



Introduction to MEP

Multi-purpose Expansion Port



Develco A/S

- Independent design house founded in 1989
- Electronic engineering and embedded software
- ~40 employees, mainly engineering personnel
- Main line of businesses:
 - Wireless
 - Automotive
 - Industrial
- Manufacturing via Develco Products A/S
- Several technology partners
- ISO 9001 & ISO 14001 certified





Introduction to MEP

(Multipurpose Expansion Port)

- The MEP port allows a connected smart device to access meter data, run meter procedures, and have limited write access to the meter.
- The device that connects to the meter using the MEP port is referred to as a MEP device
- The MEP protocol is a session-less, two-way, single layer protocol providing access to meter data through the ANSI C12.19 specification for data representation.
- Authentication and (optional) encryption is built into all messages

DEVELCO

-a step ahead



Introduction to MEP

(Multipurpose Expansion Port)

- The MEP protocol is a request-response protocol.
MEP device is the MASTER
- The exception to this model is an alert sequence that the meter initiates and sends to the MEP device to notify it that there is new information requested, or new data to be processed
- Downlink data transfer - Data flow from the meter and NES to the MEP
 - Reading Non-Urgent Data
 - Reading and Processing Urgent Data
- Uplink data transfer - Data flow from the meter and the MEP device to NES
 - Posting Non-Urgent Data
 - Posting Urgent Data and Alarms
- Firmware Downloads





Introduction to MEP

(Multipurpose Expansion Port)

- There are many different tasks you could accomplish with a MEP device. For example, you could connect a smart RF card that communicates with In Home Display devices that would reflect the current state of the meter, as the MEP device is able to read meter data in real-time.
- Alternatively, you could connect an auxiliary I/O device meant to deliver external alarm signals to the meter using the MEP port.
- Or you could connect to other meters like Gas, Water and Heat meters.



-a step ahead



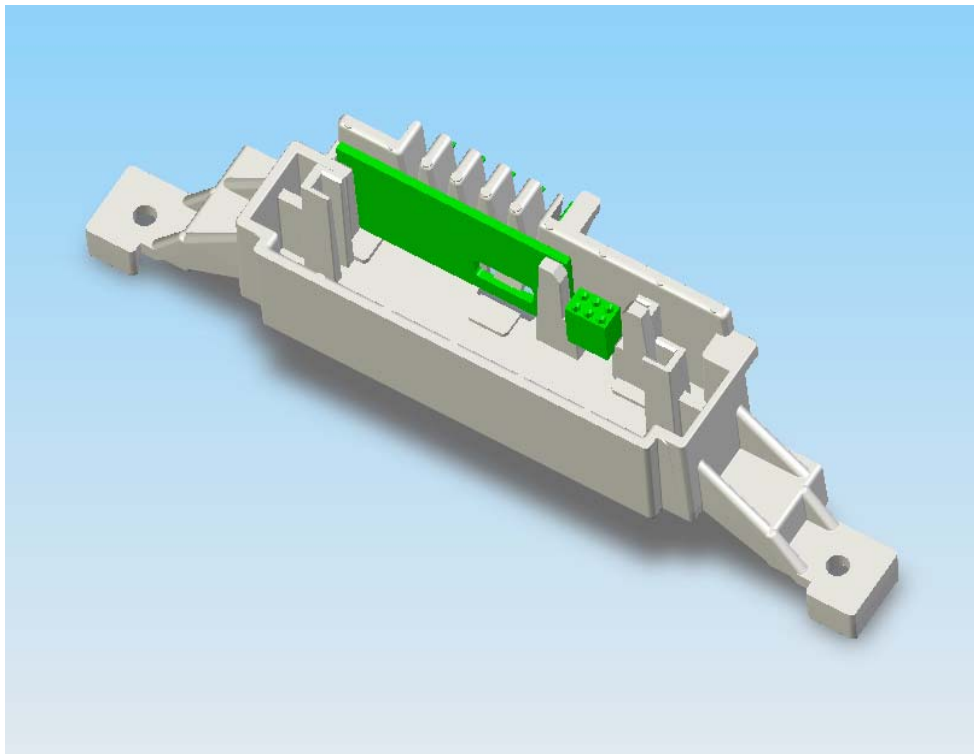
Hardware specification



- Bi-directional serial UART-interface
- Isolated power supply, 24VDC / 40mA
- MEP supply input, 5VDC
- Terminal connection

