
Systems and Transactions

ERCOT 101: Understanding the Tools of the Texas Retail Market

November 2, 2010

- **Terminology**
- **Common Business Processes**
- **Tools used in Facilitating Customer Choice**
 - Texas SET Transactions
 - Texas SET Implementation Guides
 - ERCOT Protocols
- **ERCOT Retail Systems**
- **The Flow of Transactions**

Terminology

- **End Use Customer (Retail Customer)** - An entity/person that purchases electricity for its own consumption
- **ESI ID** - Electric Service Identifier – associated to each premise where electricity is served. Retail transactions within the ERCOT region are all on an ESIID level
- **Premise** - A Service Delivery Point or combination of Service Delivery Points that are assigned a single ESI ID for purposes of settlement and registration
- **TDSP** - Transmission and Distribution Service Provider - A company that owns or operates equipment for transmission and/or distribution of electricity in Texas, whose rates for the service are regulated by state or federal agencies

Terminology Continued

- **Competitive Retailer (CR)** - Municipally Owned Utility or an Electric Cooperative that offers customer choice and sells electric energy in the restructured electric power market in Texas; or a Retail Electric Provider (REP) as defined in 25.5 of the PUCT Substantive rules.

- **Retail Electric Provider (REP)**

A person that sells electric energy to retail customers in this state. As provided in PURA §31.002(17), a Retail Electric Provider may not own or operate generation assets. As provided in PURA §39.353(b), a Retail Electric Provider is not an aggregator.

- **Load Serving Entity**

An Entity that provides electric service to Retail and Wholesale Customers. Load Serving Entities include Retail Electric Providers, Competitive Retailers, and Non-Opt In Entities that serve Load.

Common ERCOT Business Processes

Common Business Processes

- **Switch** – a request submitted by a CR on behalf of a Customer to switch service from the Customer's current CR to the requesting CR
- **Move-in (MVI)** – a request submitted by a CR on behalf of a Customer moving into a Premise that is not currently being served by a CR (may or may not still be energized) or when construction has been completed by the TDSP for a new Premise and the Premise has been assigned an ESI ID and is ready to receive electric service
- **Move-out (MVO)** – is submitted by a CR on behalf of a Customer to terminate service at a Premise with the requesting CR
- **Continuous Service Agreement (CSA)** – An arrangement between the owner or controller of a leased Premise and a CR wherein the CR provides service to the leased Premise between tenants so that the Premise does not experience discontinuation of electric service during vacancy

Common Business Processes

- These business processes (BPs) are completed between CRs, TDSPs, and ERCOT by using a set of transactions which must follow principles and procedures that enable and facilitate the process of Customer Choice in the deregulated Texas Electric Market
- The principles and procedures used are:
 - Texas SET Implementation Guides
 - Protocols (15)

Texas SET Transactions



- Texas Standard Electronic Transaction (TX SET)

Texas Standard Electronic Transaction (Texas SET) used by the competitive retail electric market.

- TX SET transactions are a subset of the ANSI X12 standard transaction set that defines how each transaction will be used in the market.

- There are 48 TX SET transactions used in the Texas retail electric market

- Some transactions have specific transactional timing between MPs and ERCOT.

Transactions Types

There are two types of transactions used in ERCOT:

1. ERCOT Involved Transactions

- Transactions that flow between TDSPs and ERCOT
- Transactions that flow between CRs and ERCOT
- Transactions that flow between TDSPs and CRs via ERCOT



Transaction Types

2. Point-to-Point Transactions

- Transactions that flow between TDSPs and CRs
- These transactions never enter ERCOT systems



CR



TDSP

Transaction Inventory

TX SET Version 3.0 - Transaction Names Inventory

Transaction	Document Title	Document Flow	
650_01	Service Order Request	CR to TDSP	
650_02	Service Order Complete Response, Complete Unexecutable, Reject Response, or Notification of Permit Required	TDSP to CR	
650_04	Suspension of Delivery Service Notification or Cancellation	TDSP to CR	
650_05	Suspension of Delivery Service Reject Response	CR to TDSP	
Transaction	Document Title	Document Flow	
810_02	TDSP to CR Invoice	TDSP to CR	
810_03	MOU/EC Invoice	CR to MCTDSP	
Transaction	Document Title	Document Flow	
814_PC	Maintain Customer Information Request	CR to TDSP TDSP to CR	
814_PD	Maintain Customer Information Response	TDSP to CR CR to TDSP	
814_01	Enrollment Request	CR to ERCOT	
814_02	Enrollment Reject Response	ERCOT to CR	
814_03	Switch CR Notification Request	ERCOT to TDSP	
814_04	Switch CR Notification Response	TDSP to ERCOT	
814_05	Premise Information and Enrollment Response	ERCOT to CR	
814_06	Drop Due to Switch Request	ERCOT to CR	
814_07	Drop Due to Switch Response	CR to ERCOT	
814_08	Cancel Switch Request	CR to ERCOT ERCOT to CR ERCOT to TDSP	
814_09	Cancel Switch Response	CR to ERCOT TDSP to ERCOT ERCOT to CR	
814_11	Drop Response	ERCOT to CR	

