

## Consumer Portal Scenario P4 Customer Account Move

### 1 Descriptions of Function

*All prior work (intellectual property of the company or individual) or proprietary (non-publicly available) work should be so noted.*

#### 1.1 Function Name

*Name of Function:* Customer account move

#### 1.2 Function ID

*IECSA identification number of the function*

C-2.2

#### 1.3 Brief Description

*Describe briefly the scope, objectives, and rationale of the Function*

An existing customer wants to close out his existing account and transfer that to his new residence, along with all applicable utility service and billing account information. This transfer is to be accomplished as an one-stop service in which the customer makes one call to the power company whose service representative handles all of the actions.

#### 1.4 Narrative

*A complete narrative of the Function from a Domain Expert's point of view, describing what occurs when, why, how, and under what conditions. This will be a separate document, but will act as the basis for identifying the Steps in Section 2.*

A western utility has a residential customer base of 1 million meters. The meters are installed in single-family detached housing (SFD), single-family attached housing (SFA), apartment buildings and mobile homes. The utility has a high residential turnover rate as customers come to and leave the service area more frequently than typical utilities.

The utility has demand relief requirements and has multiple demand response programs in place. It additionally supports active residential conservation programs as well as residential alternate, renewable and distributed generation.

The results of all of these efforts are reported to the Sate PUC as part of their requirements to receive credit in rate base.

On Monday morning a residential customer of utility X calls Customer Service and requests that their power be turned off because they are moving from their SFD home in the suburbs to a condo in town. They want to simplify their lives. They advise the utility that they already have the condo purchased and wondered if they could transfer their utility bill to the new address and pay on the same monthly schedule as they now have. They also ask if the electric utility can facilitate the shut-off and/or transfer of all of their utilities including gas, water, trash collection, cable TV service and telephone.

The progressive utility assures the customer that they can provide one-stop service and in fact can take care of everything. The Customer Service representative (CSR) calls up the customer's account information and forwards the entire request, along with the information to a "relocation specialist" (RS) while the customer is still on the line. The relocation specialist opens up a regional web-hosted database and using the electric utility's identification number, calls up all utility services that the client has signed up for. By placing in the moving data and relocation information, the database software automatically notifies all other utilities of the pending move. Each utility can then provide final billing information on the old residence and set up the services at the new residence. The residential customer receives a transaction report, much like a stock market purchase/sell order, that identifies all utilities, all accounts, dates and transitions the customer to a new residence and sets up new account information. The transition invoice lists services provided up to the transition date as cost "X" and starts new billing information (on the same monthly invoice) that delineates costs for services provided at the new residence for the remaining days of the month.

The residential customer moves to the new home and all utilities are in service and they receive a monthly invoice at the usual time that includes old house and new house billing information. The process is seamless, transparent to the customer, and of value to the utilities involved.

## **1.5 Actor (Stakeholder) Roles**

*Describe all the people (their job), systems, databases, organizations, and devices involved in or affected by the Function (e.g. operators, system administrators, technicians, end users, service personnel, executives, SCADA system, real-time database, RTO, RTU, IED, power system). Typically, these actors are logically grouped by organization or functional boundaries or just for collaboration purpose of this use case. We need to identify these groupings and their relevant roles and understand the constituency. The same actor could play different roles in different Functions, but only one role in one Function. If the same actor (e.g. the same person) does play multiple roles in one Function, list these different actor-roles as separate rows.*

<i>Grouping (Community)'</i>		<i>Group Description</i>
<i>Customer Site</i>		<i>Those entities that are located at customer's premises</i>
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
Customer	Person	One requesting the account move.
CustomerCommunicationPortal	System	Device handling communications function at customer's premises

Replicate this table for each logic group.

<i>Grouping (Community)'</i>		<i>Group Description</i>
<i>Power Company Customer Service</i>		<i>Those entities that are charged with handling customer service functions for the power company</i>
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
ServiceProviderEnergyServiceProvider	Organizations	Participating power companies and service providers
Power Company	System	Power company communications system that handles customer call center services
CSR	Person	Customer Service Representative (CSR), Person who interfaces with the customer initially for the power company
CRS	Person	Customer Relocation Specialist (CRS), Person who handles relocation-related

<i>Grouping (Community)</i>		<i>Group Description</i>
<i>Power Company Customer Service</i>		<i>Those entities that are charged with handling customer service functions for the power company</i>
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
		services for the customer
CustomerInformationDatabase	System	System that contains information about customer accounts of the power company
RegionalCustomerInformationDatabase	System	System that contains information about all of the services related customer accounts [e.g., such as power, gas, water, phone, TV, Internet, etc] keyed to a common customer id
CustomerBillingSystem	System	System that handles generation of bills for the services provided to the customer
CustomerId	Device	A common customer identification key that is used by service providers authorized by the customer to identify all of their service accounts
ServiceConnect-CustomerDisconnectSystem	System	System that handles turning on/off of specific customer services; in this case, it refers to the system for turning on/off power to the customer premises

<i>Grouping (Community)</i>		<i>Group Description</i>
<i>Others</i>		
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
Energy Service Provider		
ServiceProvider		

## 1.6 Information exchanged

Describe any information exchanged in this template.

