PARTICIPANT BUILD PACK 2

SYSTEM INTERFACE DEFINITIONS

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AEMO Approval

This document has been prepared by:

NAME:	DANNY MCGOWAN	
Position:	**Principal Regulatory Analyst**	
Signature:		**Date**:

This document has been reviewed and conforms with authorised changes to the Gas Interface Protocol (GIP)

NAME:	PETER ALBERTS	
Position:	**Senior Manager, Gas Retail Market Development**	
Signature:		**Date**:

This document has been reviewed and conforms with AEMO's regulatory obligations:

NAME:	TERRY GRIMWADE	
Position:	**Executive General Manager, Market Development**	
Signature:		**Date**:

Version History

VERSION	DATE	AUTHOR(S)	CHANGES AND COMMENTS
1.0	28/11/2001	M. Kroumer	• Initial release
1.1	22/02/2002	M. Kroumer	• Updated versions of referenced documents • Generic Interfaces section contents is replaced with reference to B2B Architecture document. • Added several exception handling scenarios • Mandatory MeterRegistrationDate data element is changed to optional MIRNAssignmentDate • ActualChangeDate, BL & TSF are made optional in the Notice of Read Failure transaction • Objection Date made optional in the Objection Notification transaction • Minor typographical error corrections • Added CSV record count as data element to every aseXML transaction carrying CSV • Last_Read_Date CSV data element made optional and has the description corrected. • Fixed diagrams with and references to overlapping activity numbers • MeterDataHistoryRequest aseXML transaction has name changed to MeterDataGasHistoryRequest • Reviewed example scenarios • Corrected column heading in CSV Data Elements • Added MIRN Checksum algorithm description • Added Customer Transfer Request state diagram • Added CATS event codes
1.2	8/03/2002	P Martin	• Added RoleStatus to CATSChangeAlert • Changed ObjectionDate to mandatory in Objection Notification • Updated CSV transaction definitions • Renamed MeterDataGasHistoryRequest to MeterDataHistoryRequest • GasMeterFixNotification and GasMeterRemovalNotification become types of GasMeterNotification • GasStandingDataUpdate renamed to NMIStandingDataUpdateNotification • GasStandingDataUpdateResponse renamed to NMIStandingDataUpdateResponse • Replaced MeterRemovedDate with

			ServiceRequestCompletionDate in GasMeterRemovalNotification • Corrected names of BaseLoad and TemperatureSensitivityFactor throughout document • Added BMP specific Event Codes to Appendix C
1.3	22/03/2002	M.Kroumer	• Corrected CSV Data Elements names of Base_Load and Temperature_Sensitivity_Factor • Added Internal Systems Event Codes to Appendix C • Updated overview section to include appendix descriptions • Updated aseXML examples • AustralianPostCode replaced SitePostCode aseXML data element • Updated references to Transaction Definition Table and Data Element Definition • Updated Transaction acknowledgment specific event codes • Process flows and sequence diagrams are updated to reflect changed transaction names • A mandatory "Participant" field has been added to CATSChangeAlert to identify the problem notice originator • A mandatory / optional attribute for Event is aligned • Clarified comments to Last_Read_Date CSV data element in MeterDataMissingNotification transaction. • An Event data element is added to CurrentRetailerConfirmationResponse transaction • Names for Gas Meter Notification transactions (meter fix and meter removal) names are aligned • UpStandRemoved data element of GasMeterNotification/MeterRemoval transaction is replaced with MIRNStatus data element • Updated comment for RoleStatus data element values • Some of aseXML data element codes are replaced with full description • Corrected transaction name for Event Code 3033 • Event Code 3213 severity has been promoted to "Fatal" • B2B Event Codes will be defined in PBP3 System Interface Definitions • aseXML transaction names in Appendix D

			have been aligned with B2B transaction names • Event Code 3007 description is replaced with CATS Internal System Error • Added Rule references to Appendix D
1.4	05/04/2002	M.Kroumer	• References to GTPWG Table of Transactions and Data Element Definitions are set to 2.2 • CSV Data Element "Supply_Disconnected" in MeterDataNotification transaction is renamed to Meter_Status • "DateServiceRequestCompleted" is brought in line with aseXML schema and became "DateServiceOrderCompleted" • aseXML data element "Party" is defined • Minor corrections in Data Dictionaries • Appendix D is updated with references to transactions 31A,31B,49,50,50A,289,338 • Event codes 3215 and 3216 are added to BMP/PPS • aseXML data element NMIWithChecksum is brought in line with aseXML schema • Added InitiatingRequestID data element to the Objection Notification transaction • Added Participant data element to the Change Withdrawal Notification transaction • Participant data element in CATSNotifications becomes mandatory and nillable. • CSV component of MeterDataHistoryRequest transaction renamed to CSVHistoryRequestData • Corrected description of event code 3006 • Cosmetic changes to the document format to bring it in line with PBP3 format • Added MeteredSupplyPointsCountUpdate transaction and Data Dictionary updated accordingly • Activity diagram for meter removal notification has been updated • Estimation_Substitution_Reason_Code of CSVConsumptionData is marked as "Not Required"
1.5	04/06/2002	M.Kroumer	• Reason_for_Special_Read element of CSVConsumptionData is renamed to Reason_for_Read, PBP2 Change Log, #1. Updated reason code descriptions and added new codes, #4 • Added codes to element Estimation Substitution Reason Code. PBP2 Change Log, #2, #5, #8

			- Updated list of Participant IDs, PBP2 Change Log, #6, #17 - Added new event code (3217) to the list of BMP event codes, PBP2 Change Log, #7 - Added mapping of transactions to transaction groups. PBP2 Change Log, #10 - Removed references and specifications of aseXML transactions corresponding T40 and T40A, PBP2 Change Log, #11 - Added transaction reference for T206A. PBP2 Change Log, #12 - Clarified usage of numeric formats in Appendix A. *Decimal* data types are replaced with *Numeric* types of the same precisioin/scale. PBP2 Change Log, #13. - Updated section on meter installation and removal, renamed MeterRemoval to MIRNStatusUpdate, PBP2 Change Log, #14 - Usage description for CSV elements is updated for conditions when RecordCount is set to 0, PBP2 Change Log, #15 - Updated usage notes of Previous Read Date in CSVConsumptionData, element is made optional, PBP2 Change Log, #16 - Clarified usage of the CountDate element in MeteredSupplyPointsUpdate transaction, PBP2 Change Log, #18 - CATSNotification is added as another invoking transaction for the event code of 3009, PBP2 Change Log, #19. - Updated versions of referenced documents. - Added event code 3413, PBP2 Change Log, #20. - Added event code 3039, PBP2 Change Log, #21 - Modified description of MeterFix transaction (#22-1), bi-annual and ad-hoc refresh transaction usage is clarified (#22-2), clarified delivery methods for bi-annual and ad-hoc refresh transactions (#22-3), updated figure 4-35 (#22-4), S3 and E3 added to Estimation_Substitution_Type (#22-5), transaction 158 name updated (#22-6).
1.6	26/08/2002	M. Kroumer	- Added "NC" to the Adjustment_Reason_Code - Corrected list of invoking transactions, PBP2 Change Log, #24. - Descriptions of T264 & T264A clarify delivery mechanism, PBP2 Change Log, #25. - Clarified MeterFix notification description, PBP2 Change Log #26. See also #22-1. - Modified aseXML events severity from Fatal to Error, PBP2 Change Log #27.