Transaction Timing Matrix

Appendix D

Transaction Timing Matrix

Transaction	Business Process	From	To	Timing/ Business Rules	Example	Protocol Reference Section
814_01, Enrollment Request		CR	ERCOT	N/A		15.1.1, Submission of a Switch Request
814_02, Enrollment Reject Response		ERCOT	CR	One (1) Retail Business Day	<i>814_01</i> Received by ERCOT on Monday @ 1500 = Day 0 <i>814_02</i> Sent to CR by Tuesday @ 1700 = Day 1	15.1.1.8, Rejection of Switch Request
814_03, Switch/Move-In CR Notification Request	Switch	ERCOT	TDSP	One (1) Retail Business Day	<i>814_01</i> Received by ERCOT on Monday @ 1500 = Day 0 <i>814_03</i> Sent to TDSP by Tuesday @ 1700 = Day 1	15.1.1.3, Switch Registration Notification Request to TDSP
814_03, Switch/Move-In CR Notification Request	Move-Out CSA	ERCOT	TDSP	Two (2) Retail Business Hours	<i>814_24</i> Processed by ERCOT on Monday @ 1500 = Hour 0 <i>814_03</i> Sent to TDSP by Monday @ 1700 = Hour 2	15.1.5.3, Notification to TDSP of Move-Out

- **What are they?**
 - Guides to standard use of electronic transactions in the Texas Retail Electric Market
 - Act as a ‘road map’ to provide the user necessary information to create transaction data compliant to ANSI X12 and Texas SET standards
- **Where are they located?**
 - <http://www.ercot.com>
 - Select Market Rules
 - Select Guides
 - Select Texas SET Guides
 - Select Current Texas SET Implementation Guides
 - **Location -** <http://www.ercot.com/mktrules/guides/txset/index.html>

ANSI (American National Standards Institute)

ANSI X12 is the official designation of the U.S. national standards body for the development and maintenance of Electronic Data Interchange (EDI Transactions).

Texas Standard Electronic Transaction (TX SET)

- A subset of the ANSI X12 standard transaction set that defines how each transaction will be used in the Market, what fields are required, etc.**
- There are 48 TX SET transactions used in the Texas retail electric market.**
- There are some transactions that have specific timing between MPs and ERCOT.**

Texas Standard Electronic Transaction

814_01: Enrollment Request

Electronic Data Interchange
ANSI ASC X12 Ver/Rel 004010
Transaction Set 814

Page 1 of 35

June 25, 2007
T814_01: Enrollment Request
Version 3.0

Implementation Guide

June 25, 2007
T814_01: Enrollment Request
Version 3.0

on (ESI ID)

03 is required.
present, then the other is required.
present, then the other is required.
to the value cited in REF02.

BCDEFGHUKLMNOPQRS

Summary

One or more examples.

on Qualifier

ference Identification

roperty Control Number

ctry Service Identifier (ESI ID)

X AN 1/30

to clarify the related data elements and their content

ptions,
to the

Texas
anges
des.
boxes

This section is used to show the X12 Rules for this segment. You must look further into the **gray boxes** below for Texas Rules.

This section is used to show the Texas Rules for implementation of this segment.

Attributes

M ID 2/3

This column shows the X12 attributes for each data element.

M = Mandatory
O = Optional
X = Conditional

AN = Alphanumeric
N# = Implied Decimal at position #
ID = Identification
R = Real

1/30 = Minimum 1, Maximum 30

June 25, 2007
T814_01: Enrollment Request
Version 3.0

or Confirmation

Functional Group ID=GE

des the data contents of the General Request,
e context of an Electronic Data Interchange (EDI)
ormated, to respond to a request for actions to be

Qual	Min/Max	Loop	Notes and
O	1		
M	1		
O	1		
O	2		
O	2		
O	1		
O	1		

Qual	Min/Max	Loop	Notes and
O	1		
O	1		
O	1		
O	1		
M	1		

over:

es within the Basic Character Set. Within the
pt all Select Language Characters found in
at gray box guidelines for alphanumeric fields



Segment: **ST** Transaction Set Header
Position: 010
Loop:
Level: Heading
Usage: Mandatory
Max Use: 1
Purpose: To indicate the start of a transaction set and to assign a control number

Syntax Notes:
Semantic Notes: 1 The transaction set identifier (ST01) is used by the translation routines of the interchange partners to select the appropriate transaction set definition (e.g., 810 selects the Invoice Transaction Set).

Comments:
Notes: Required
 ST~814~000000001

ANSI X12 Standards for the segment

Texas SET standard for the segment

Data Element Summary

Ref.	Data Element	Name	Attributes
Must Use	ST01 143	Transaction Set Identifier Code Code uniquely identifying a Transaction Set 814 General Request, Response or Confirmation	M ID 3/3
Must Use	ST02 329	Transaction Set Control Number Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	M AN 4/9

This column shows the X12 attributes for each data element.