<i>Information Object Name</i>	<i>Information Object Description</i>
Customer Account Change Request	Signifies that a customer account request call has been received from the customer asking for service for making changes on the account
Account Change	Information on specific changes to be made to the account [in this case, turn off service at current location and turn on services at the new location]
Account Confirmation	Information confirming the changes made to the account based on the customer call

## 1.7 Activities/Services

Describe or list the activities and services involved in this Function (in the context of this Function). An activity or service can be provided by a computer system, a set of applications, or manual procedures. These activities/services should be described at an appropriate level, with the

*understanding that sub-activities and services should be described if they are important for operational issues, automation needs, and implementation reasons. Other sub-activities/services could be left for later analysis.*

<i>Activity/Service Name</i>	<i>Activities/Services Provided</i>
Turn Off Current Services	Initiate actions by the service provider[s] to turn off service to the customer’s current location on the date specified by the customer
Generate Final Billing Information	Initiate actions to generate final billing information for the services being turned off
Set Up New Location Account Information	Initiate actions to set up the customer account with the new location information
Transfer Old Account Billing Information to New Account	Initiate actions to transfer the final billing information to the new account for inclusion in the first bill of the new account
Turn On New Location Services	Initiate actions to turn on requested services to the customer’s new location on the date specified by the customer
Generate New Location Billing Information	Initiate actions to generate regular billing to the customer for the services provided at the new location

## **1.8 Contracts/Regulations**

*Identify any overall (human-initiated) contracts, regulations, policies, financial considerations, engineering constraints, pollution constraints, and other environmental quality issues that affect the design and requirements of the Function.*

<i>Contract/Regulation</i>	<i>Impact of Contract/Regulation on Function</i>
Service Delivery	Turn on/off services delivery to customer

<i>Contract/Regulation</i>		<i>Impact of Contract/Regulation on Function</i>				
<i>Policy</i>	<i>From Actor</i>	<i>May</i>	<i>Shall Not</i>	<i>Shall</i>	<i>Description (verb)</i>	<i>To Actor</i>
Provide Services	ServiceProvider			X	Provide specified service	Customer
Deny Energy	Energy Service Provider		X		Turn off power	Customer
Deny Services	ServiceProvider		X		Turn off specified service	Customer

<i>Constraint</i>	<i>Type</i>	<i>Description</i>	<i>Applies to</i>
<i>Account Status</i>	<i>Active</i>	<i>Customer account at location is active</i>	<i>Delivery of power and services to customer account location</i>
<i>Account Status</i>	<i>Inactive</i>	<i>Customer account at location is inactive</i>	<i>Turn off power and services to customer account location</i>

## 2 Step by Step Analysis of Function

*Describe steps that implement the function. If there is more than one set of steps that are relevant, make a copy of the following section grouping (Preconditions and Assumptions, Steps normal sequence, and Steps alternate or exceptional sequence, Post conditions)*

### 2.1 Steps to implement function

*Name of this sequence.*

#### 2.1.1 Preconditions and Assumptions

*Describe conditions that must exist prior to the initiation of the Function, such as prior state of the actors and activities*

*Identify any assumptions, such as what systems already exist, what contractual relations exist, and what configurations of systems are probably in place*

*Identify any initial states of information exchanged in the steps in the next section. For example, if a purchase order is exchanged in an activity, its precondition to the activity might be 'filled in but unapproved'.*

<i>Actor/System/Information/Contract</i>	<i>Preconditions or Assumptions</i>
Customer id	Assumes that a common customer id is used by all service providers
Common customer services database	Assumes that an integrated regional database exists that contains information about all services provided to the customer keyed to the common customer id
Service delivery contract	Assumes that a service contract exists that permits the utility company to make changes to customer service delivery, accounts and billing information
CustomerCommunicationPortal	Assumes that the CustomerCommunicationPortal is installed in the customer location that will permit final meter reading for account closing and collect similar information for the other services on account closing





## 2.1.2 Steps – Normal Sequence

*Describe the normal sequence of events, focusing on steps that identify new types of information or new information exchanges or new interface issues to address. Should the sequence require detailed steps that are also used by other functions, consider creating a new “sub” function, then referring to that “subroutine” in this function. Remember that the focus should be less on the algorithms of the applications and more on the interactions and information flows between “entities”, e.g. people, systems, applications, data bases, etc. There should be a direct link between the narrative and these steps.*