			• Clarified CSV column designators order, PBP2 Change Log #28. • Clarified usage of timestamps in CSV elements, PBP2 Change Log #29. • Corrected a CATSNotification data element name from ObjectingAction to ObjectionAction. Also, aligned character case for ObjectionAction values. PBP 2 Change Log #30. • Updated diagrams Fig.4-3 & 4-9 to reflect retrospective transfers, PBP2 Change Log #31. • LoadDate element type changed to DateTime (#32-1); RecordCount added to Data Dictionary (#32-2); alphabetically sorted aseXML data element names in Data Dictionary (#32-3). • Modified description of event code 3004, PBP2 Change Log #33. • Added a footnote clarifying the use of codes and enumerations in Data Dictionary, PBP2 Change Log #34. • Clarified usage of CDATA and special characters in aseXML transactions. PBP2 Change Log #35. • Added event codes 3040 and 3041. PBP2 Change Log #36 & #37. • Minor: corrected position of MIRNStatus element in GasMeterNotification/MeterFix to match the schema. • Minor: updated event codes in invoking transactions.
1.7	23/02/2004	D.McGowan	• Change Request 35. Process flow diagrams pertaining to the transfer request status update (Figure 4-21) should be updated to reflect that there is no objection period when CATS deals with a prospective move-in transfer. The section 4.1.12 first paragraph also requires an amendment
			• Change Reqeust 42. Allow VENCorp to use the MeterFix Service Order transaction to assign the non-Host Retailer as the Financially Responsible Organisation (FRO) and remove the need for the Retailer to initiate a Customer Transfer request. Section 4.1.2 (Initiate Change) and 4.4.2 (VENCorp Meter Fix Notification)
			• Change Request 17. Remove restrictions on event codes to allow participants to select and utilise a pertinent event code from the entire list. New paragraph inserted in Appendix C -

			Gas FRC Application Event Codes.
			• Change Request 53. PBP2 Interface Definition does not clearly specify the processing differences in relation to how CATSDataRequests are handled in relation to Standing Data Request and Notice of Read Failures. The proposed change adds further clarity to this process. Refer to Sections 4.1.3.3 and 4.1.6.1
			• Minor changes to introduction and approval section to reflect post FRC operation
1.8	08/11/2004	D.McGowan	• Change Request 51. Currently VENCorp systems do not allow transfers on meter reads for basic meters taken on a non-business day. This results in transfers being rejected. There are currently no controls in Distribution Systems, which prohibit the performance of non-business day reads. It is more efficient to change VENCorp systems to enable transfers to take place with meter reads taken on a non-business day. Remove the CATS Event Code 3001 "Non Business Day" from Appendix C.
			• Change Rquest 66. Clarify the processing steps that occur in generating a Problem Notice. Refer Section 4.1.11 (Problem Notice).
1.9	18/07/2005	D.McGowan	• Change Request 68. Enables VENCorp to make available consistent FRC services in respect of gas customers on any network in Victoria, regardless of whether that network is supplied via the principal transmission system (PTS). Introduces a new data element "Network ID". Refer Section 4.1.3.3, 4.1.4.1, 4.3.3.1, 4.4.2.1, 5.2.7 and Appendix A Data Dictionary (A.1 aseXML Data Elements). • Change Request 77. This change results in a minor enhancement to VENCorp systems. It involves adding a validation check on MIRN Status update transactions to test whether the transaction is a basic meter. Refer to Section 4.4.3 and Appendix C – Gas FRC Application Event Codes. • Change Request 78. This change results in a minor enhancement to VENCorp systems. It involves adding a validation check on Meter Fix transactions to test whether the transaction is a 2nd Tier supply point. A further validation check is performed to test whether the network identifier also is valid. Refer Section 4.4.2.1 and Appendix C – Gas

			FRC Application Event Codes. • Minor changes to approval section to reflect VENCorp organisational changes.
2.0	01/6/2009	D.McGowan	• Changes for RoLR. RoLR change. Appendix A – Data Dictionary ,aseXML elements add two types to the Change Status Code.
3.0	01/07/2010	S. Monaco	• Ensure document complies with AEMO standard and styles. • Check and replace references (where applicable) to NGR with relevant NGR & RMP references. • Update terminology to correspond with current usage and definitions • Update acronyms to the current vernacular • Update images.
3.1	17/04/2012	S. Monaco	• Changes made under issue IN019/11 transfer validation.
3.2	30/07/2012	S. Macri	• IN011/12 – Residual Changes to align systems and schema with documentation (NECF)
3.3	01/02/2013	J. Luu	• IN013/11 – non-DTS Grampians. This proposed change to the Gas Interface Protocol will add a network ID for Grampians
3.4	01/01/2014	D. McGowan	• IN004/12 – Redundant Provision and minor GIP and Spec Pack changes
3.5	14/09/2015	Nandu Datar	• IN012/11 – Process to identify Previous FRO

Executive Summary

This document is the Participant Build Pack 2 - System Interface Definitions for delivery of the AEMO IT System Interfaces to support the operation of the Victorian Gas Retail Contestable Market.

References to Predecessors

To reflect the governance changes implemented on 1 July 2009, this document has been amended to remove references to the Victorian Energy Networks Corporation (VENCorp) and replace such references with Australian Energy Market Operator (AEMO). Where any content inadvertently refers to VENCorp it should be read as referring to AEMO.

It should be noted that participant ID "VENCORP" remains as the participant ID for AEMO as the gas market operator in Victoria and Queensland.

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1. Introduction

1.1 Purpose

The purpose of the Interface Definitions section of Participant Build Pack 2 is essentially to define the behaviour of the business and IT systems as viewed from the outside. The definitions identify the manner in which AEMO's business and IT systems communicate with external systems. This section of the PBP will provide all the information required to communicate with AEMO. It will present AEMO's systems as a "black box" highlighting only the necessary interfaces to AEMO that are required for all Market Participants, Distributors and Transmission Pipeline Owners to specify, build and test their systems.

1.2 Audience

The document has been written for business and IT personnel within the *Market Participants, Distributors and Transmission System Service Providers* as well as AEMO business and IT personnel. It is expected that the audience will have a familiarity with the overall business endeavour of Gas FRC in Victoria and with the artefacts listed in the Related Documents section of this document.

1.3 Related Documents

There are a number of related documents or artefacts that have been issued as part of Participant Build Pack 1 and should be read in conjunction with this document. The table below defines the documents and the versions used to generate this PBP2.

REF	ARTEFACT NAME	VERSION	RESPONSIBLE PARTY OR AUTHORS
1	Retail Market Procedures (Victoria)	Current version as published on AEMO's website	*Gas Retail Consultative Forum – Victoria (GRFC-V)*
2	Process Maps	Current version as published in the GIP	*Gas Transaction Protocol Working Group (GTPWG)*
3	Transaction Definition Table	Current version as published in the GIP	*Gas Transaction Protocol Working Group (GTPWG)*
4	Data Element Definition	Current version as published in the GIP	*Gas Transaction Protocol Working Group (GTPWG)*

REF	ARTEFACT NAME	VERSION	RESPONSIBLE PARTY OR AUTHORS
5	Guidelines for Development of a Standard for Energy Transactions in XML (aseXML)	Current version as published at http://www.aemo.com.au/aseXML/index.htm	*AseXML Standards Working Group (ASWG)*
6	Master MIBB Report List	Current version as published on AEMO's website	*AEMO*
7	Participant Build Pack Glossary	Current version as published in the GIP	*AEMO*
8	Participant Build Pack Usage Guidelines	Current version as published in the GIP	*AEMO*
9	Participant Build Pack 3 – FRC B2B System Architecture	Current version as published in the GIP	*AEMO*
10	Participant Build Pack 3 – B2B System Interface Definitions	Current version as published in the GIP	*AEMO*

*The GIP is published on the AEMO website.

1.4 Definitions and Acronyms

All terms related to this document are defined in the Ref.[7].

Please note that acronyms MIRN (Meter Installation Registration Number) and NMI (National Meter Identifier) are used in this document interchangeably.

