can be 2 different person

- One of the core functionality for allowing to create "IoT" Devices / configuration via different apps and not using

- Different sort of commissioning tools can be created e.g.

  - One for "the commissioner" manager
  - One for people living in the building to add another devices

DDF – Device Description File

→ Device description file is a standalone xml file which could be seen as electrical data sheet of the device

→ Each ReCom device needs a DDF and each device with a Product ID should have a DDF

→ Contains supported ReCom, EEP and other features of the device

→ Can be used by a commissioning tool to represent the device and learn it into another device

Get Product Id

Commissioned device

1. Scan Product ID and EnOcean ID

Get Device Description file

1. Query Device Description File with Product ID
   https:\\enocean-alliance.com\ddf\[MAN-ID]\[PRODUCT-ID]

2. Get DDF - XML

Use case – Linking

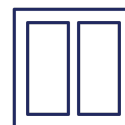**enocean alliance**
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1. Scan the switch

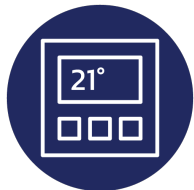2. Add switch to Link Table

3. Switch will immediately work

Use Case - Parameters

Set temperature in HVAC
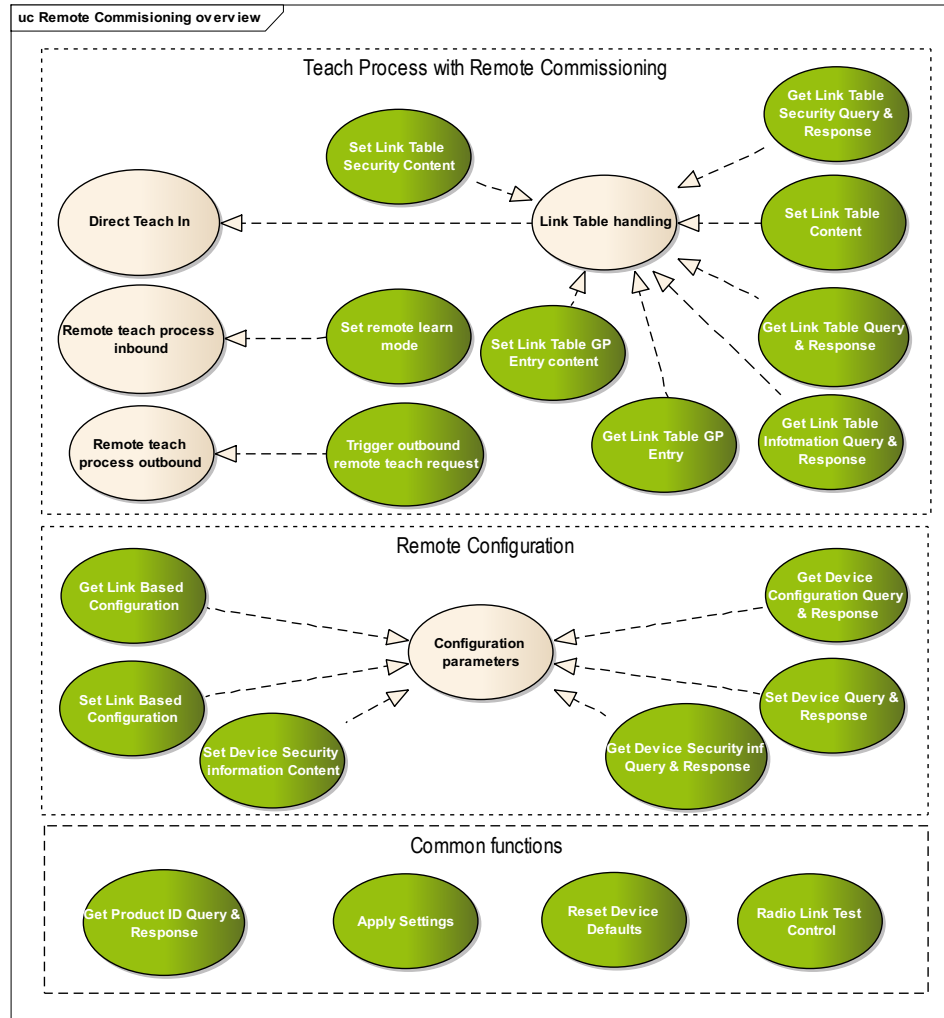
Dimmer settings

Energy settings

Control panel set up

Timers in occupancy

Features overview

Hints for integration

- Recom and Reman are living specification, check for the newest one before starting the implementation

- ReCom should already be added in early design

- The DDF should be written as soon as basic ReCom functionality is available.
  - Also a non ReCom device may have an DDF, this allows easier binding of such a device into a ReCm device
  - Base you DDF an existing example.

- Link Table Size, think about how many devices should be linked to your System.

- Security Key management and key exchange.

Recom Hints – Parameterization

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- Everything which can be parameterized, should be available to read and write via ReCom.

- If a parameter can be configured locally, the status should be mirrored on the ReCom interface.
  - If this parameter is changed via ReCom it should then be mirrored on the local side to show the same Setting.

- The DDF should contain certain use cases with preset parameters to make usage easier

Device Parameterization and Link Table Parameterization

→ Device Configuration:
Parameterization – configuration values which a unique for this device and could change the behavior:

- → Heating curve
- → Auto off for a light
- → Enabling / Disabling "Radio Strength Signal Mode"

→ If a parameter can be configured locally, the status should be mirrored on the ReCom interface.

- → If this parameter is changed via ReCom it should then be mirrored on the local side to show the same Setting.

Link Table Parameters

- → **Configuration parameters for a certain link**
  - → Radio Link Table quality could be stored here (best/ worst telegram received)
  - → Control of certain relay only (Multiswitch dimmer)

- → **Link Table Parameters are unique for**
  - → One Device
  - → One EEP

Configuring a simple Multiswitch Demo with ReCom

→ DDF of an example Dual switch actor

→ DDF of a PTM

→ How a Recom configuration Testing of such a device could work with DolphinView

Q&A

Any other questions?

Specifications and Key Points

ReCom and DDF are key parts for "binding" and configuration of devices using standarized tools.

This makes the live easier for your "installer", building manager or end costumer using a commissioning / ReCom tool.

To read more please visit:

https://www.enocean-alliance.org/specifications/

Thank you for participation and your contribution.

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