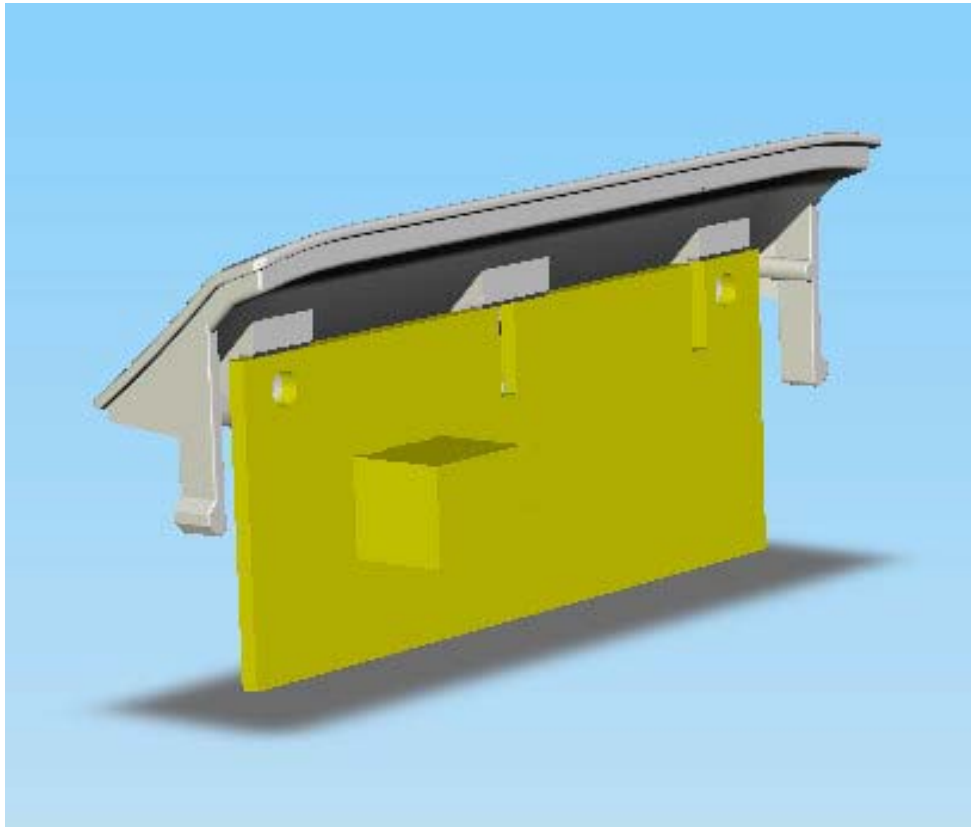


EnergiMidt - Mechanical interface



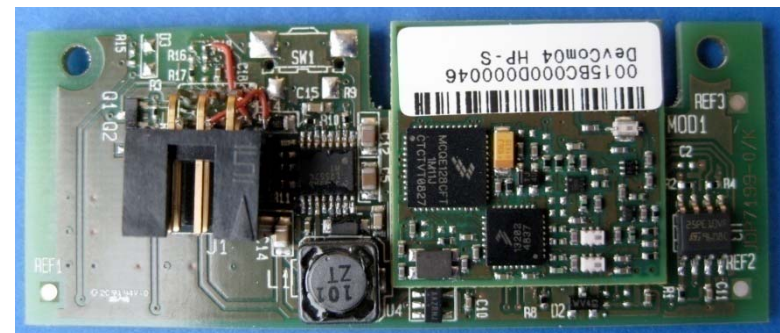
A mechanical and electrical solution has been developed for easy interface between the terminals and the MEP device