1.5   Overview and Structure

This document is organised in a number of sections as described below:

SECTION	DESCRIPTION
Overview of Interfaces	This section describes the relationship between the various interfaces.
Generic Interfaces	This section describes the common or generic aspects of the Interfaces. It abstracts out into a common section such as security, file properties and timing constraints.
Specific Interfaces	This section describes the parts of the interface that are specific or only apply to a given interface.
Example Scenarios	This section gives detailed examples of a number of scenarios, some with the aseXML transactions.
Appendices	A number of appendices provided in this document to facilitate transaction search via cross-references and supply event codes and data elements details. A. Data Dictionary for aseXML transaction elements and CSV file column designators B. Standard aseXML event codes C. Gas FRC applications event codes D. GTPWG Table of Transactions cross references E. MIRN Checksum algorithm description F. State diagrams G. Index of transactions and CSV data elements

2. Overview of Interfaces

2.1 Overview

There are two types of interfaces described in this document: generic and specific interfaces.

Generic interfaces illustrate common message and transaction exchange Procedures and formats that are applicable to all transactions.

Specific interfaces focus on business and application logic. The interfaces are grouped based on the transaction categorisation defined in the Transaction Definition Table.

Every group of specific interfaces has one or more activity diagrams associated with it. The activity diagrams are based on the Process Flow diagrams, Ref. [2], delivered with PBP1. These process flows are presented as UML activity diagrams. The UML sequence diagrams representing the same processes with relevant aseXML transactions accompany the activity diagrams.

A sequence diagram has a table associated with them. Each row in this table describes correlation between the process flow and the corresponding aseXML transaction. Also, the same row refers to the name of the transaction as per the Transaction Definition Table, Ref. [3].

2.2 Scope

This document describes in details these transactions from the Transaction Definition Table are to be delivered with aseXML messages and labelled as either B2M or M2B in the "Type" column. Thus, this document does not include B2M transactions that will be communicated via MIBB or by other means (e.g. e-mail or fax). For details on these transactions please see Ref. [6].

Transactions exchanged between the Transmission System Service Provider (TSSP) and AEMO are not to be described in this document as these transactions are handled internally by AEMO. These transactions are 186, 195, 199, 201, 209, 213, 221, 225 and 230.

Transactions labelled as B2B in the Transaction Definition Table form part of the Participant Build Pack 3.

The transactions from the Transaction Definition Table that will have interfaces defined in Participant Build Pack 2 are listed in the following table.

GROUP	TRANSACTION DEFINITION TABLE REFERENCE
Customer Administration and Transfer	170, 181-185, 187, 191, 193-198, 200, 202-208, 210-212, 214, 219-220, 222-224, 226-229, 232-235, 170A, 182A, 187A, 195A, 214A, 206A
Meter Reads	10, 42, 52, 54, 247, 260, 261, 262, 263, 10A, 42A, 52A, 54A, 247A, 260A, 262A, 263A
Data Synchronisation	47, 48, 264, 264A, 338
Basic Meter Installation & Removal	94, 158

The table below maps transactions from the Transaction Definition Table to the AEMO IT Department Interface Numbers.

TRANSACTION DEFINITION TABLE REFERENCE	AEMO INTERFACE REFERENCE	INTERFACE NAME
170	INT-200	Initiate Change
187	INT-201	Input Objections
182, 214	INT-202	Update Change
191	INT-203	Clear Objection
205	INT-204	Withdraw Change
170A	INT-205	Change Response
187A	INT-206	Objection Response
183, 184, 185, 219, 220, 193, 194,195A 206, 207, 208, 196,197, 198, 222, 223, 224, 226, 227, 228, 229, 232-235	INT-208	Notification
181, 210, 211, 212	INT-211	Request Data
182 (delivered as Update Change)	INT-212	Receive Data
264	INT-220, INT-167	Bi-annual refresh of BL & TSF

TRANSACTION DEFINITION TABLE REFERENCE	AEMO INTERFACE REFERENCE	INTERFACE NAME
200-204	INT-214	Problem Notice Transaction
10, 42, 52, 54, 247, 260, 262, 263	INT-160, INT-165	Provision of Energy Data from BMDM to AEMO
261	INT-169	Non-provision of Energy Data
10A, 42A, 52A, 54A, 247A, 260A, 262A, 263A	INT-224	Response to Provision of Energy Data from BMDM to AEMO
47	INT-222	Request to AEMO Non-interval Meter Data
48	INT-223	Response to Request to AEMO Non-interval Meter Data
94	INT-232	Meter Fix Notification
158	INT-234	MIRN Status Update

In accordance with the Ref.[5], every aseXML transaction must be associated with a Transaction Group. The following table shows transaction group allocation:

SECTION OF THIS DOCUMENT	ASEXML TRANSACTION GROUP
Customer Administration and Transfer	CATS
Meter Reads	MDMT
Data Synchronisation	MDMT
Basic Meter Installation and Removal	SORD

3. Generic Interfaces

Detailed protocols and mechanisms for handling messages and transactions are described in detail in Ref.[9], Participant Build Pack 3 – FRC B2B System Architecture.

4. Specific Interfaces

The following sections describe specific interfaces and the aseXML transactions that realise them. Due to the ongoing transaction harmonisation efforts between various energy markets some transactions may not necessarily have the most descriptive names assigned to them. The Gas Industry re-uses as many as possible of the NEM national aseXML transactions that carry identical or near identical set of data elements. This sometimes may result in aseXML transaction name not spelling out the actual purpose of the transaction specified in the Transaction Definition Table. However this greatly reduces the documentation maintenance. As a result of using aseXML transactions, elements that are utilised by other energy markets but not by Gas FRC will be marked as "Not Required" or "NR".

It is important to note, that the use of CDATA (non-parsed character data), characters **<**, **>**, **&**, and hexadecimal characters is prohibited in all Victorian Gas transactions. Entity escape characters must be used to handle any special characters.

4.1 Customer Administration and Transfer

The transaction descriptions in this section are grouped around events that trigger different scenarios required for transferring and administration of customers.

4.1.1 Overview

This section describes transactions that provide support for the Customer Administration and Transfer functionality. The table below maps aseXML transactions to transaction types referenced in the Transaction Definition Table.

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
CATSChangeRequest	170	Initiate Transfer Request
	182	Response for Request Standing Data
	214	Alternative Transfer Date
CATSNotification	183, 184, 185	Notice of Transfer
	219, 220	Alternative Transfer Date (Notification)
	193, 194, 195A	Objection Notification or Objection Withdrawal Notification
	206, 207, 208, 206A	Withdrawal Transfer Notice (Notification)

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
	196, 197, 198, 222, 223, 224	Transfer Cancellation or Transfer Termination Notice
	226, 227, 228, 229	Notice of Transfer
	232, 233, 234, 235	Transfer Status Update
CATSChangeResponse	170A	Initiate Transfer Response
	182A, 214A	Update Response
CATSDataRequest	181	Request Standing Data
	210, 211, 212	Notice of Read Failure
CATSObjectionRequest	187	Objection
CATSObjectionResponse	187A	Objection Response
CATSObjectionWithdrawal	191	Withdrawal Objection Notice
CATSChangeWithdrawal	205	Withdrawal Transfer Notice
CATSChangeAlert	200, 202, 203, 204	Problem Notice

4.1.2 Initiate Change

The Initiate Change event is triggered by a Market Participant who wishes to be registered as the FRO for an existing Supply Point that has a metering installation in place. The diagram below shows the processes involved in the handling of the initiation of a customer transfer request.
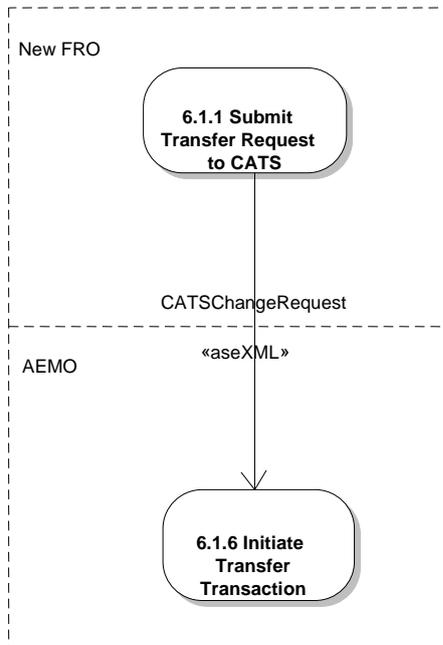
FIGURE 4-1. INITIATING TRANSFER REQUEST ACTIVITY DIAGRAM

This activity diagram translates into the following sequence diagram.