M = Mandatory
 O = Optional
 X = Conditional

AN = Alphanumeric
 N# = Implied Decimal at position #
 ID = Identification
 R = Real

1/30 = Minimum 1, Maximum 30

Data Element Use Indicator based on TX SET standard

Protocols – standard Market rules created through the collaborative efforts of representatives of all segments of Market Participants

ERCOT Protocols Section 15 – Customer Registration

- **Section 15 provides operating rules relating to retail service in ERCOT**
- **Where are they located?**

www.ercot.com

Under Select Market Rules

Select Protocols - Zonal

Select Current Protocols

Select 15 Customer Registration



ERCOT Retail Systems

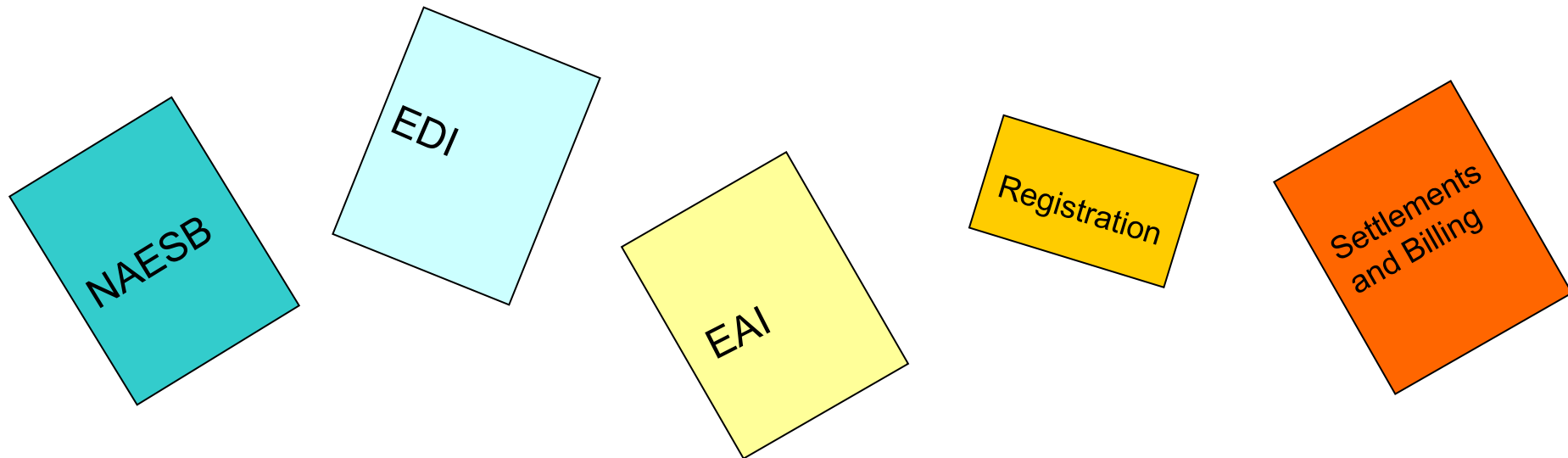
ERCOT Retail Systems - Definitions

- **NAESB** - North American Energy Standards Board
 - Standards set for electronic delivery of data
 - Standard services that allow market participants and ERCOT to 'push' data to one another
 - It is the first and last touch point for data within ERCOT systems
- **EDI** - Electronic Data Interchange.
 - The data validation and transformation engine utilized in ERCOT's retail transaction processing system
 - ANSI X12 compliance validation occurs here for all transactions
 - Transactions are transformed to XML format for internal applications

