

**Vehicle Use Case Task Force**  
**U2: Customer enrolls in a Discrete Event Utility program**

**Document History**

**Revision History**

<b>Revision Number</b>	<b>Revision Date</b>	<b>Revision/ Reviewed By</b>	<b>Summary of Changes</b>	<b>Changes marked</b>

**Approvals**

This document requires the following approvals.

<b>Name</b>	<b>Title</b>

## **Vehicle Use Case Task Force**

### **U2: Customer enrolls in a Discrete Event Utility program**

#### **1.1 Use Case Title**

U2 – Vehicle Use Case

Customer enrolls in a Discrete Event Utility program

#### **1.2 Use Case Summary**

This use case details the awareness and specific enrollment process for the Discrete Event 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 a PEV tariff that provides a low rate for off-peak charging and a higher rate for on-peak charging. The utility must provide services to support energy supplied to customer PEV. These services include enrollment into a PEV program, PEV communications session binding, PEV energy billing, and PEV information services. The utility will implement an enrollment system for Customers with a PEV including registration and commissioning. The utility's Energy Services Communication Interface (ESCI) shall allow for the establishment of a communications session (communications binding), at a premise location each time a PEV plugs in for charging. Energy supplied to the PEV is reported to the utility for billing and presentation to the Customer. Information related to utility PEV programs, energy usage, and PEV charging status/information will be made available to the Customer for viewing via a website or other customer provided display equipment. This use case covers the following scenarios:

- Customer enrolls in PEV program and completes initial setup for PEV – Utilities communications
- PEV and Utility establish/re-establish communications session at the time of charging
- Utility provides billing services for PEV charging to Customer
- Utility provides Customer access to PEV charging and status information

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**3. Step by Step Analysis of Each Scenario**

USE CASE U2 - Enrollment Process to Discrete Event demand side management program (Direct Load Control)

**3.1 Scenario Description**

***Primary Scenario: Customer enrolls in Discrete Event Demand Side Management Program***

- Direct device control (DDC) service involves a Call Option on one or more devices on the premises.
- A single price schedule applies to total premise metered service (uniform or TOU if that was selected). A discount is applied to the base service for each device enrolled in DDC. Prices are firm, but service is not.
- The retailer exercises its Call Option by first notifying the participant that a event has been declared for the next day. The DDC service plan specified when such notice must be delivered to become effective
- The retailer exercises it Call Option by sending a signal that either shuts off electricity to the device (or devices) or restricts its usage during the event.

The enrollment is similar to TOU except that the utility install a control device on specified devices, as depicted on the next slide). Enrollment to an ESCO program is the same as with TOU where the customer takes commodity form an ESCO except the meter change out is replaced with the installation of a control device or devices

Triggering Event	Primary Actor	Pre-Condition	Post-Condition
<i>The Customer acquires a PEV and contacts the Utility to enroll in a Direct Load Control program</i>	<i>Customer</i>	<i>Customer has a PEV and wishes to enroll in DDC program; Utility offers PEV Programs to its customers. Assumes that a single, vertically integrated utility provides bundled residential premise service exclusively, and that DDC is available on a self-selected basis</i>	<i>The Utility has successfully enrolled a Customer PEV in a DDC Program and PEV has established initial communications session with the utility.</i>

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3.1.1 Steps for this scenario

<i>Step #</i>	<i>Actor</i>	<i>Description of the Step</i>	<i>Additional Notes</i>
1	Customer	Customer inquires about DDC Program availability 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 # (customer has to apply from his default rate or TOU rate to the DCC Rate)
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	
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 DDC Program information	
8	Utility	Utility schedules control device installation, issues cut-over order (internal process order, billing, parameters of billing, financial network), notifies customer of control device installation (in-service) date	
9	Utility	Utility installs control device	
10	Utility	Utility switches service to DDC and issues final bill for old service to customer	

