INTRODUCTION EEBUS

The global language for energy in IoT

V1.27 / 5.6.2020

GOALS OF EEBUS

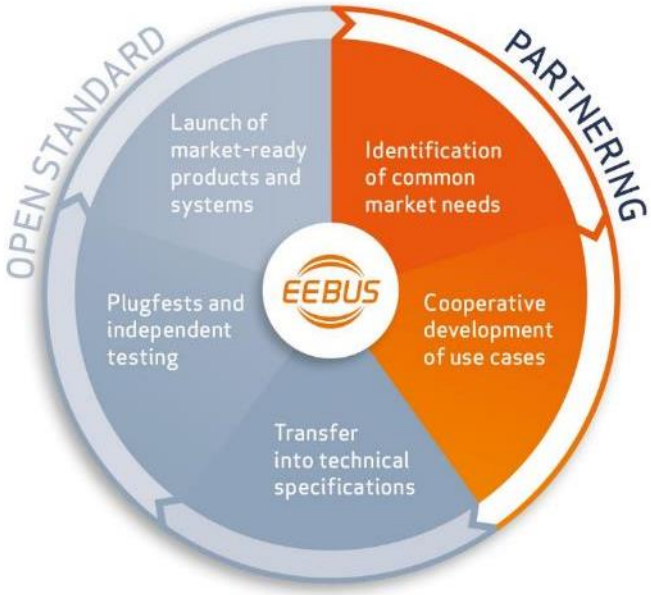
- One global language for devices to **communicate about energy** – transcending the boundaries of industries and continents
- One common language that every device and every platform can use **free of charge** – regardless of the manufacturer and the technology
- One standard based language to **enable proper functionality of all devices** even in the event of an energy shortage
- One standard based language to enable companies to join the **solution business**
- One standard based language to deliver **plug & play** solution for residential and commercial applications

CROSS-INDUSTRY ASSOCIATIONS RELY ON EEBUS

AS WELL AS LEADING COMPANIES

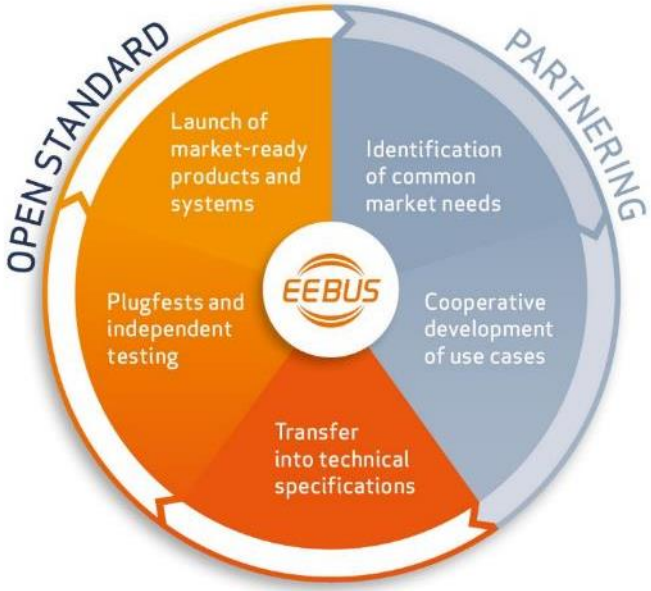
MARKET REQUIREMENTS LEAD IN CONCRETE USE CASES

- Starting point of the standardization process are the **market requirements** brought by the companies
- **Market requirements** are translated into use cases and information that needs to be shared in eco system are defined
- The **cross-industry network** plays a central role. Through this exchange a common overarching understanding is developed and future developments accelerated



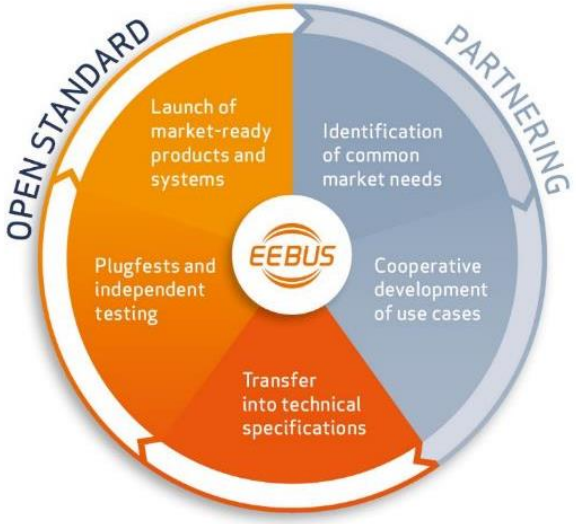
TRANSLATION OF USE CASES INTO SPECIFICATIONS