*The numbering of the sequence steps conveys the order and concurrency and iteration of the steps occur. Using a Dewey Decimal scheme, each level of nested procedure call is separated by a dot ‘.’. Within a level, the sequence number comprises an optional letter and an integer number. The letter specifies a concurrent sequence within the next higher level; all letter sequences are concurrent with other letter sequences. The number specifies the sequencing of messages in a given letter sequence. The absence of a letter is treated as a default ‘main sequence’ in parallel with the lettered sequences.*

*Sequence 1:*

*1.1 - Do step 1  
1.2A.1 - In parallel to activity 2 B do step 1  
1.2A.2 - In parallel to activity 2 B do step 2  
1.2B.1 - In parallel to activity 2 A do step 1  
1.2B.2 - In parallel to activity 2 A do step 2  
1.3 - Do step 3  
1.3.1 - nested step 3.1  
1.3.2 - nested step 3.2*

*Sequence 2:*

*2.1 - Do step 1  
2.2 - Do step 2*

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments
#	<i>Triggering event? Identify the name of the event.<sup>1</sup></i>	<i>What other actors are primarily responsible for the Process/Activity? Actors are defined in section1.5.</i>	<i>Label that would appear in a process diagram. Use action verbs when naming activity.</i>	<i>Describe the actions that take place in active and present tense. The step should be a descriptive noun/verb phrase that portrays an outline summary of the step. "If ...Then...Else" scenarios can be captured as multiple Actions or as separate steps.</i>	<i>What other actors are primarily responsible for Producing the information? Actors are defined in section1.5.</i>	<i>What other actors are primarily responsible for Receiving the information? Actors are defined in section1.5.  (Note – May leave blank if same as Primary Actor)</i>	<i>Name of the information object. Information objects are defined in section 1.6</i>	<i>Elaborate architectural issues using attached spreadsheet. Use this column to elaborate details that aren't captured in the spreadsheet.</i>	<i>Reference the applicable IECSA Environment containing this data exchange. Only one environment per step.</i>
1.0	Customer calls utility	Customer	Request account change	Customer calls utility to request account change	Customer	CSR	Customer account information		Customer / ESP
1.1	Customer call received by CSR	CSR	Identifies Customer Account	Customer service representative (CSR) identifies customer account	CustomerInformationDatabase	CSR	Customer account information	?	Customer / ESP
1.2	Customer request account change	Customer	Service Request Type	CSR determine nature of service request [in this case, account change]	Customer	CSR	Service Request Type		Customer / ESP
1.3		CustomerInformationDatabase	Customer account change	Transfer call to Customer Relocation Specialist	CustomerInformationDatabase	CRS	Customer account change		Customer / ESP
2.1	Customer call	Customer	Request	Customer Relocation	Customer	CRS	Account close		Customer /

<sup>1</sup> Note – A triggering event is not necessary if the completion of the prior step – leads to the transition of the following step.

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments
	to utility		Close out current location services	Specialist determines when services to current location are to be turned off			date		ESP
2.2.0	Closing service at current Customer location	CustomerInformationDatabase	Initiate Close out current location services	Customer Relocation Specialist initiates action to turn off power to current location on specified date	CustomerInformationDatabase	CustomerCommunicationPortal	Power turn off command to current location		Customer / ESP
2.2.1	Power Turn-Off Request	CustomerInformationDatabase	Transmit final reading	Customer Relocation Specialist instructs CustomerCommunicationPortal to transmit final reading on service turn off	CustomerInformationDatabase, CustomerCommunicationPortal	Customer billing system	Final reading at current location		Customer / ESP
2.3	Request for Final Billing	Customer billing system	Identify current service provider	CRS accesses regional database to identify services provided to customer at current location using the common customer id	CustomerInformationDatabase, Regional CustomerInformationDatabase	CRS	List of services and service providers to the customer at the current location		Customer / ESP
2.3.1	Customer moving out, Identified current service provider	CRS	Close out current location services	CRS instructs each of the service provider to turn service off to location on specified date	CustomerInformationDatabase, Regional CustomerInformationDatabase, CRS	Customer billing system, Regional CustomerInformationDatabase, CustomerCommunication	Service turn off command to current location		Customer / ESP

