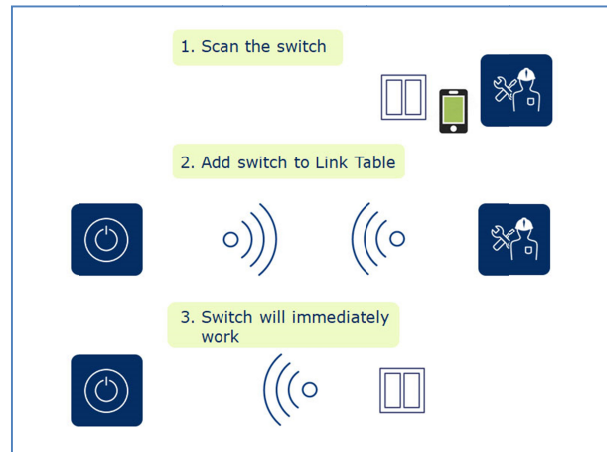# Fact Sheet
Remote Management & Commissioning

What is it about?

Remote Management (ReMan) provides the basic processes and the basic set of operations to manage a sensor or actuator remotely in the network. It is the underlying "toolkit" for ReCom.

Remote Commissioning (ReCom) provides an extended set of features and processes to add a device to a network, to modify its parameters and to detach it from a network. It enables

1. Scan the switch

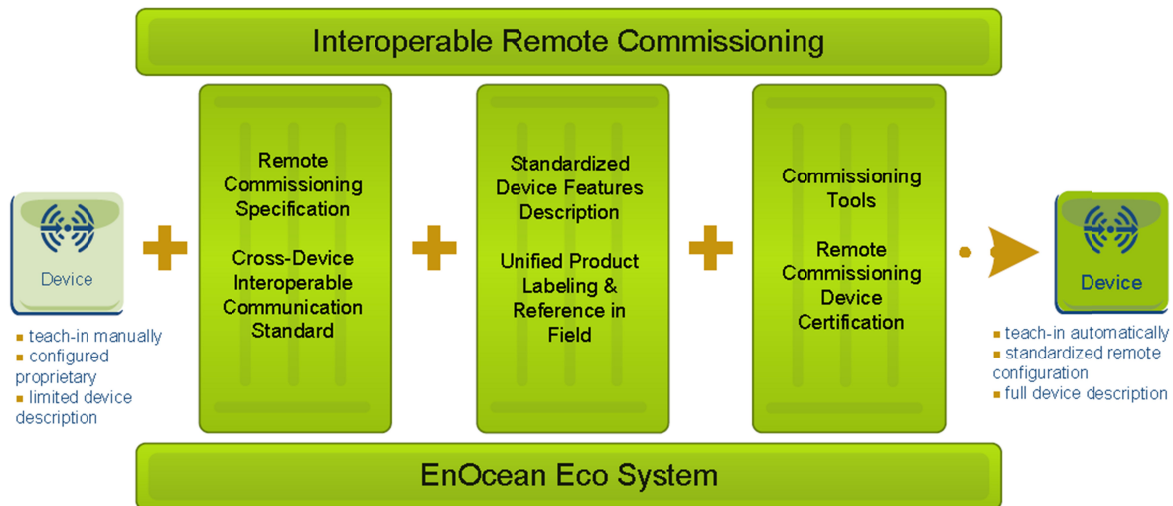2. Add switch to Link Table

3. Switch will immediately work

- Set up of a wireless connection - during commissioning of newly installed networks

- Maintenance - by adding and removing devices and/or linking of devices, and/or changing devices' configuration parameters

- Replacement - a malfunctioning device needs to be exchanged with a pre-commissioned, ready to-be-installed one

- Troubleshooting – chasing issues in an operating EnOcean network

How do I benefit from it?

- You can offer products or solutions which are interoperable with the products and solutions of the EnOcean eco-system

- You hit the market faster at lower cost by applying our specification

- You have lower development costs by applying the specification provided by the Alliance of a transparent, slim and energy efficient management protocol

- Your customers will have reduced efforts for installation, modification and in-field maintenance of your products – once installed no need for physical access to the devices any longer!

- You will reduce the complexity to install them, remove the need for physical access to configure them, and enable simple replacement of malfunctioning devices

- The status of networks can be monitored, issues occurring can be traced and followed-up

How does it look like?