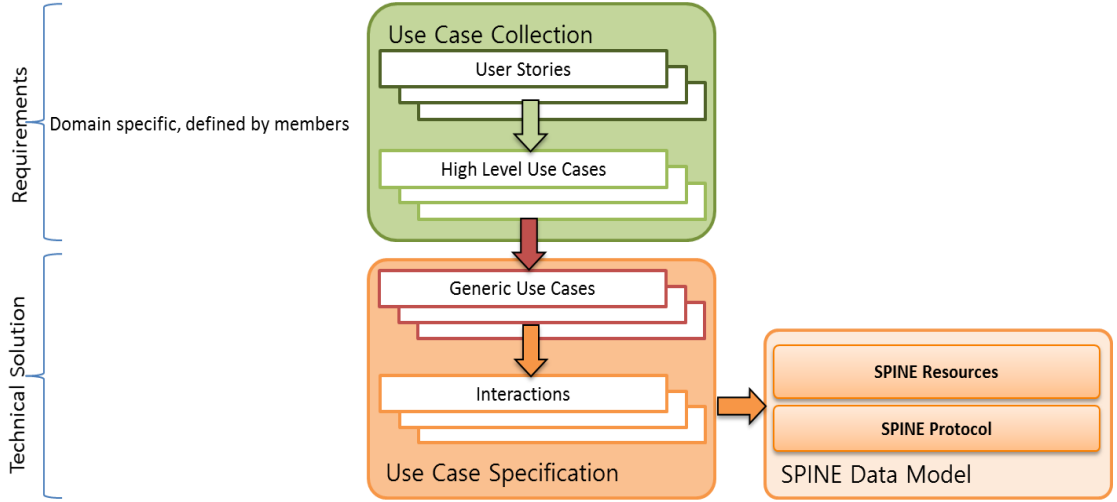
- Transformation of the use cases into released **specifications and data models**
- The EEBUS working group ensures that only what is needed is **standardized**
- Common **plug fests** to verify the implementation of new use cases
- Global convergence through **collaboration** with international alliances such as Energy@home, OCF and Thread



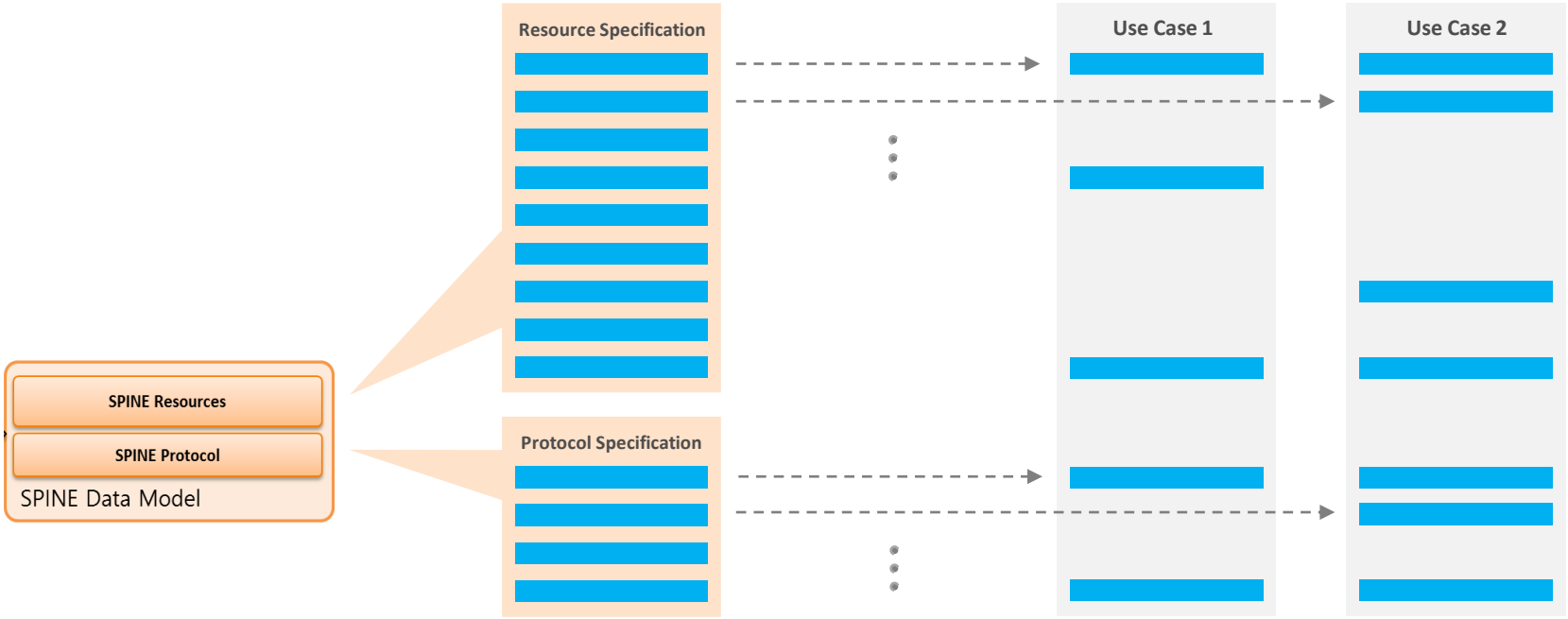
>> EEBUS specifies and standardizes on behalf of industry