ERCOT Retail Systems - Definitions

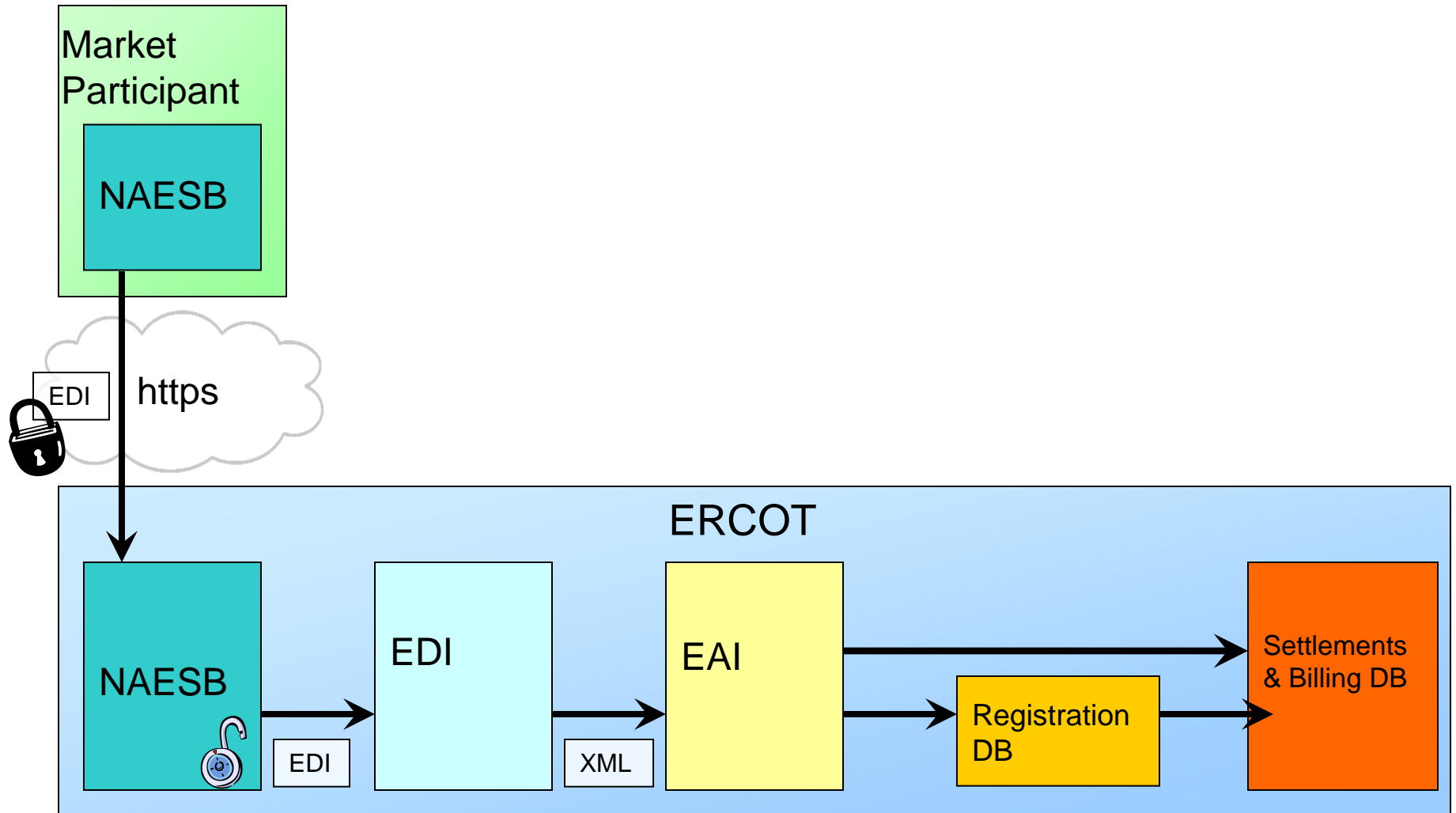
- **EAI (Enterprise Application Integration)** - The middleware application used to integrate data between applications at ERCOT.
- **Registration DB** - A centralized registration database to store the CR data, ESI ID relationships, and pending service orders.
- **Settlements and Billing DB** - A centralized data aggregation and settlement database. It stores all ESI ID characteristics and usage used in the settlement process.

Retail transactions flow between ERCOT and Market Participants through a group of applications referred to as ERCOT Retail Systems



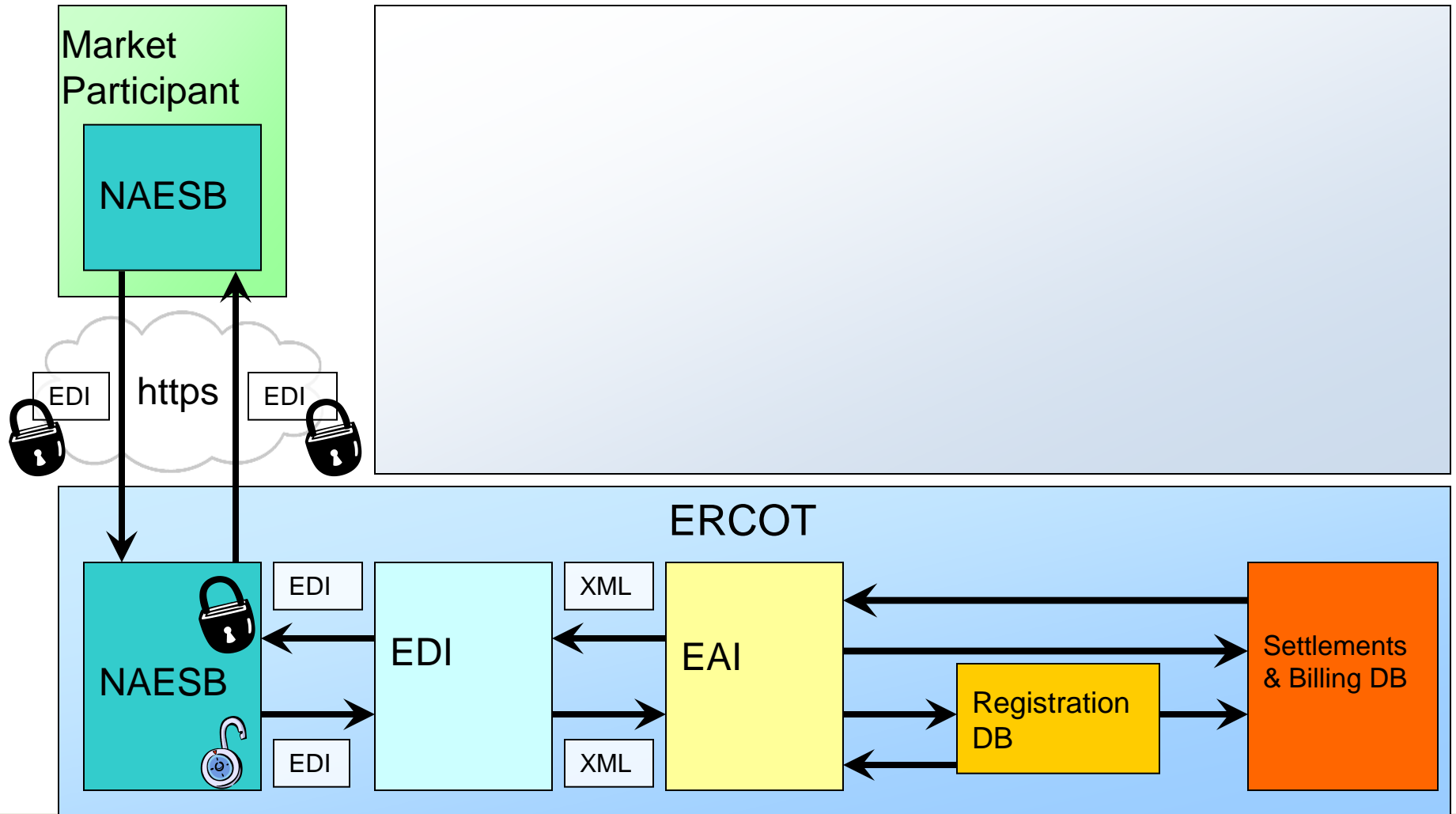
How do these transactions flow through ERCOT?

