
[PROGRESS REPORT]

Joint Use Case Development – Value Based Services

*Progress report on the analysis and development of common Use Cases
Value Based Services as a business application scenario*

A joint project of

**Robot Revolution Initiative RRI – Standardization Council Industrie 4.0 – Labs Network
Industrie 4.0**



STANDARDIZATION
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1. Management Summary of the common strategy on international standardization in field of the Industrial Internet of Things/Industrie 4.0

The objective of this common strategy paper is the consistent continuation of the common strategy on international standardization in field of the Industrial Internet of Things/Industrie 4.0 between the partner countries of Japan (Robot Revolution Initiative) and Germany (Standardization Council Industrie 4.0 & Labs Network Industrie 4.0). The main focus is to identify and share the recognition of important issues about smart manufacturing. This paper follows and supports the statement and strategic joint action plan for an analysis and consolidation of common Use Case terms.

For the future views and topics agreed between Germany and Japan, the ideal operation images should be described in text as “Use Cases”. Use Cases need to show which functions of organization, human and production units would work closely together in how effective manners, then would deliver what values to whom in manufacturing activities. Use Cases are recognized as important base scenarios to analyse and identify technical requirements for deployment, expansion and new developments of the standards afterwards.

The context

The Japan-Germany Experts Task Force intends to give an outlook on the proceedings of the analysis and development of common Use Cases with some references to the Functional Viewpoint aspects of the Value-based Services (VBS) and an overview on the relevant next steps.

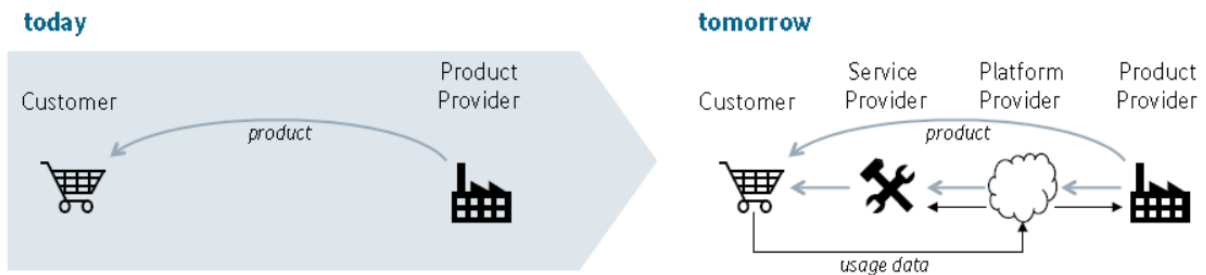
In the context of Industrie 4.0 for some time now, the recognition is aware that – in addition to a technologically driven bottom-up approach – one must complement the topic of digitization in manufacturing industries also by a top-down driven approach. In such a top-down approach the starting point are possible future business scenarios, from which more technically use case descriptions are derived. These use cases are the basis to derive new products, solutions, and services as well as standardization requirements.

In the context of the so-called “smart grids”, this approach has already been used, where the use cases have been described based on the template proposed by IEC 62559-2. However, the topic “smart grid” is much more focused with respect to possible business scenarios than the digitization in manufacturing industries. Therefore, a direct application of this template for the description of use cases seems not to be purposeful, because it requires upfront a too high depth of detail.

On the other hand, it is recognized that the application scenarios of Plattform Industrie 4.0 provide a representative overview of the new business opportunities in the context of the digitization in manufacturing industries. Therefore, need for action from a methodological point of view is less at the level of the business scenarios, but to now concretize these business scenarios from a technical point of view.

Application Scenario VBS – Value-Based Service

Today typically a product provider delivers a product to a customer and does not have any feedback from the usage of his product by the customer. The application scenario VBS – Value-Based Service is based on the innovation hypothesis that in the future delivered products will be connected to a service platform, data from the usage of the product by the customer will be fed to the service platform, and based on the usage data a service provider can offer data-driven value-added services to the customer. The figure below illustrates the participating stakeholder, the underlying value network, and the new information flow from the customer to the service platform as the basis for new data driven services.



Source: Plattform Industrie 4.0

Objectives

It is therefore the goal of the Japan-German Task Force to focus on the description of the usage viewpoint and functional viewpoint aspects. The scope has been set in consideration of a concrete application scenario of Plattform Industrie 4.0 – in particular the application scenario Value-Based Service.

The present results were initiated by the Working Group Modelling Example of the GMA Technical Committee 7.21 “Industrie 4.0 – Terminology, Reference Models, and Architectural Concepts”, and have been forwarded as part of the strategic joint action plan for an analysis and consolidation of common Use Case terms of Germany-Japan cooperation.

Both team agreed to select Value Based Services as business application scenario. A Usage Viewpoint paper preparation is ongoing by Germany and Functional Viewpoint assessment is started by Japan in parallel.

Next steps until 2018

- #1 Completion of the description of the Usage Viewpoint for a concrete business setup within the group “modelling examples”
- #2 Completion of the description of the Functional Viewpoint aspects
- #3 Detailing the “Use Cases” within TC65 Smart Manufacturing, Germany-Japan cooperation
- #4 Achieve overall goal and create descriptions that match each other at the interface between Usage Viewpoint and Functional Viewpoint