AEMO will validate the transaction and will inform the Market Participant if the validation has failed for some reason, as it will do with any other transaction.

FIGURE 4-2. INITIATING TRANSFER REQUEST SEQUENCE DIAGRAM

ID	ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSChangeRequest	Initiate Transfer Request	New FRO	AEMO	6.1.1 -> 6.1.6

4.1.2.1   Initiate   Transfer   Request   Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **170** INITIATE TRANSFER REQUEST
Trigger	A Market Participant as part of its process for establishing new customers triggers this interface.
Pre-conditions	Registered Market Participant
Post-conditions	If the Transaction Acknowledgment does not contain an Event: AEMO has created a new Change Request within the CATS database, with a Change Request Status of "Requested".
Transaction acknowledgment specific event codes	3000-3006, 3008-3013, 3016, 3018, 3019-3023, 3034, 3035-3038, 3041, 3045

A transfer request is initiated by a Market Participant (usually a Retailer) who wishes to become responsible for the wholesale settlement of the given Supply Point that has an existing meter installation in place. The Market Participant sends a CATSChangeRequest transaction to AEMO. The Initiate Transfer Request is implemented in terms of CATSChangeRequest aseXML transaction.

If a wrong customer transfer request transaction has been submitted by a new FRO, a customer transfer withdrawal request needs to be submitted to perform the rollback.

If a Market Participant attempts to raise a transfer request that is for a Network ID that they do not have rights for, the customer transfer request will be rejected.

If a customer transfer request has already been lodged against a MIRN and a Participant tries to raise another transfer request against the same MIRN then the first transfer received will be processed, any further transfers received will be rejected.

The following data elements are to be supplied with this transaction:

TRANSACTION:	CATSCHANGEREQUEST	
Received From:	New FRO	
Sent To:	AEMO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
ChangeReasonCode	M	
ProposedDate	M	Proposed date of transfer
MeterReadTypeCode	NR	
ActualEndDate	O	Only used for retrospective transfers
NMI	M	
checksum	M	An attribute of NMI

4.1.3   Processing Change Request

Following the initial processing of the transfer request, AEMO notifies other organisations involved via Notices of Transfer (CATSNotification). At the same time, AEMO generates a Request for Standing Data towards the Distributor and a response (CATSChangeResponse) to the Market Participant who initiated the change request.

During processing of the transfer request a request for standing data will be issued towards the Distributor and a number of parties will be notified.
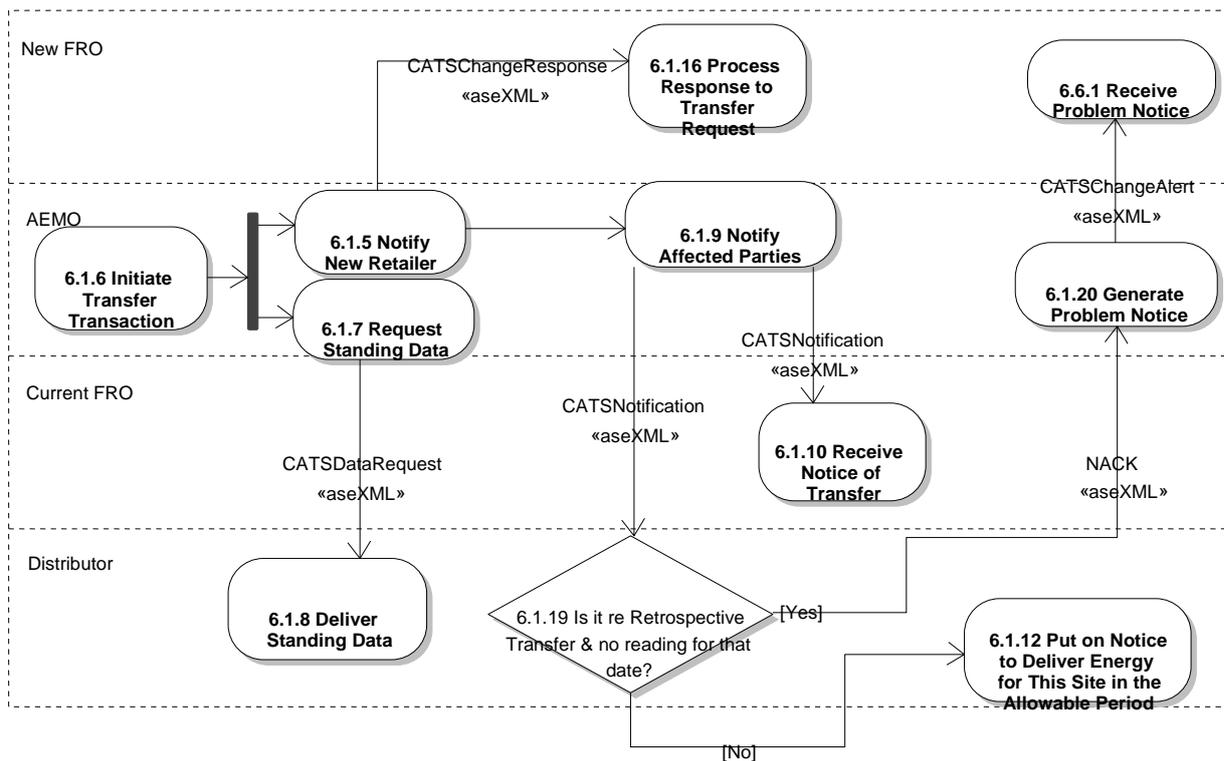
FIGURE 4-3. PROCESSING TRANSFER REQUEST ACTIVITY DIAGRAM

The following sequence diagram translates the process diagram above into aseXML transaction exchange.
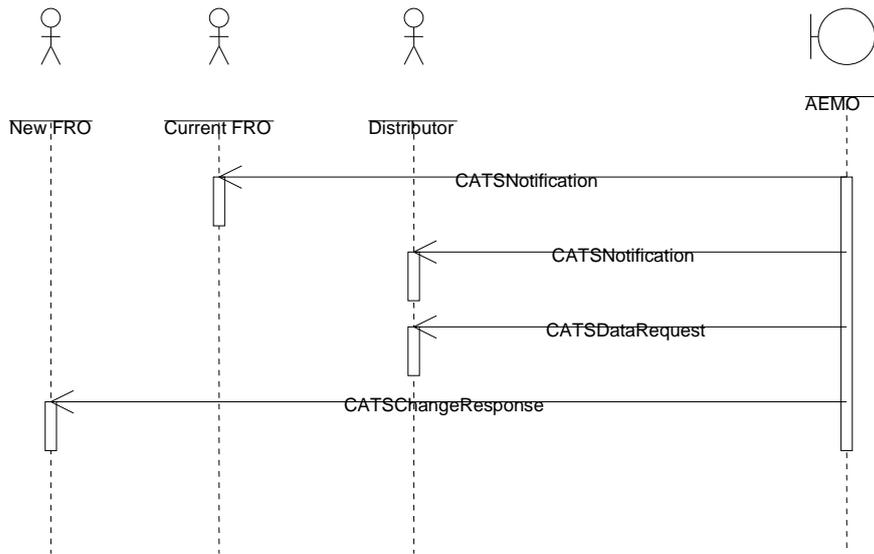
FIGURE 4-4. PROCESSING TRANSFER REQUEST SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSNotification	Notification of Transfer	AEMO	Current FRO	6.1.9 -> 6.1.10
2	CATSNotification	Notification of Transfer	AEMO	Distributor	6.1.9 -> 6.1.12
3	CATSDataReques t	Request Standing Data	AEMO	Distributor	6.1.7 -> 6.1.8
4	CATSChangeRes ponse	Initiate Transfer Response	AEMO	New FRO	6.1.5 -> 6.1.16