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments
						Portal, ServiceProviderEnergyServiceProvider			
2.3.2	Customer moving out, request for final billing	Customer billing system, CRS, CustomerCommunication Portal	Transmit final billing information	RS requests each service provider to transmit final billing information on current account	CRS, Regional CustomerInformationDatabase, ServiceProviderEnergyServiceProvider	CustomerInformationDatabase, Customer billing system, Regional CustomerInformationDatabase	Final reading		Customer / ESP
2.4	Customer moving out of the current location, close services	CRS	Close out current location services	CRS instructs the billing system to close current location account	CRS	Customer billing system, Regional CustomerInformationDatabase	account information		Customer / ESP
3.1	Customer moving to a new location	Customer	Set up services at the new customer location	Customer provides new location information to RS	Customer, CustomerInformationDatabase	CRS, CustomerInformationDatabase, Customer billing system, Regional CustomerInformationDatabase	New location information		Customer / ESP

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments
3.1.1	Customer moving to a new location, service begin date	Customer	Start up date at the new customer location	Customer indicates when power service is to be resumed at new location	Customer	CRS, CustomerInformationDatabase, Customer billing system	Date for turning on power at new customer location		Customer / ESP
3.1.2	Customer requests to initiate new services	Customer	Customer authorizes CRS	Customer authorizes CRS to initiate other services to the new location on the specified date	Customer, CustomerInformationDatabase, Regional CustomerInformationDatabase	CustomerInformationDatabase, Customer billing system, Regional CustomerInformationDatabase, ServiceProviderEnergyServiceProvider	New location account information		Customer / ESP
3.2	Customer authorizes CRS to initiate services	CRS	CRS instructs system to initiate power service	CRS instructs system to initiate power service to new location on the specified date	CRS, CustomerInformationDatabase	CustomerInformationDatabase, Customer billing system, CustomerCommunication Portal	Turn on power to the new location on the specified date		Customer / ESP
3.2.1		CRS	CRS accesses service providers	CRS accesses regional database to transfer new location information to each of the service providers	CRS, CustomerInformationDatabase, Regional CustomerInformationDatabase	Regional CustomerInformationDatabase	New location account information		Customer / ESP

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments
					ase				
3.2.2		CRS	Transfer final billing to new account	CRS instructs billing system to transfer final billing read to the new location account	CRS, CustomerInformationDatabase	Customer billing system	Final billing read from the old customer location		Customer / ESP
3.2.3	Customer moving to a new location, need to link billing	CRS	New location to link to customer account	CRS instructs CustomerCommunicationPortal at new location to link to customer account	CRS, CustomerInformationDatabase	CustomerCommunicationPortal	Customer account information		Customer / ESP
3.2.4		CRS	Send out change confirmation to the customer	CRS instructs billing system to send out change confirmation to the customer	CRS, CustomerInformationDatabase, Customer billing system, Regional CustomerInformationDatabase	Customer, CustomerInformationDatabase, Regional CustomerInformationDatabase, ServiceProviderEnergyServiceProvider	New location account confirmation		Customer / ESP

### 2.1.3 Steps – Alternative / Exception Sequences

*Describe any alternative or exception sequences that may be required that deviate from the normal course of activities. Note instructions are found in previous table.*

#	Event	Primary Actor	Name of Process/Activity	Description of Process/Activity	Information Producer	Information Receiver	Name of Info Exchanged	Additional Notes	IECSA Environments

### 2.1.4 Post-conditions and Significant Results

*Describe conditions that must exist at the conclusion of the Function. Identify significant items similar to that in the preconditions section.*

*Describe any significant results from the Function*

<i>Actor/Activity</i>	<i>Post-conditions Description and Results</i>
Customer	Account moved to new location
Service delivery	Turned off at current location and turned on at new location
CustomerInformationDatabase	Updated with new location information
Billing system database	Updated with the new location information

### 2.2 Architectural Issues in Interactions

*Elaborate on all architectural issues in each of the steps outlined in each of the sequences above. Reference the Step by number..*



## 2.3 Diagram

*For clarification, draw (by hand, by Power Point, by UML diagram) the interactions, identifying the Steps where possible.*

## 3 Auxiliary Issues

### 3.1 References and contacts

*Documents and individuals or organizations used as background to the function described; other functions referenced by this function, or acting as “sub” functions; or other documentation that clarifies the requirements or activities described. All prior work (intellectual property of the company or individual) or proprietary (non-publicly available) work must be so noted.*

ID	Title or contact	Reference or contact information
[1]	P. S. Vishwanath	Paragon Consulting Services, 301-323-4088
[2]	Joe Kelly	Paragon Consulting Services, 503-978-8289

### 3.2 Action Item List

*As the function is developed, identify issues that still need clarification, resolution, or other notice taken of them. This can act as an Action Item list.*

ID	Description	Status
[1]		
[2]		

### 3.3 Revision History

*For reference and tracking purposes, indicate who worked on describing this function, and what aspect they undertook.*

No	Date	Author	Description
0.1	December 8, 2003	P S V	First draft
0.2	December 16, 2003	P S V	Steps section revised to use separate sub-rows for each sub-step as per MB email