Auto Registration of participating devices and customers

Link to explanations, examples and the selection list for indicated fields, please refer to document "Use Case Description draft ver0.55"

<http://www.cen.eu/cen/Sectors/Sectors/UtilitiesAndEnergy/SmartGrids/Pages/default.aspx>

Version of Template: 0.55, Sept 2011

# Description of the Use Case

* + *General*
  + *Name of Use Case*

|  |  |  |  |
| --- | --- | --- | --- |
| ***ID*** | ***Domain*** | ***Name of Use Case*** | ***Level of Depth***  *Cluster, High Level Use Case, Detailed Use Case* |
| WGSP-2130 | - | Auto Registration of participating devices and customers | - |

* + *Version Management*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***Changes / Version*** | ***Date*** | ***Name  Author(s) or Committee*** | ***Domain Expert*** | ***Area of Expertise / Domain / Role*** | ***Title*** | ***Approval Status***  *draft, for comments, for voting, final* |
| - | - | - | - | - | - | - |

* + *Basic Information to Use Case*

|  |  |  |
| --- | --- | --- |
| ***Source(s) / Literature*** | ***Link*** | ***Conditions (limitations) of Use*** |
| - | - | - |

|  |  |
| --- | --- |
| ***Relation to Higher Level Use Case*** | |
| ***Cluster*** | ***Higher Level Use Case*** |
| - | - |

|  |
| --- |
| ***Maturity of Use Case*** *- in business operation, realized in demonstration project, realised in R&D, in preparation, visionary* |
| - |
| ***Prioritisation*** |
| - |
| ***Generic, Regional or National Relation*** |
| - |
| ***View*** *- Technical / Business* |
| - |
| ***Further Keywords for Classification*** |
| - |

* + *Scope and Objectives of Use Case*

|  |
| --- |
| ***Scope and Objectives of Function*** |
| Considering the intention that in future millions of smaller DER devices and also households, buildings and industry should participate via an Energy Management System (CEMS) an easy integration of new devices or customers is precondition for Smart Grids and Smart Markets. A single household or device may offer its flexibility (e.g. load shifting) to the DSO, aggregator or an energy service company. But the single flexibility only represent an small amount of energy. Transaction costs (engineering, communication) must be lower than the  expected (small) financial benefit. Especially the engineering costs need to be decreased by auto registration strategies for customers and devices.  Within an household a new device must be registered automatically within an energy management system in order to gain the acceptance of customers who should participate in the smart grid. |

* + *Narrative of Use Case*

|  |
| --- |
| ***Narrative of Use Case*** |
| ***Short description*** *- max 3 sentences* |
| 1 New devices in a household or building register themselves automatically in the Customer Energy Management System (CEMS).  2 The CEMS register the abilities and flexibilities of connected devices (storage, load, generation) automatically towards an aggregator or the distribution system operator. |
| ***Complete description*** |
| 1 New devices in a household or building register themselves automatically in the Customer Energy Management System (CEMS).  This will be part of the local Home Automation, Building automation, the Smart Metering System (which act a CEMS) or even single devices like an EV, heat pump or CHP with an integrated CEMS (for examples please refer to the report of the WG SP). Partly existing auto registration procedures can be used and adopted with energy management information.  Information exchanged (not limited to): Devices name, installed power, energy management possibilities (load shifting, reduction of load or generation, storage, …), time synchronisation, values and information, which can be provided for an local SCADA system (energy consumption, failure, programmes for energy management, settings, …), system version, …  1 The CEMS register the abilities and flexibilities of connected devices (storage, load, generation) automatically towards an aggregator or the distribution system operator.  Use Cases which had been considered for this generic use case :  FINS-0010-0014, , DKE-0024 |

* + *Actors: People, Systems, Applications, Databases, the Power System, and Other Stakeholders*

|  |  |  |
| --- | --- | --- |
| ***Actor Name*** | ***Actor Type*** | ***Actor Description*** |
| Smart Device | - | A smart device may be an appliance, generator or storage device (Local storage devices include direct and functional electricity storages such as electrochemical batteries, heat pumps and micro CHP such as fuel cells with heat buffers, air conditioning and cooling devices with thermal inertia, etcâ€¦). The smart device can receive data directly from the grid, though an interface with the CEM and can react to commands and signals from the grid in an intelligent way.  Since the smart device is outside the scope of the SGCG, it must be seen as an external actor |
| ESCO Energy Services Company | - | - |
| CEMS Customer Energy Management System | - | - |
| Aggregator | Role | offers services to aggregate energy production from different sources (generators) and acts towards the grid as one entity, including local aggregation of demand (Demand Response management) and supply (generation management). In cases where the aggregator is not a supplier, it maintains a contract with the supplier. |
| DSO System | Role |  |

* + *Issues: Legal Contracts, Legal Regulations, Constraints and others*

|  |  |  |
| --- | --- | --- |
| ***Issue -*** ***here specific ones*** | ***Impact of Issue on Use Case*** | ***Reference -*** *law, standard, others* |
| - | - | - |

* + *Preconditions, Assumptions, Post condition, Events*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Actor/System/Information/Contract*** | ***Triggering Event*** | ***Pre-conditions*** | ***Assumption*** |
| ***-*** | - | - | - |

* + *Referenced Standards and / or Standardization Committees (if available)*

|  |  |  |
| --- | --- | --- |
| ***Relevant Standardization Committees*** | ***Standards supporting the Use Case*** | ***Standard Status*** |
| - | - | - |

* + *General Remarks*

|  |
| --- |
| ***General Remarks*** |
| - |

# Drawing or Diagram of Use Case

|  |
| --- |
| ***Drawing or Diagram of Use Case*** ***- recommended "context diagram" and "sequence diagram" in UML*** |
| - |

# Step by Step Analysis of Use Case

| **S.No** | **Primary Actor** | **Triggering Event** | **Pre-Condition** | **Post-Condition** |
| --- | --- | --- | --- | --- |
| - | - | - | - | - |