4.1.3.1   Notification of Transfer Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	183 NOTIFICATION OF TRANSFER (PROSPECTIVE)
	184 NOTIFICATION OF TRANSFER (RETROSPECTIVE)
	185 NOTIFICATION OF TRANSFER (PROSPECTIVE AND RETROSPECTIVE)
Trigger	This transaction is triggered by a valid transfer request.
Pre-conditions	A valid transfer request has been submitted.
Post-conditions	Participants are notified of transfer in progress.
Transaction acknowledgment specific event codes	3040

AEMO sends a Notice of Transfer to all Organisations assigned to a Role on the Change Request except New FRO, advising them that a transfer request is in progress for the Supply Point. The Notice of Transfer is implemented in terms of the CATSNotification aseXML transaction.

The following data elements are to be supplied with this transaction:

TRANSACTION:	CATSNOTIFICATION
Received From:	AEMO
Sent To:	Current FRO (183), Affected FRO (184), Distributor (185)

Data Element	Mandatory / Optional / Not Required	Usage
Role	M	The role assigned to the recipient
RoleStatus	M	"N" for a new role, "C" for a current role
Participant	M	Contains the initiator of the Change Request when this transaction is sent to the Distributor or Affected FRO, and xsi:nil="true" when the transaction is sent to the Current FRO.
RequestID	M	The unique ID assigned by AEMO to the Change Request
ChangeStatusCode	M	The current status of the change request
ChangeReasonCode	M	From change request
ProposedDate	M	From change request
MeterReadTypeCode	NR	
ActualEndDate	O	From change request if present
InitiatingRequestID	NR	Information already in RequestID
NMI	M	From change request
checksum	M	An attribute of NMI

4.1.3.2   Initiate Change Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **170A** TRANSFER RESPONSE
Trigger	Change Request has been successfully validated by AEMO
Pre-conditions	A valid transfer request transaction has been received.
Post-conditions	A Change Response is sent to the Market Participant who submitted the Initiate Transfer Request.
Transaction acknowledgment specific event codes	None

A Change Response is sent to the Market Participant who submitted the Initiate Transfer Request to indicate that the transfer request is in progress for the Supply Point.

The following data elements are to be supplied with this transaction:

TRANSACTION:	CATSCHANGERESPONSE
Received From:	AEMO
Sent To:	New FRO

Data Element	Mandatory / Optional / Not Required	Usage
RequestID	M	The unique ID assigned by AEMO to the Change Request
Event	M	At least event code must be supplied, other elements are optional

4.1.3.3   Request for Standing Data Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **181** REQUEST STANDING DATA
Trigger	Transfer notice.
Pre-conditions	A valid Transfer Request has been received.
Post-conditions	Data request is delivered to the Distributor.
Transaction acknowledgment specific event codes	3040

This additional transaction is sent to the Organisation that is responsible for providing data for the Supply Point (i.e. Distributor). The purpose of this request is to trigger the Organisation to supply the standing data.

The following data elements are to be supplied with this transaction:

TRANSACTION:	CATSDATAREQUEST	
Received From:	AEMO	
Sent To:	Distributor	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
Role	M	The role responsible for delivering data
RoleStatus	M	"N" for a new role, "C" for a current role
InitiatingRequestID	M	The unique ID assigned by AEMO to the Change Request
ActualChangeDate	NR	Not Required. Has no relevance to the initial CATSDataRequest.
AustralianPostCode	M	These data elements indicate what fields must be supplied with standing data response, see 4.1.4.1. Set to xsi:nil="true".
BaseLoad	M	
TemperatureSensitivityFactor	M	
MIRNAssignmentDate	M	For NetworkID:, required if the Supply Point MIRN sources gas from a distribution network not connected to a Transmission System operated under the NGR.
NetworkID	O	

TRANSACTION:	CATSDATAREQUEST
Received From:	AEMO
Sent To:	Distributor

Data Element	Mandatory / Optional / Not Required	Usage
NMI	M	
checksum	M	An attribute of NMI

NB NetworkID is mandatory in the request transaction only – it is always populated with xsi:nil="true"

4.1.4   Standing Data Delivery

Once a Transfer Request has been initiated, the Distributor will supply standing data for the requested meter.
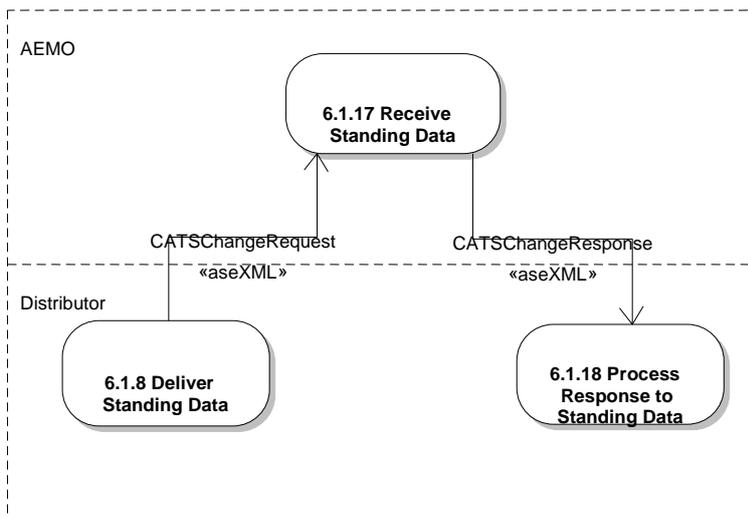
FIGURE 4-5. DELIVERING STANDING DATA ACTIVITY DIAGRAM

These process flows are translated into the following sequence diagram. Update data is submitted via a CATSChangeRequest aseXML transaction. The figure below shows a sequence of transactions exchanged when the Distributor generates an update request with standing data for a Supply Point. In response to the data update, AEMO will generate a response transaction towards the Distributor.
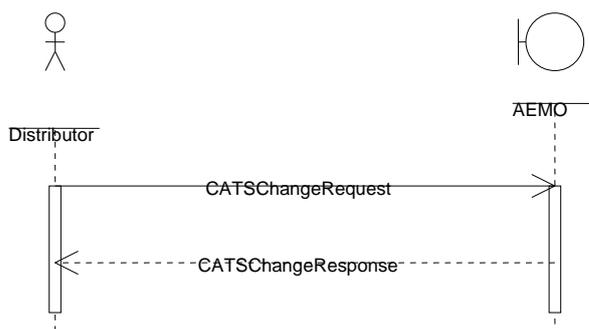
FIGURE 4-6. DELIVERING STANDING DATA SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSChange Request	Response for Request Standing Data	Distributor	AEMO	6.1.8 -> 6.1.17
2	CATSChange Response	Update Response	AEMO	Distributor	6.1.17 -> 6.1.18

4.1.4.1 Standing Data Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **182** RESPONSE FOR REQUEST STANDING DATA
Trigger	Received a valid Standing Data Request
Pre-conditions	None.
Post-conditions	None.
Transaction acknowledgment specific event codes	3001, 3014, 3016, 3017, 3024, 3025, 3041

A CATSChangeRequest aseXML transaction is used to provide standing data for the Supply Point. AEMO will then generate a CATSChangeResponse transaction to confirm the validation of standing data.