Transaction Flow Process

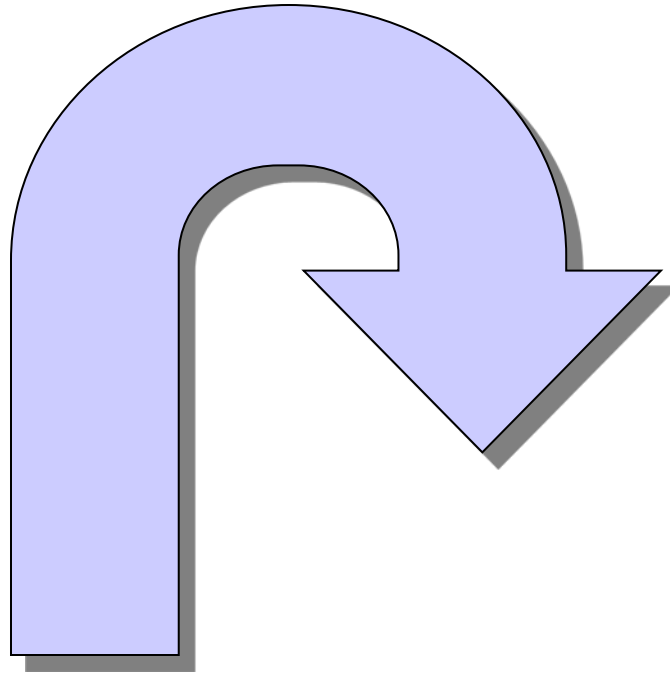


How do these transactions flow through ERCOT?

Transaction Flow Process



- Transaction Flow Process available at <http://www.ercot.com/services/training/ercot101.html> under Key Documents.



TX SET Transaction Swimlanes

What do they do?

- Gives a visual map of transaction flows for business processes
- Clarifies specific instances in a business process
- Outlines direction of transaction flows

• Where can I find them?

- <http://www.ercot.com>
- Market Rules
- Market Guides
- Texas SET Guides
- Under “In This Section” select Texas SET Swimlanes
- Location - <http://www.ercot.com/mktrules/guides/txset/index.html>