- Cost effective
- Assembled by robot



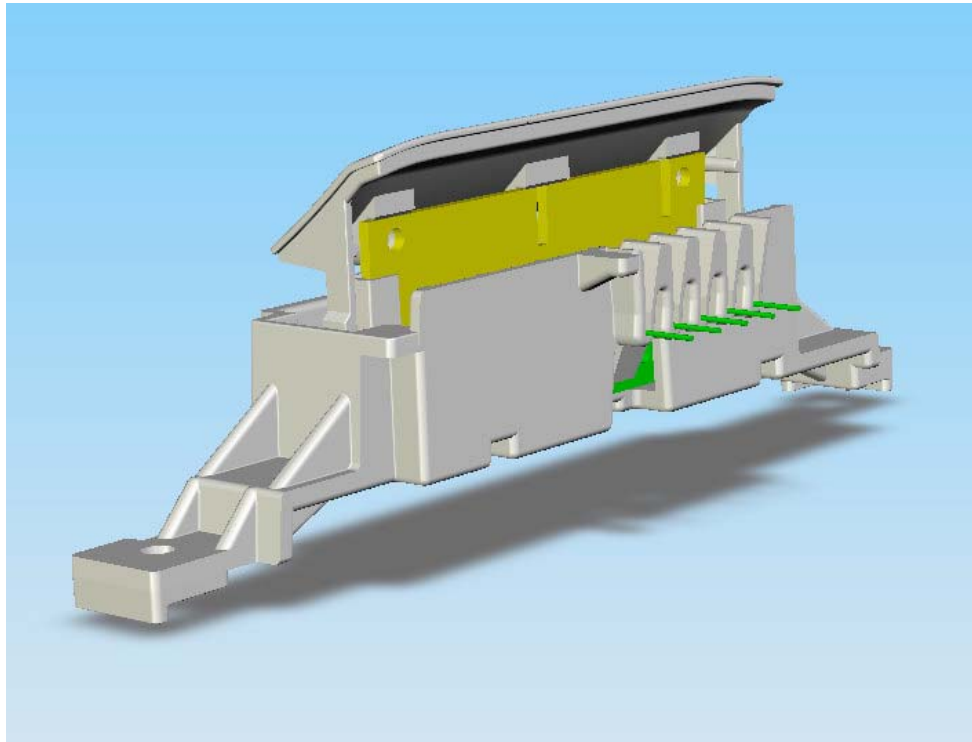
The MEP device mounted in the card holder