The following data elements must be supplied with the Standing Data Response:

TRANSACTION:	CATSCHANGEREQUEST	
Received From:	Distributor	
Sent To:	AEMO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
ChangeReasonCode	M	From change request
ProposedDate	M	From change request
MeterReadTypeCode	NR	
ActualEndDate	O	From change request if present
InitiatingRequestID	M	The ID assigned by AEMO to the Change Request that is being updated
NMI	M	
checksum	M	An attribute of NMI
AustralianPostCode	M	These elements are used only for supplying NMI standing data
BaseLoad	M	For NetworkID, required if the Supply Point MIRN sources gas from a distribution network not connected to Transmission System operated under the NGR.
TemperatureSensitivityFactor	M	
NetworkID	O	
MIRNAssignmentDate	O	

4.1.4.2   Response to Delivery of Standing Data Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **182A** RESPONSE TO STANDING DATA REQUEST
Trigger	Delivery of standing data
Pre-conditions	Standing data is successfully validated
Post-conditions	None
Transaction acknowledgment specific event codes	None

CATSChangeResponse transaction is used to convey the standing data delivery response. This transaction is sent to the originator of the Change Request. For details see Section 4.1.3.2

4.1.5   Alternative Transfer Date

The Market Participant who initiated the transfer request may update the Proposed Transfer Date of the request during the predetermined time period.
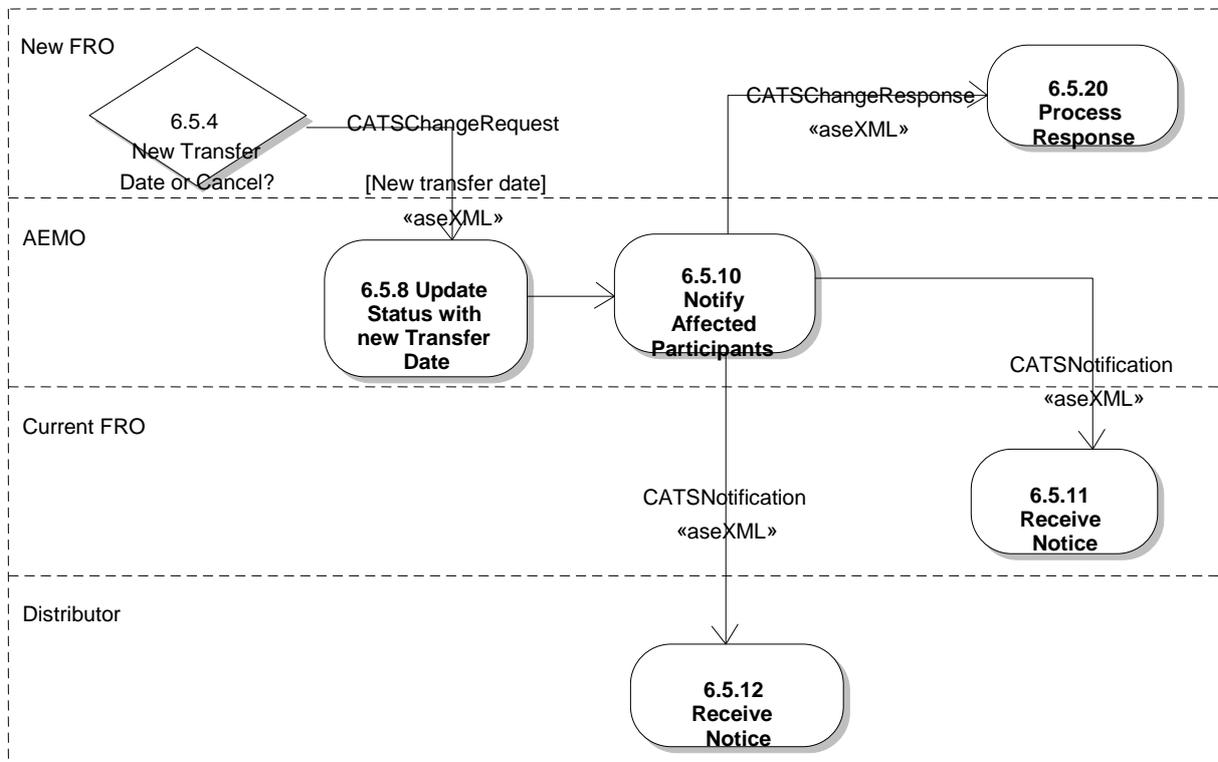
FIGURE 4-7. PROVIDING ALTERNATIVE TRANSFER DATE ACTIVITY DIAGRAM

When the Market Participant requests a Proposed Transfer Date change, the sequence below takes place. Alternative transfer date is submitted via the CATSChangeRequest aseXML transaction. Following the processing of the request, AEMO issues notifications to other Organisations assigned to a role for the Change Request and sends an update response to the Market Participant (New FRO) who issued the original Change Request.
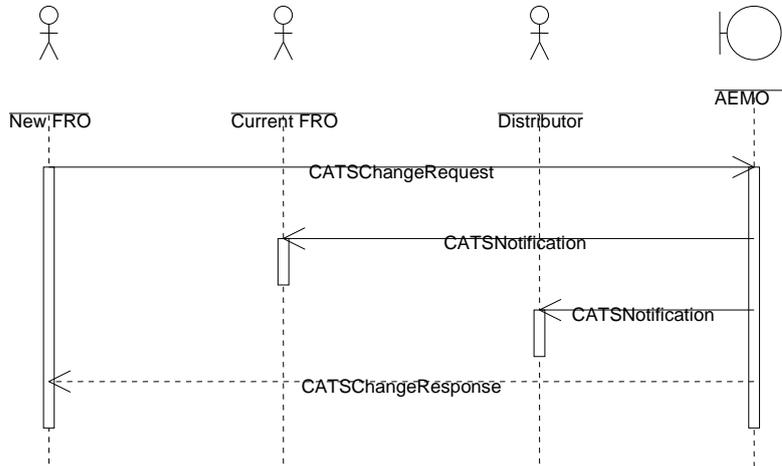
FIGURE 4-8. PROVIDING ALTERNATIVE TRANSFER DATE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSChangeRequest	Alternative Transfer Date	New FRO	AEMO	6.5.4 -> 6.5.8
2	CATSNotification	Alternative Transfer Date	AEMO	Current FRO	6.5.10 -> 6.5.11
3	CATSNotification	Alternative Transfer Date	AEMO	Distributor	6.5.10 -> 6.5.12
4	CATSChangeResponse	Response to Alternative Transfer Date Request	AEMO	New FRO	6.5.10 -> 6.5.20

4.1.5.1   Alternative Transfer Date Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **214** ALTERNATIVE TRANSFER DATE (FROM NEW FRO)
Trigger	Notice of Read Failure
Pre-conditions	An Alternative Transfer Date request is issued within 10 days from Read Failure Notice
Post-conditions	Receipt by AEMO of a valid alternative transfer date
Transaction acknowledgment specific event codes	3000-3006, 3008-3013, 3016, 3018, 3019-3023,3034, 3035-3038, 3041

Alternative Transfer Date transaction is implemented in terms of a CATSChangeRequest aseXML transaction.