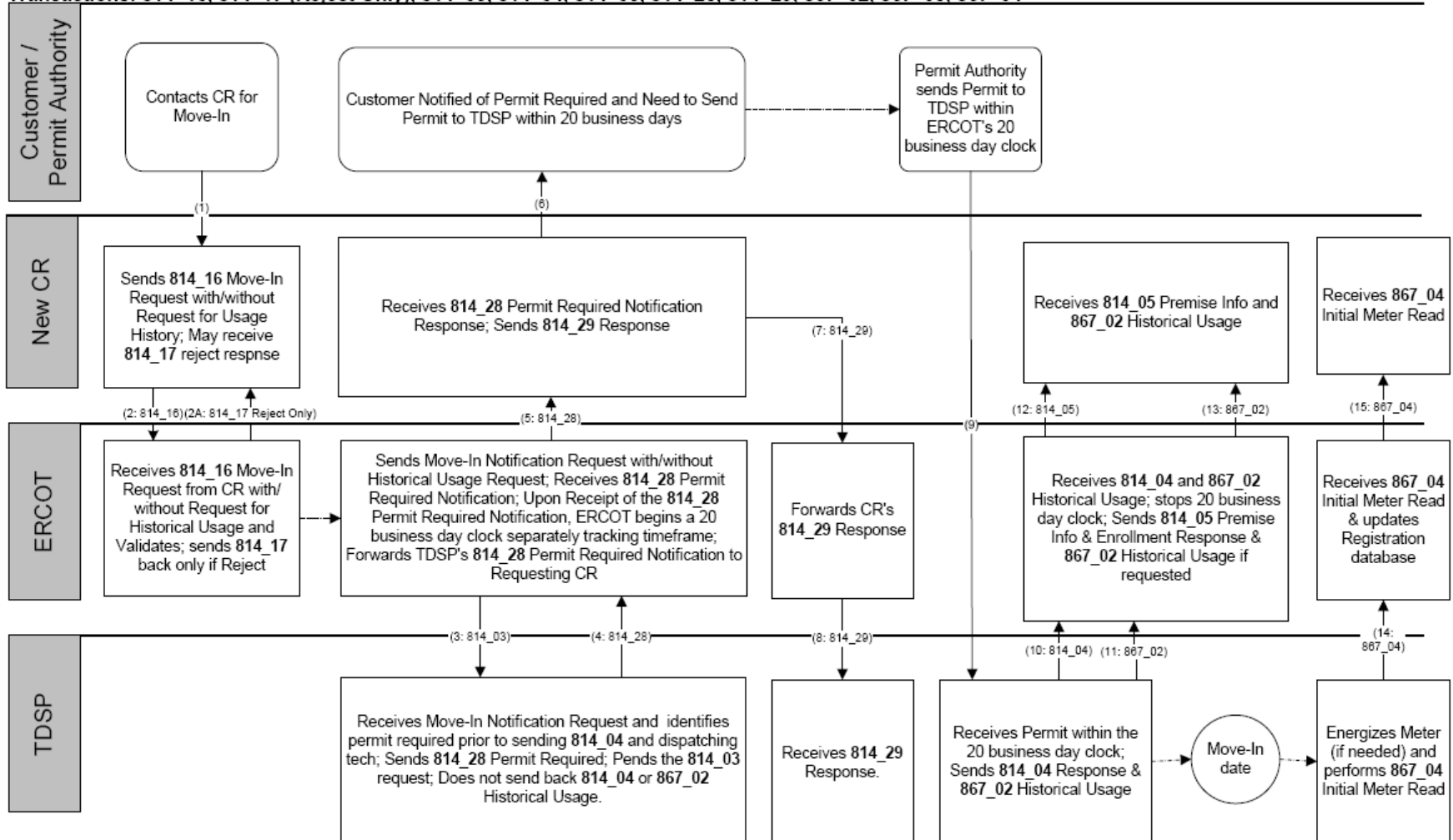


TX SET flow documentation for a MVI request

Move-In

Scenario: Customer Move-In, Permit Required Identified Prior to TDSP Sending 814_04 and Prior to Dispatching Field Technician , Permit Received by TDSP within the 20 Business Day ERCOT Clock (premise de-energized)

Transactions: 814 16, 814 17 (Reject Only), 814 03, 814 04, 814 05, 814 28, 814 29, 867 02, 867 03, 867 04