Remote Management (ReMan)

- ReMan enables a technology platform for EnOcean devices to be accessed and configured remotely over the air

- The ReMan specification details the abstract structure of the commands and some basic rules.

- Part of ReMan is also a basic set of standardized and mandatory commands called Remote Management Control Commands (RMCC) which enables, e.g., locking and unlocking the device for management.

- ReMan allows querying debug information from a remote device and calling some manufacturer implemented functions.

- An option for Secure ReMan is supported by a set of dedicated commands which prevents unauthorised access to a managed device.

- ReMan is designed to be used with current and future products and is platform independent.

Remote Commissioning (ReCom)

- ReCom is the service layer definition for interoperable commissioning of devices. It defines the communication format and process between the commissioner and target device.

- The ReCom specification defines an interoperable interface and process to set-up, maintain and troubleshoot EnOcean devices, the linking and the configuration of devices, connecting sensors, actuators, and gateways to each other to achieve the desired functionality

- Implementing ReCom in EnOcean devices will reduce the complexity to install them, remove the need for physical access to configure them, and enable simple replacement of malfunctioning devices.

- With ReCom's standard interface and processes the complexity of supporting unique EnOcean devices can be automated with software

- A Device Description File[1] (DDF) is an essential component; it enables a flexible implementation of features and capabilities per devices, while enabling every commissioner to commission any device that supports Remote Commissioning. The DDF is a XML file describing the basic feature of each device (e.g. supported EEP, product ID, ReCom support) – with other words: an electronic datasheet.

- These system specifications provides guidance for product developers and product managers of target and / or commissioning devices

Where do I find the latest release?

You will find the latest releases at
https://www.enocean-alliance.org/what-is-enocean/specifications/

Which information will I find there?

Remote Management (ReMan)

describes the functionality to configure and maintain EnOcean-based devices over the air or serial interface using radio or serial telegrams.

- Chapter 1: introduction to the structure of the document

- Chapter 2: a functional description of ReMan, the security mechanism specified, the identification of a desired remote device in a group of devices in an unknown environment, obtaining debug information from the managed remote device and the process for calling special and user defined remote device functions are specified.

- Chapter 3: defines Remote Management Control Calls (RMCC) and Remote Procedure Calls (RPC) and its responses.

- Chapter 4: addresses the Communication Protocol, covering the messages structure, error handling in message merge process, and repeating.

- Chapter 5: details the RMCCs defined[2]

- Chapter 6: summarizes important parameters

- Chapter 7: describes how the ReMan communication between a manager and a managed device is encrypted.

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[1] For details on the Device Description File refer to the fact sheet there, please.
[2] RPCs are specified in the EEP specification (current release: V 2.6.8)

Remote Commissioning (ReCom)

defines an interoperable interface and process to set-up, maintain and troubleshoot EnOcean-based devices. Promoting a standard interface will promote ease of use for commissioning and maintenance on EnOcean-based networks.

- Chapter 1: Besides the <u>definitions and references</u> it provides an <u>overview on Re-Man, on ReCom</u> and details the core requirements

- Chapter 2: This chapter includes the <u>complete interface and process specification</u> structured into three application areas: <u>Remote Learn</u> process, <u>Link Table</u> functions (process and interface for managing link tables), <u>Configuration</u> (process and interface for configuring parameters)

- Chapter 3: Provides a structure and instructions for the documentation of an EnOcean-based network commissioned remotely.

- Chapter 4: to be compliant with the ReCom-specifications each device must support a minimum set of Remote Procedure Calls (RPCs) for inbound or outbound communications on either the target or commissioning device regardless of the use case. Application specific bundles of commands are described.

- Appendix: it looks into selective repeating and provides an overview on Query Status returns and on Commands.

Who can help?

- You require further information on ReMan or ReCom ? As a participant member you can receive support at twg@enocean-alliance.org

- The relation between ReMan and ReCom is layed out in "Difference between Remote Management vs. Remote Commissioning" (pdf) at https://www.enocean-alliance.org/what-is-enocean/specifications/

- You may also contact your module supplier who may be able to provide you with support and assistance in understanding and implementing ReCom / ReMan