The following data need to be supplied with the Alternative Transfer Date transaction:

TRANSACTION:	CATSCHANGEREQUEST
Received From:	New FRO
Sent To:	AEMO

Data Element	Mandatory / Optional / Not Required	Usage
ChangeReasonCode	M	From change request
ProposedDate	M	Alternative transfer date
MeterReadTypeCode	NR	
ActualEndDate	O	From change request if present
InitiatingRequestID	M	The ID assigned by AEMO to the Change Request that is being updated
NMI	M	
checksum	M	An attribute of NMI

4.1.5.2   Update Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **219** ALTERNATIVE TRANSFER DATE (TO CURRENT FRO) • **220** ALTERNATIVE TRANSFER DATE (TO DISTRIBUTOR)
Trigger	Alternative Transfer Date
Pre-conditions	Acceptance of the Alternative Transfer Date by AEMO
Post-conditions	The Current FRO and the Distributor are notified of the new transfer date
Transaction acknowledgment specific event codes	3040

This transaction uses an aseXML CATSNotification to notify all Organisations assigned to Roles other than the Role that initiated the Update.

The following table specifies the data elements to be included in the CATSNotification:

TRANSACTION:		CATSNOTIFICATION
Received From:		AEMO
Sent To:		Current FRO (219), Distributor (220)
Data Element	**Mandatory / Optional / Not Required**	**Usage**
Role	M	The role assigned to the recipient
RoleStatus	M	"N" for a new role, "C" for a current role
Participant	O	Contains the initiator of the Change Request when notification is sent to the Distributor, but xsi:nil="true" when it is generated towards the Current FRO.
RequestID	M	The unique ID assigned by AEMO to the Change Request
ChangeStatusCode	M	The current status of the Change Request
ChangeReasonCode	M	From change request
ProposedDate	M	From change request
MeterReadTypeCode	NR	
ActualEndDate	O	From change request if present
InitiatingRequestID	NR	Information already in RequestID
NMI	M	Data taken from change request
checksum	M	An attribute of NMI

4.1.5.3   Alternative Transfer Date Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	214A RESPONSE TO ALTERNATIVE TRANSFER DATE REQUEST
Trigger	Alternative Transfer Date request successfully validated.
Pre-conditions	Alternative Transfer Date request has been received.
Post-conditions	The New FRO has received the response confirming the Alternative Transfer Date
Transaction acknowledgment specific event codes	None

CATSChangeResponse transaction is used to convey update response. This transaction is sent to the originator of the Change Request. For details see Section 4.1.3.2

4.1.6   Notice of Read Failure

A Notice of Read Failure is generated by the AEMO when no meter reads have been delivered to AEMO with respect to the Change Request within predetermined time interval.
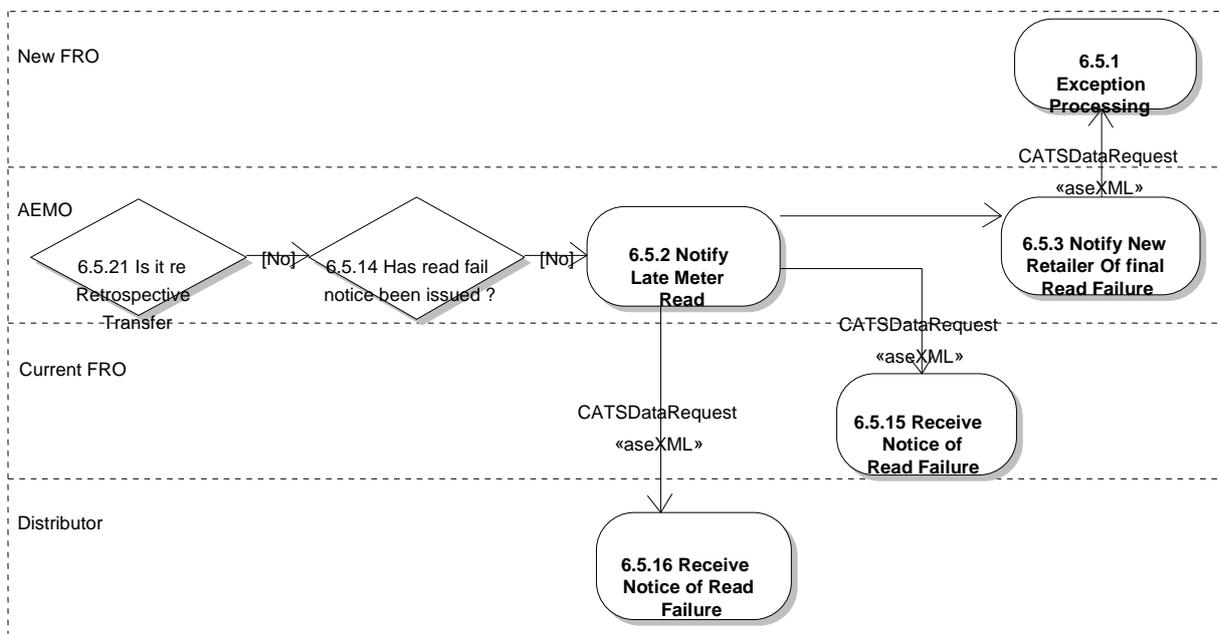
FIGURE 4-9. GENERATING NOTICE OF READ FAILURE ACTIVITY DIAGRAM

The following sequence diagram translates the process activities above into aseXML transactions exchange. Read failure notices are realised as CATSDataRequest transactions.
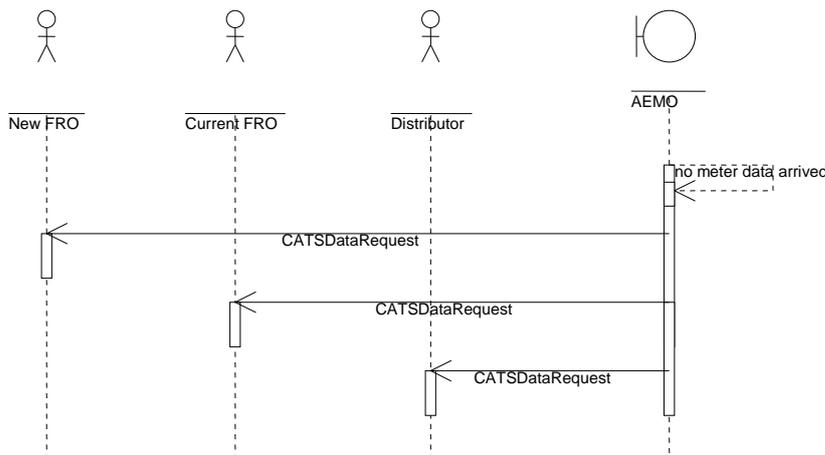
FIGURE 4-10. GENERATING READ FAILURE NOTICE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSDataRequest	Notice of Read Failure	AEMO	New FRO	6.5.3 -> 6.5.1
2	CATSDataRequest	Notice of Read Failure	AEMO	Current FRO	6.5.2 -> 6.5.15
3	CATSDataRequest	Notice of Read Failure	AEMO	Distributor	6.5.2 -> 6.5.16

4.1.6.1   Notice of Read Failure Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	210 NOTICE OF READ FAILURE (TO CURRENT FRO) 211 NOTICE OF READ FAILURE (TO NEW FRO) 212 NOTICE OF READ FAILURE (TO DISTRIBUTOR)
Trigger	Transfer notice
Pre-conditions	A valid Transfer Request has been received
Post-conditions	Data request is delivered to the New FRO, Current FRO and the Distributor.
Transaction acknowledgment specific event codes	3040

This data request transaction serves as a Notice of Read Failure, which will be delivered to Organisations assigned to a Role for the Change Request.

