New concept for services in eCl@s\ss

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Overview

► Current situation of services in eCl@ss
► New concept of services
► Outlook
Services are getting more and more important in a world of Industrie 4.0
Currently, there are 4 segments to classify and describe services
- One segment each for „Development“, „Logistics“ and „Maintenance“
- One segment for „General service“

Many products / product groups are mirrored by a service
- From technical reasons, not all products can have a service

What the “service” does is only described by its name
- no further information is given

More information about services is needed!
How? → by properties!

But what are the properties of a service?

Collection of properties  Example: laundry service

- type of laundry
- washing temperature
- delivery time
- energy consumption
- disinfected
- order number
- speed when spinning
- maximum washing temperature
- name of laundry shop
- degree of dryness
- weight of laundry
- name of customer
- type of perfuming of detergent
- ironed
- degree of pollution
- eCl@ss Code
- order number
- name of laundry shop
Sorting of the properties

- washing
  - type of laundry
  - washing temperature
  - energy consumption
  - disinfected
  - maximum washing temperature
  - eCl@ss Code
  - speed when spinning
  - name of laundry shop
  - degree of dryness
  - weight of laundry
  - degree of pollution
  - ironed
  - type of perfuming of detergent
  - name of laundry shop
Sorting of the properties

- Supply of service (i.e. not washing)

<table>
<thead>
<tr>
<th>order number</th>
<th>delivery time</th>
<th>eCl@ss Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>name of laundry shop</td>
<td>name of customer</td>
<td></td>
</tr>
</tbody>
</table>
What is the function of the Laundry Service

**Function**: Washing

**Input**:<br>• Where is it executed?<br>• … at what time?<br>• … at what price?<br>• … with which quality?<br>• ...

**Output**:<br>description of the supply of the function

**Description of the function**:<br>description of service
Service = supply of the function by a third party + the function(s) executed
Example of a concept for a function (Base model: SemAnz)

**Notation:**
- Produkt / product (P)
- Energie / energy (E)
- Information / information (I)
- Prozessoperator / process operator (O)
- Technische Ressource / technical resource (T)
- Fluss / flow
- Nutzung / usage
- Systemgrenze / system limit (S)

**Example:**
- Input product (e.g. dirty shirt)
- Input energy / additives (e.g. electricity)
- Input information (e.g. washing program)
- Technical resource (e.g. washing machine)
- Output product (e.g. clean shirt)
- Output information (e.g. KPI's)
- Output energy / waste water
New concept – Example „Laundry service“ applied

**Input product**
- eCl@ss Code
- type of laundry
- weight of laundry
- maximum washing temperature
- degree of pollution

**Input energy / additives**
- type of perfuming of detergent

**Function**
- washing temperature
- speed when spinning

**Output product**
- degree of dryness
- ironed
- disinfected

**Technical resource**
- eCl@ss Code
- Identifier
- energy consumption
Possible New World

- **eCl@ss product hierarchy**
  - Classes for products
  - Classes for services

- **eCl@ss function hierarchy**
  - Classes for functions

Function “washing”
Function “drying”
Function “mounting”
Function “maintenance”

- **eCl@ss function hierarchy**
  - Classes for functions

Service “laundry”
Service supply

- predefined by Expert Group
- assigned by user (i.e. creating an instance)
Outlook

- **Create “Service Supply”** (2019)
- **Introduce a model for functions into eCl@ss (2020/2021)**
  > In the context of Industrie 4.0 other eCl@ss groups also need functions → common model!
- **Start building up the function hierarchy (2020/2021)**
- **Migrate the current service classes into the “new world” (2021/2022)**