Document History

Revision History

Revision Number	Revision Date	Revision/ Reviewed By	Summary of Changes	Changes marked

Approvals

This document requires the following approvals.

Name	Title

1.1 Use Case Title

U5 – Vehicle Use Case Customer enrolls in an Active Management program

1.2 Use Case Summary

This use case details the awareness and specific enrollment process for an Active Management program. This is precluded by an awareness process and includes collecting information pertaining to the customer, their vehicle and operating and charging plans that is described in use case E. This sequence of Use cases is followed by Use cases S1-3 that include the connection architectures.

1.3 Use Case Detailed Narrative

The Utility may offer the Customer an Active Management Program. This offers the customer and utility an opportunity to take advantage of Regulation services and utilize Spinning reserves and other methods to match grid load to demand in a predictable and accountable aspect.

Regulation services, are used to continuously fine-tune the balance between power generation and demand, in terms of the voltage and the frequency of the grid. In many power markets, this function, called regulation or automatic generation control (AGC), is priced separately from power generation and procured as an ancillary service (another such service is spinning reserves). The grid operator needs to be able to ensure generators ramp output up or down in real time to meet customer reactive power needs, manage customer impact on system voltage, frequency and system losses and ensure that power-factor problems at one customer site do not affect power quality elsewhere in the system. Again, providing regulation services requires electricity generation capacity in excess of demand.

Spinning reserves refers to generating capacity that is up and running, and synchronized with the electricity grid (but not contributing power). Spinning reserves generators contribute to grid stability, helping to arrest the decay of system frequency when there is a sudden breakdown or loss of another generator. Again, typically, power plants that can provide fast response to the calls of the grid operator are the most suitable, e.g. gas turbines. The capacity required to provide spinning reserves can also be seen as an underutilized investment, although essential for managing market risks.

3. Step by Step Analysis of Each Scenario

Use Case U5: Customer agrees to an active management utility program.

3.1 Scenario Description

Scenario: Customer enrolls in an Active Management program.

Triggering Event	Primary Actor	Pre-Condition	Post-Condition
The Customer acquires a PEV and contacts the Utility to enroll in an Active Management program	Customer	Customer has a PEV and wishes to enroll an Active Management program; Utility offers PEV Programs to its customers.	The Utility has successfully enrolled a Customer PEV in an Active Management Program and PEV has established initial communications session with the utility.

3.1.1 Steps for this scenario

Step #	Actor	Description of the Step	Additional Notes
1	Customer	Customer initiates request to enroll PEV in an Active Management Program by contacting Utility and provides Customer and PEV information (i.e. Customer Account information, PEV ID, etc.).	Customer uses phone, Internet, or other communications channel. Preference for PEV is PEV VIN #
2	Utility	Utility sends application form via web or mail	
3	Customer	Customer completes enrollment form, returns to utility via web or mail	
4	Utility	Utility make a decision if the customer is eligible or not. Not eligible he notifies the customer	

Step #	Actor	Description of the Step	Additional Notes
5	Utility	For eligible customers, utility notifies customer of in- service date	
6	Utility	Utility authenticates Customer, Customer account, and Premise information, and collects PEV information including PEV ID.	
7	Utility	Utility presents Customer with the Active Management Program information and schedule selections	
8	Utility	Utility schedules metering installation, issues cut-over order (internal process order, billing, parameters of billing, financial network), notifies customer of meter installation (in-service) date	
9	Utility	Utility installs meter, undertakes back-office administrative actions	The Recording Meter is preprogrammed based on the program. It can have either two or three registers (peak, off-peak, shoulder peak). If the customer has AMI meter, utility informs the meter on the new data (two-way communication. It will change the instruction set. The cut in order will take the back office to cumulative in on-peak or off-peak
10	Utility	Utility switches service to the Active Management and issues final bill for old service to customer	
11	Customer	Customer commences Active Management service Customer selects PEV Program and Service Plan, sets PEV program parameters (i.e. guest charging, allow roaming, etc.). The Customer and PEV are now enrolled in a utility CPP program.	Same schedule applies till a rate case or rate change takes place. Nominal prices are subject to change based on utility supply cost (eg. fuel price).

3.2 Alternative Scenario Description

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4. Requirements

This use case is the 5th in a series that follows Use Case E for general enrolment. This use case defines the Active Management utility program for awareness and specific enrolment steps. The Utility and the Vehicle Manufacturer will offer these to their customers. The complementary use cases (U1 - 4) describe the specific details of the four other categories of programs. This series of Use cases are then followed by Use Cases S1, 2 or 3 for specific connection architectures.



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4.1 Functional Requirements

Func. Req. ID	Functional Requirement	Associated Scenario # (if applicable)	Associated Step # (if applicable)

4.2 Non-Functional Requirements

Non- func. Req. ID	Non-Functional Requirement	Associated Scenario # (if applicable)	Associated Step # (if applicable)

4.3 Business Requirements

Bus. Req. ID	Business Requirement	Associated Scenario # (if applicable)	Associated Step # (if applicable)

5. Use Case Models

5.1 Sequence diagram for primary scenario U5.

5.2