Description

R-ORG	**D2**	VLD
FUNC	**15**	Single Sensor
TYPE	**00**	People Activity Counter

Submitter:

Submitting EnOcean Alliance Member: EnOcean GmbH
Membership Level: Promoter

Contact Information
Contact Person: Mr. Tobias Meyer
E-Mail Address: tobias.meyer@enocean.com
Telephone Number:

Date of Submission: 2018-11-12
Start of TWG Review: 2018-12-20
Date of Approval: 2019-01-31

EEP Version: 1.0
Last Change: 2019-01-31
Status: APPROVED

Change History :

Date	Version	Author	Description
2018-11-12	0.1	EnOcean GmbH	Initial Draft
2018-12-20	0.2	EnOcean GmbH	EAC Feedback included.
2019-01-31	1.0	EnOcean Alliance	Final version, approved

EEP Submission

R-ORG	**D2**	VLD
FUNC	**15**	Single Sensor
TYPE	**00**	People Activity Counter

Description:
The EnOcean People Activity Counter (EPAC) modules is a variant of the EnOcean PIR sensor. It is intended to count and transmit the amount of movement detected at configured time intervals. These modules have applications in buildings where the usage/activity of each room is to be tracked. Additionally, the module transmits the voltage-supply in the module.

The activity is deducted by comparing activity recorded at the past transmission and current value.

EEP Properties defined by the submitter:

(Same as family members)

Data exchange
Direction: unidirectional
Addressing: broadcast
Communication trigger: event- & time-triggered
Communication interval: Depending if occupancy detected or not.
Trigger event: change of value (configuration-dependent) over threshold
Tx delay: -
Rx timeout: -
Teach-in
Teach-in method: Universal teach-in (UTE)

Parameters applied by EEP family members:

Each member of the family transports at least one or more parameters it its messages as defined later. The parameters are defined in the following table; these are the "building blocks" of the telegrams.
This family follows the concept established with VLD-family D2-14.

Name	ShortCut	Size	Description	Valid Range	Scale	Unit
Energy Storage	ES	**2**	Energy Storage Status	Enum: 0: High 1: Medium 2: Low 3: Critical		
Presence	PR	**2**	Presence Detector	Enum: 0: Present 1: Not present 2: Not detectable 3: Presence Detector error		

New Parameters PIR Counter

Name	Size	Description	Valid Range	Scale	Unit	trigger
PIR Counter	16	Amount of times that PIR activity has been counted.	Enumeration: 0-65535: Activations			PIR activity

NOTE: This counter can be reset at the RST/power-event. Roll-over is allowed.

New Parameters PIR Update rate

Name	Size	Description	Valid Range	Scale	Unit	trigger
PIR Update Rate	4	Discrete interval in which the activity is considered.	0..15	1..16	S	NA

NOTE: Update rate can change during application lifetime, based on battery storage and other factors.

PIR Counter is increased by 1 if a movement during the PIR Update Rate was detected.

Activity Counting:

Example:
PIR Update Rate is 2 seconds.

If in the past 2 seconds at least movement was registered (regardless how many excitations from the PIR), then counter is increased by 1.
If in the next 2 seconds no movement is registered counter is not increased.

Following formula applies:

$$\text{Activity } [\%] = \frac{\text{PIRCounterCurrentTel} - \text{PIRCounterLastTel}}{\frac{(ArrivalCurrentTelegram\ [s] - \ ArrivalPreviousTelegram[s])}{PIRUpdateRate\ [s]}}$$

Activity could be counted at PIR, but with cumulative counter also past activities are considered in case of telegram lose. If a telegram is lost then activity can be still deducted from last received telegram at following telegram reception.

EEP Family Table : D2-15-XX

Parameter Overview
The XX sensor shall use the following parameters

TYPE	00
Presence	X
PIR Counter	X
PIR Update Rate	X
Energy Storage	X

.

Telegram Definition:

CMD 1:

direction: TO
addressing: broadcast
triggers: event & periodic
timing description: (Period configuration is not part of the EEP).

Offset	Size	Data	Description	Valid Range	Scale	Unit	trigger
0	2	Presence	Presence detector	Enumeration: 0: Present 1: Not present 2: Not detectable 3: Presence Detection Error			PIR Activity
2	2	Energy storage	Energy storage Status	Enumeration: 0: High 1: Medium 2: Low 3: Critical			NA
4	4	PIR Update Rate	Discrete interval in which the activity is considered.	0..15	1..16	s	NA
8	16	PIR counter	Amount of times that PIR activity has been counted.	Enumeration: 0-65535: Activations			PIR activity

IP representation of Profile Definition:

Data (from Telegram)	IP KEY	Valid Range	Step size	Unit	IP Meaning
PIR Counter	pirCounter	0…65535	1		Accumulated movement detected
PIR Update Rate	time	1..16	1	s	seconds
Presence					Already defined in D2-14
Energy storage					Already defined in D2-14