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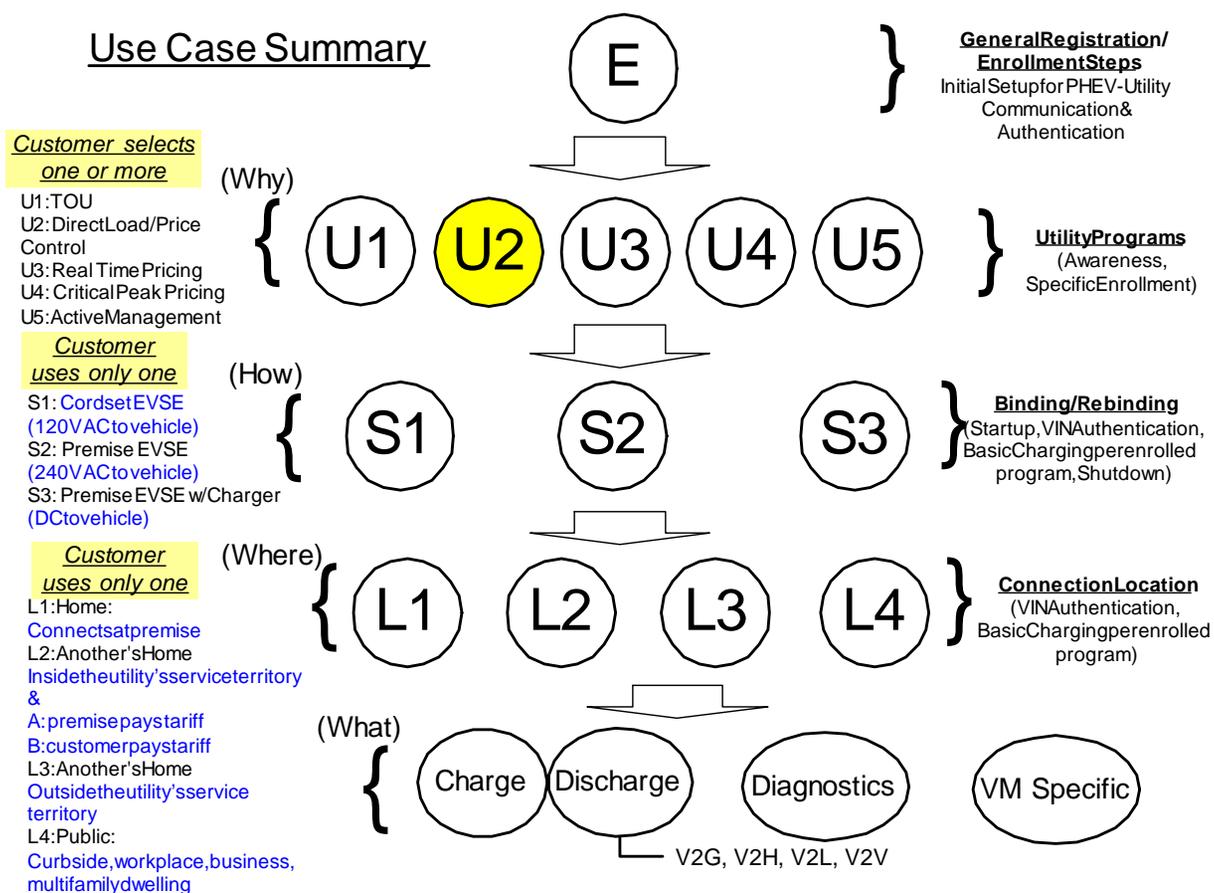
<i>Step #</i>	<i>Actor</i>	<i>Description of the Step</i>	<i>Additional Notes</i>
11	Customer	Customer commences DDC service Customer selects PEV Program and Service Plan, sets PEV program parameters (i.e. guest charging, allow roaming, etc.). The Customer and PEV are now enrolled in a utility DDC program.	Same schedule applies till a rate case or rate change takes place, (TOU structure typically does not change). Nominal prices are subject to change based on utility supply cost (eg. fuel price).

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### 4. Requirements

This use case is the 2<sup>nd</sup> in a series that follows Use Case E for general enrolment. This use case defines the Discrete Event 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 & U3 thru U5) 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**

<b>Func. Req. ID</b>	<b>Functional Requirement</b>	<b>Associated Scenario # (if applicable)</b>	<b>Associated Step # (if applicable)</b>

**4.2 Non-Functional Requirements**

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

**4.3 Business Requirements**

<b>Bus. Req. ID</b>	<b>Business Requirement</b>	<b>Associated Scenario # (if applicable)</b>	<b>Associated Step # (if applicable)</b>

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**5. Use Case Models**

**5.1 Sequence diagram for scenario U2.**

**5.2**