FROM THE VISION TO THE CONCRETE USE CASE





SPINE AS TOOLBOX TO BUILD YOUR APPLICATION



SPINE Tool Box

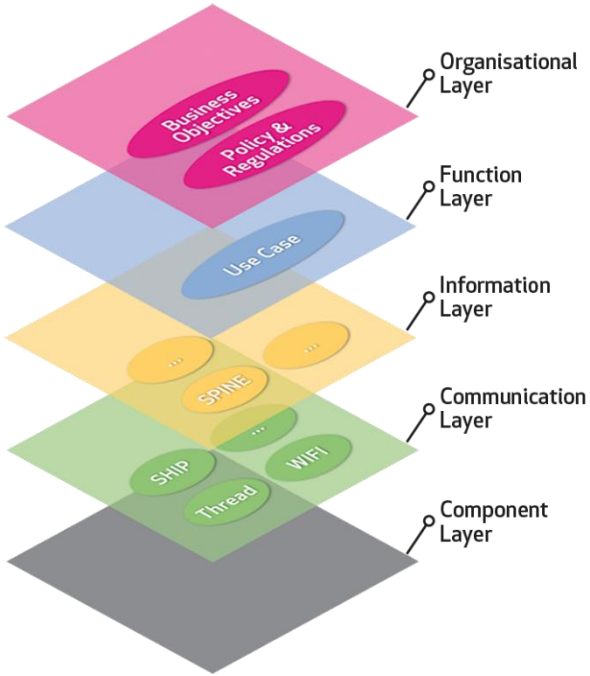
maximum flexibility for the ecosystem

Use Case Specification

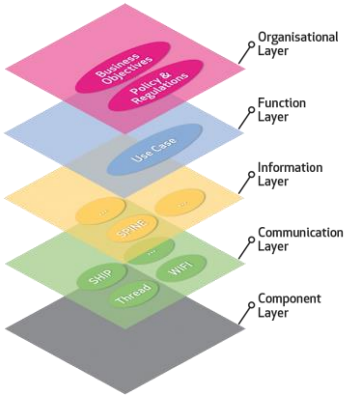
precise guidance to build the application

A STANDARD FOR INTEROPERABLE DATA MODELS

- EEBUS describes the data models necessary for the technical implementation of a use case (**S**mart **P**remise **I**nteroperable **N**eutral Message **E**xchange = SPINE)
- SPINE is **standardized**
- SPINE can be transmitted via many communication/transmission channels, e.g.
  - In TCP/IP environment, EEBUS has published the specification (Smart Home IP = SHIP)
  - In UDP environment cooperation with Thread and OCF



SYSTEM ARCHITECTURE OVERVIEW



Function Layer	Information Layer	Communication Layer
Use Case Specification	**SPINE Specification**	**SHIP Specification**
Application	Toolbox	Transport & Security

>> To guarantee **maximum flexibility**, the EEBUS architecture is based on the **SGAM architecture** model and offers solutions for several layers

SPINE CONTRIBUTION TO INTERNATIONAL STANDARDIZATION

(EXAMPLES: IEC, CENELEC, ETSI):

EUROPEAN STANDARD **EN 50631-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 2017

ICS 97.120

English Version

Household appliances network and grid connectivity - Part 1: General Requirements, Generic Data Modelling and Neutral Messages

Introduction

Energy management systems will more and more become necessary due to change from fossil and nuclear to renewable production and the associated decentralisation. Since an appropriate standard for a home & building maqnagement is in preparation this European Standard specifies how sets of products from multiple manufacturers are able to interoperate with Home & Building / Customer Energy Management Systems, located in a home network or in the cloud, in the most interoperable manner.

This standard focuses on interoperability of household appliances and describes the necessary control and monitoring. It defines a set of functions of household and similar electrical appliances. The functions in this standard cover next to energy-management main remote-control and – monitoring use cases.

This European Standard does not deal with safety and security requirements. Safety requirements have been set in IEC/EN 60335-x [17].

EN 50631 will provide interoperability on information exchange among various appliances in the home. The standard will be split into 4 parts:

EN 50631-1: *Household appliances network and grid connectivity — Part 1: General Requirements, Generic Data Modeling and Neutral Messages*

EN 50631-2-x: *Household appliances network and grid connectivity — Part 2: Product Specific Requirements and -Specifications*

EN 50631-3: *Household appliances network and grid connectivity — Part 3: General Test-Requirements & -Specifications*

EN 50631-4-x: *Household appliances network and grid connectivity — Part 4: Technology Specific Implementation and Test Requirements*

ETSI TS 103 410-1 V1.1.1 (2017-01)

SmartM2M;
Smart Appliances Extension to SAREF;
Part 1: Energy Domain


EEBUS
SPEAK ENERGY
SEAMLESS COMMUNICATION FROM GRID TO DEVICE LEVEL
Manufacturer-independent energy management
Transparency of energy demand and flexibility
Grid interaction up to the device level
Energy Services Company
Trading
Grid Operation
Billing
Distribution System Operator
Meter
Photovoltaic
Lighting
Air Conditioning
Energy Management System (EMS)
Heating
Appliances
Private Cloud Device Service
Internet Access
E-Mobility
VDA
Flexible Charging
innogy

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