- The ZigBee unit is mounted with two screws
- Ready for end user





EnergiMidt - Mechanical interface

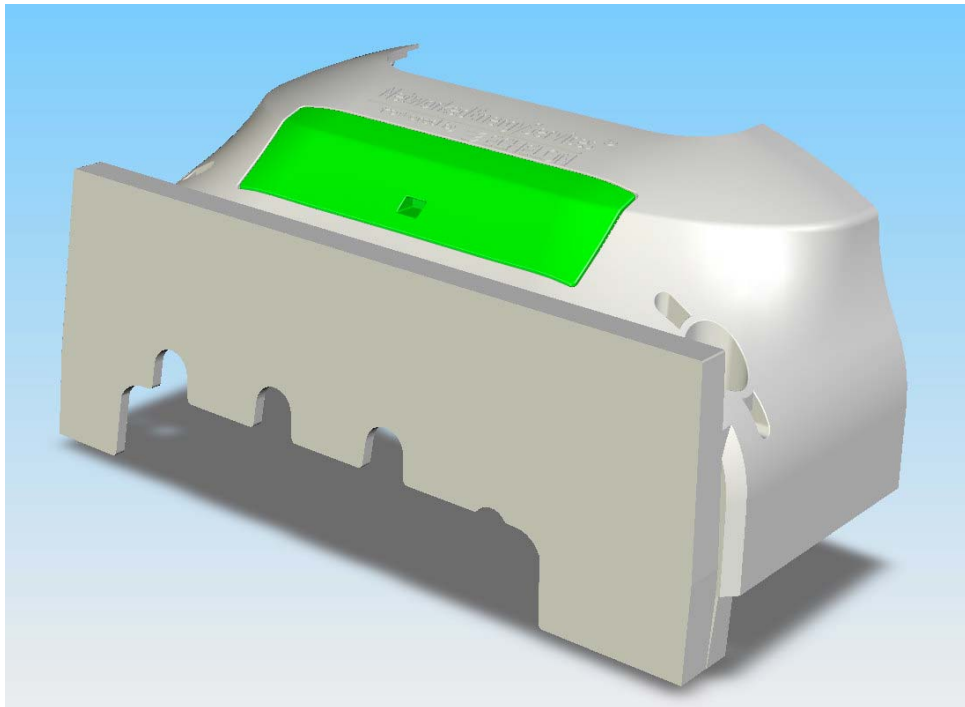


MEP device inserted in the slot

- The card holder has snap-on fasteners



EnergiMidt - Mechanical interface



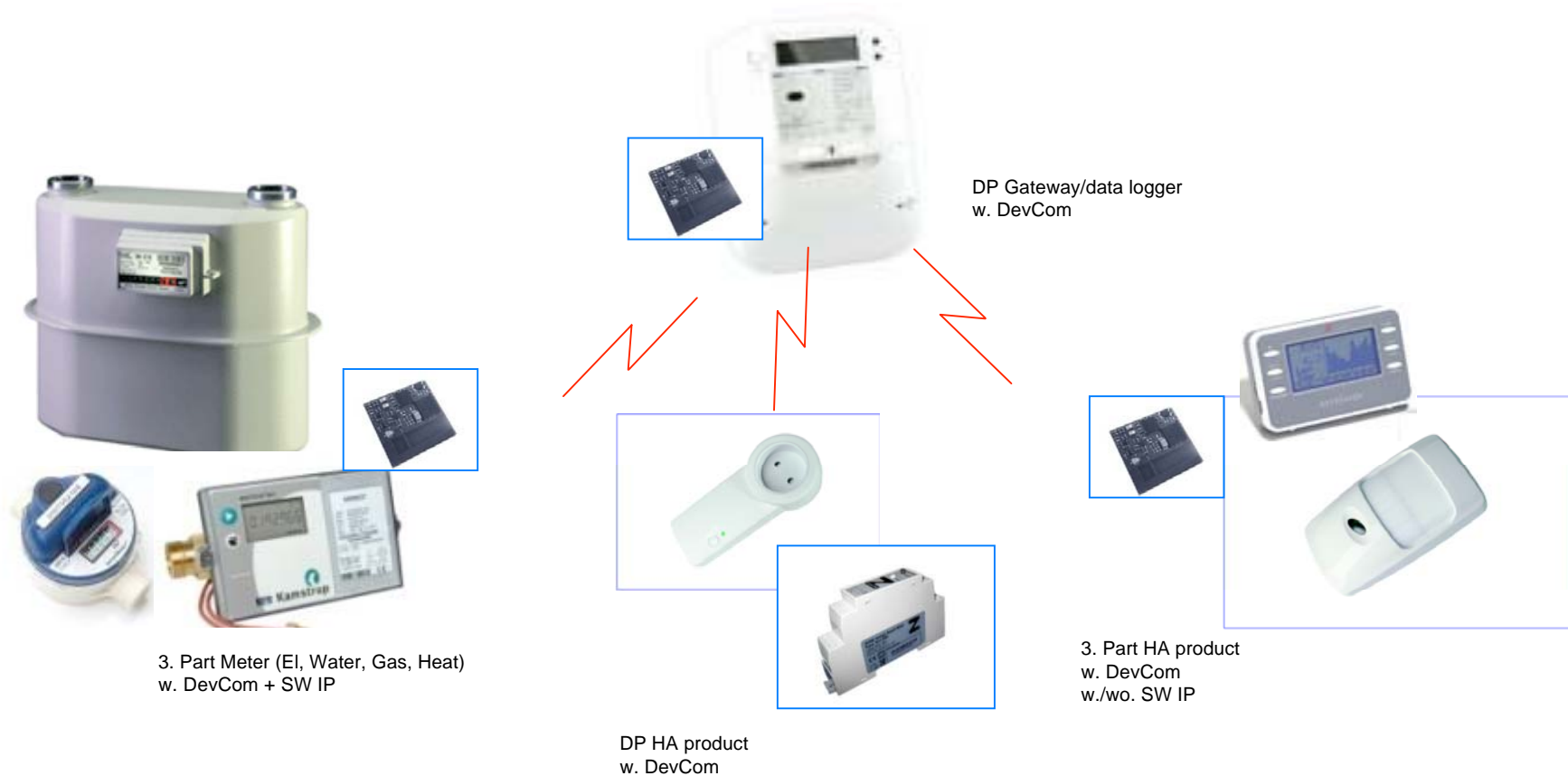
The MEP device is mounted in the cover

- Easily inserted by end user.
- Simply replace the dummy card-holder with the ZigBee card



ESNA

ZigBee gateway for PLC meter



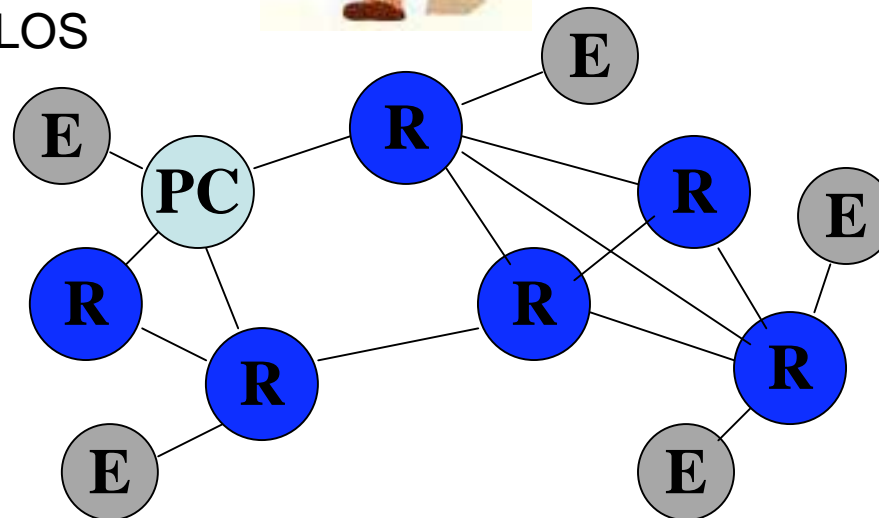


ZigBee benefits



Headlines:

- Open standard – several vendors
- Real battery driven (up to 10 years)
- Wireless – “There ain’t no strings on me”
- Range: 50m indoor – 1000m LOS
- 65.000 units in one net
- Routing facility
- Standardized profiles
- V1.0: 2004, V1.1: 2006
- Products: 2007






security
HVAC
AMI
lighting control
access control



**BUILDING
AUTOMATION**



**CONSUMER
ELECTRONICS**

TV
VCR
DVD/CD
remote

ZigBee Wireless Control that Simply Works

patient
monitoring
fitness
monitoring



**PERSONAL
HEALTH CARE**



**PC &
PERIPHERALS**




**TELECOM
SERVICES**

asset mgt
process
control
environmental
energy mgt



**INDUSTRIAL
CONTROL**

m-commerce
info services
object interaction
(Internet of Things)



**HOME
CONTROL**

security
HVAC
lighting control
access control
irrigation



-a step ahead