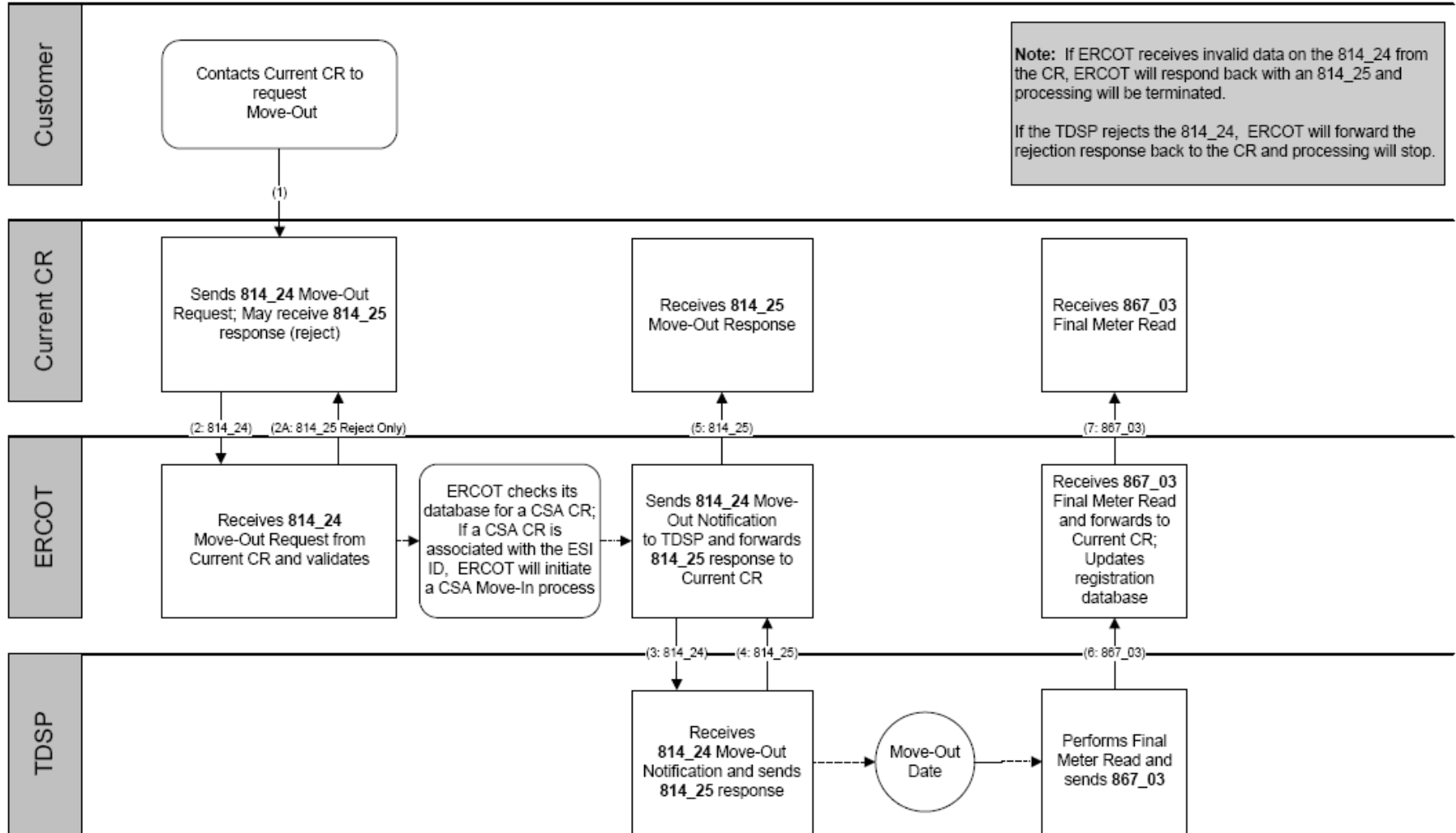


TX SET flow documentation for a MVO request

Move-Out

Scenario: Customer Initiated Move-Out No CSA Associated with ESI ID

Transactions: 814_24, 814_25, 867_03

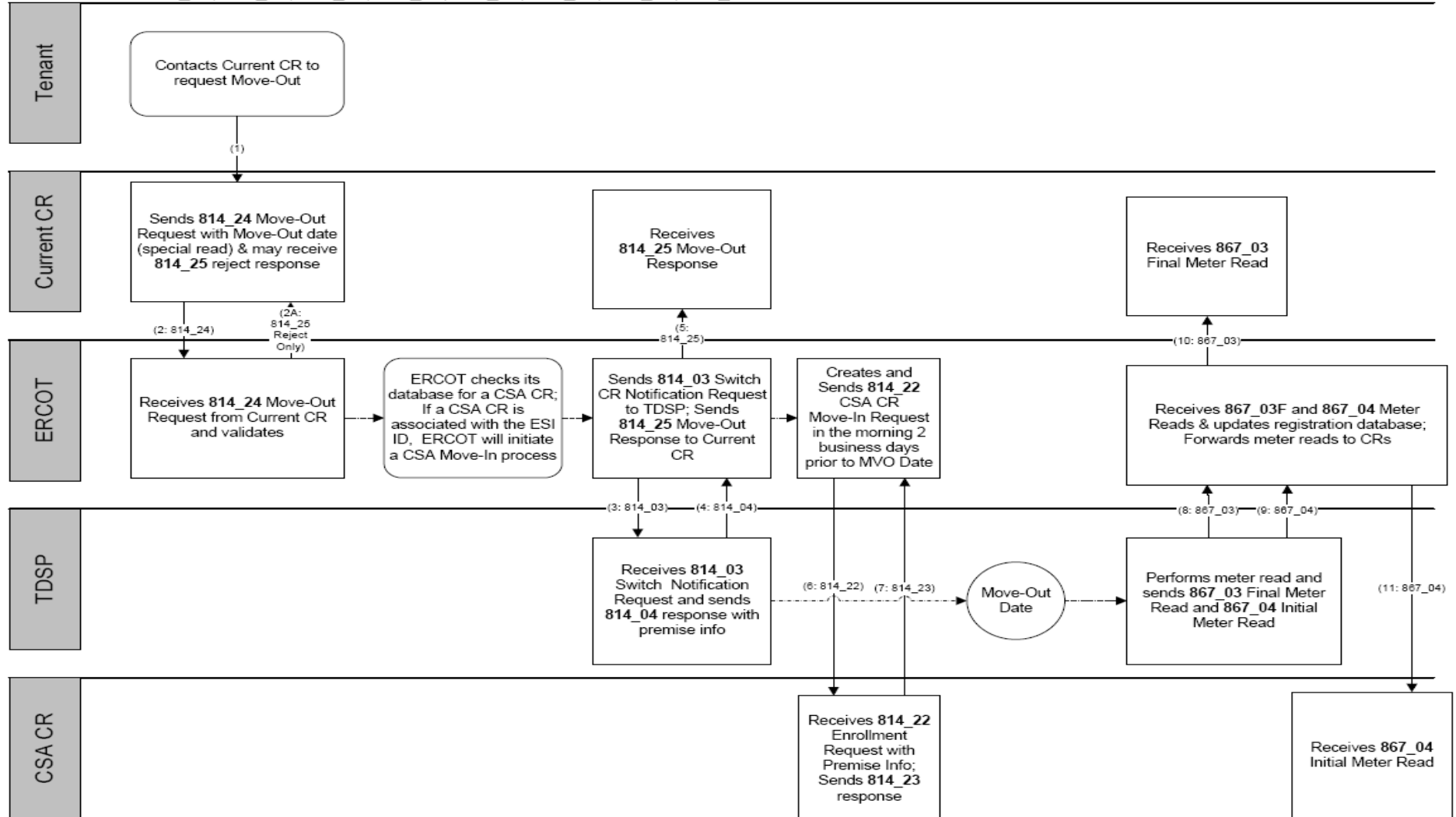


TX SET flow documentation for a MVO to CSA

Move-Out to CSA

Scenario: Move-Out, Landlord/Tenant, "Tenant Initiated"


Transactions: 814_24, 814_25, 814_03, 814_04, 814_22, 814_23, 867_03, 867_04



Business Process Transaction Inventory Review



Transaction Inventory - Switch

Transaction Type	Description	Initiates Business Process	Sent by	Received by
814_01	Enrollment Request		New CR	ERCOT
814_02	Enrollment Reject Response (if applicable)		ERCOT	New CR
814_03	Switch/Move-In CR Notification Request		ERCOT	TDSP
814_04	Switch/Move-In CR Notification Response		TDSP	ERCOT


Transaction Inventory - Switch

Transaction Type	Description	Initiates Business Process	Sent by	Received by
867_02	Historical Usage (if requested)		TDSP	ERCOT & New CR
814_05	Premise Information and Enrollment Response		ERCOT	New CR
814_06	Drop Due to Switch Request		ERCOT	Current CR
814_07	Drop Due to Switch Response		Current CR	ERCOT

Transaction Inventory - Switch

Transaction Type	Description	Initiates Business Process	Sent by	Received by
867_03F	Monthly Usage		TDSP	ERCOT & Current CR
867_04	Initial Meter Read Notification		TDSP	ERCOT & New CR


Transaction Inventory - MVI

Transaction Type	Description	Initiates Business Process	Sent by	Received by
814_16	Move-In Request		New CR	ERCOT
814_17	Move-In Reject Response (if applicable)		ERCOT	New CR
814_03	Switch/Move-In CR Notification Request		ERCOT	TDSP
814_04	Switch/Move-In CR Notification Response		TDSP	ERCOT

Transaction Inventory - MVI

Transaction Type	Description	Initiates Business Process	Sent by	Received by
814_05	Premise Information and Enrollment Response		ERCOT	New CR
867_02	Historical Usage (if requested)		TDSP	ERCOT & New CR
867_04	Initial Meter Read Notification		TDSP	ERCOT & New CR

Transaction Inventory - MVO

Transaction Type	Description	Initiates Business Process	Sent by	Received by
814_24	Move-Out Request		Current CR	ERCOT
814_25	Move-Out Response (Reject, if applicable)		ERCOT	Current CR
814_24	Move-Out Request		ERCOT	TDSP
814_25	Move-Out Response		TDSP	ERCOT & Current CR

Transaction Inventory - MVO

Transaction Type	Description	Initiates Business Process	Sent by	Received by
867_03F	Monthly Usage		TDSP	ERCOT & Current CR

- **ERCOT Retail Systems**
 - Retail transactions flow between ERCOT and Market Participants through a group of applications referred to as ERCOT Retail Systems
- **Facilitating the process of Customer Choice**
 - Texas SET Implementation Guides
 - There are two categories of transactions:
 - ERCOT Involved - Involve CRs, TDSPs, & ERCOT
 - Point-to-Point - Involve only CRs and TDSPs
 - Protocols
- **Swimlanes and the flow of transactions**
 - Provide a visual representation of transaction flows for business processes



Transaction Type		FROM			TO		
		ERCOT	TDSP	CR	ERCOT	TDSP	CR
Move in Request							
Move in CR notification Request							
Move in CR notification Response							
Premise Info and Move in Response							
Historical Usage							
Initial Meter Read							

Transaction Type		FROM				TO			
		ERCOT	Current CR	TDSP	New CR	ERCOT	Current CR	TDSP	New CR
Enrollment Request									
Switch CR Notification									
Notification Request									
Premise Info & Enrollment Response									
Drop Due to Switch Request									
Drop Due to Switch Response									
Final Meter Read									
Initial Meter Read									