The following data elements are to be supplied with this transaction:

TRANSACTION:	CATSDATAREQUEST
Received From:	AEMO
Sent To:	Current FRO (210) New FRO (211) Distributor (212)

Data Element	Mandatory / Optional / Not Required	Usage
Role	M	The role responsible for delivering data
RoleStatus	M	"N" for a new role, "C" for a current role
InitiatingRequestID	M	The unique ID assigned by AEMO to the Change Request
ActualChangeDate	O	Mandatory if AustralianPostCode, BaseLoad and TemperatureSensitivityFactor and MIRNAssignmentDate not present. (Note: If present indicates Meter Read data is required).If present set to xsi:nil="true"
NMI	M	
checksum	M	An attribute of NMI
AustralianPostCode	O	Required NMI standing data. Mandatory if ActualChangeDate not present (Note: If present indicates Standing Data required). If present set to xsi:nil="true".
BaseLoad	O	
TemperatureSensitivityFactor	O	
MIRNAssignmentDate	O	

4.1.7 Input Objection

The Current FRO sending an Objection Request to AEMO triggers the Input Objection scenario.
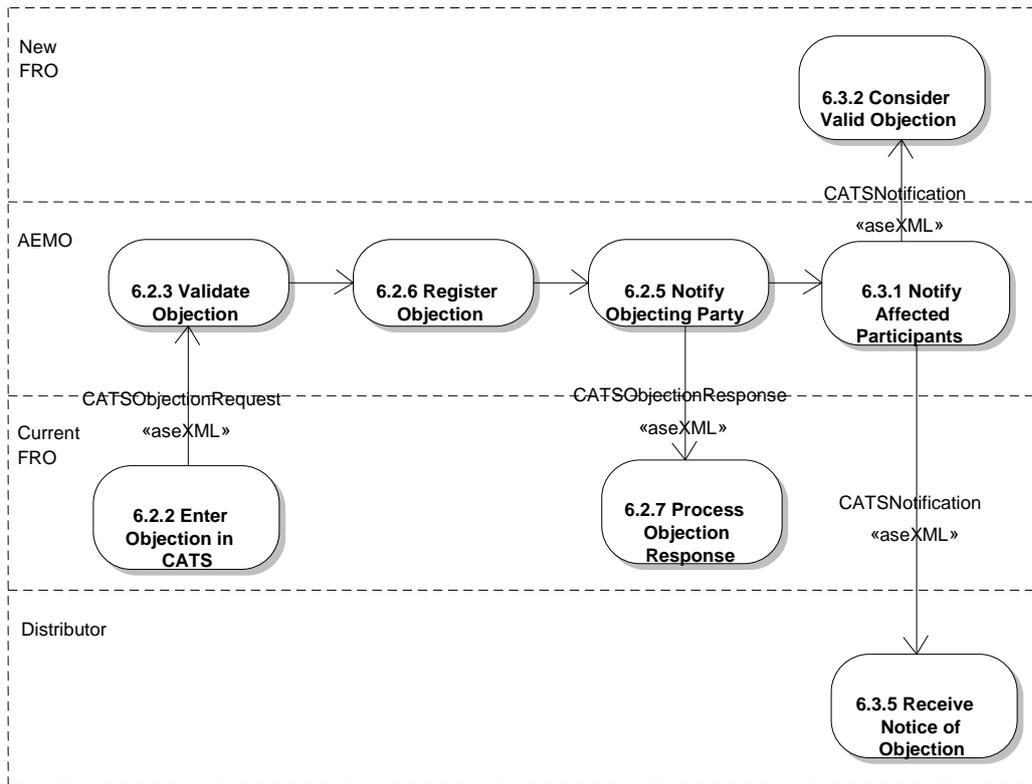
FIGURE 4-11. INPUT OBJECTION ACTIVITY DIAGRAM

AEMO performs validation of the request. When the validation is completed, AEMO sends a CATSObjectionResponse transaction to the Current FRO. Then, following the completion of the processing, AEMO sends CATSNotification transactions to the other Roles for the Change Request.

The following sequence diagram represents a successful scenario, i.e. process flow for a valid objection. In the case of failed validation, no notifications will be generated.
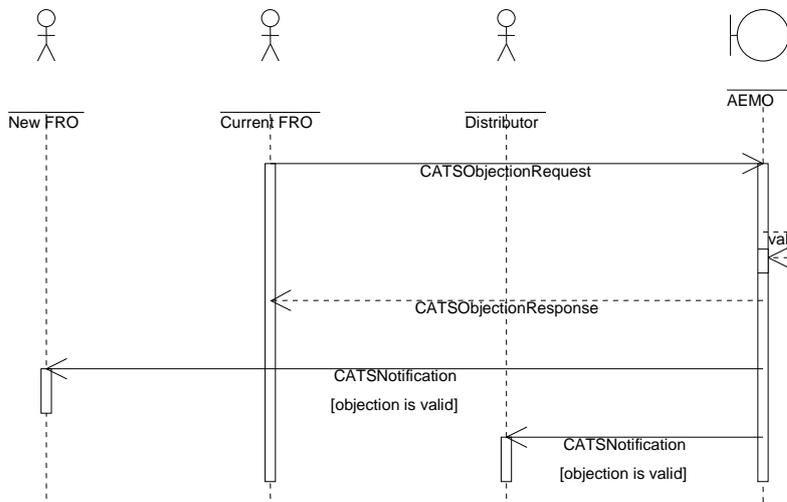
FIGURE 4-12. INPUT OBJECTION SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSObjectionRequest	Objection	Current FRO	AEMO	6.2.2 -> 6.2.3
2	CATSObjectionResponse	Objection Response	AEMO	Current FRO	6.2.5 -> 6.2.7
3	CATSNotification	Objection Notification	AEMO	New FRO	6.3.1 -> 6.3.2
4	CATSNotification	Objection Notification	AEMO	Distributor	6.3.1 -> 6.3.5

The following sections describe in details aseXML transactions involved in the objection input processing.

4.1.7.1   Objection Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **187** OBJECTION
Trigger	Transfer Notice
Pre-conditions	Transfer is in progress
Post-conditions	Receipt by AEMO of a transfer request objection
Transaction acknowledgment specific event codes	3018, 3028-3030

The only party that is allowed to generate an objection is the Current FRO. Following validation and processing at AEMO, this transaction will instigate a response towards objecting participant and a number of notifications towards other involved participants. An objection request is implemented as an aseXML CATSObjectionRequest transaction.

The following must be supplied with the Objection transaction:

TRANSACTION:	CATSOBJECTIONREQUEST	
Received From:	Current FRO	
Sent To:	AEMO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
InitiatingRequestID	M	The ID assigned by AEMO to the Change Request that is being updated
Role	M	Role of the objecting party
ObjectionCode	M	Must be a valid objection reason code.

4.1.7.2   Objection Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **187A** OBJECTION RESPONSE
Trigger	Objection Notice
Pre-conditions	A valid objection has been received.
Post-conditions	Objecting participant has been issued with a objection identifier.
Transaction acknowledgment specific event codes	None

This transaction is implemented in aseXML with CATSObjectionResponse.

The following data elements are to be supplied with the Objection Response transaction:

TRANSACTION:	CATSOBJECTIONRESPONSE	
Received From:	AEMO	
Sent To:	Current FRO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
ObjectionID	M	The ID assigned by AEMO to the Objection Request.
Event	M	At least event code must be supplied, other elements are optional

4.1.7.3   Objection Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	193 OBJECTION NOTIFICATION OR OBJECTION WITHDRAWAL NOTIFICATION (PROSPECTIVE FRO)
	194 OBJECTION NOTIFICATION OR OBJECTION WITHDRAWAL NOTIFICATION (DISTRIBUTOR)
Trigger	Objection Notice
Pre-conditions	Objection has been successfully validated.
Post-conditions	Participants have been notified of submitted objection.
Transaction acknowledgment specific event codes	3040

The following data are to be supplied with the Objection Notification transaction:

TRANSACTION:	CATSNOTIFICATION
Received From:	AEMO
Sent To:	Prospective FRO (193) Distributor (194)

Data Element	Mandatory / Optional / Not Required	Usage
Role	M	The role assigned to the recipient
RoleStatus	M	"N" for a new role, "C" for a current role
Participant	M	The initiator of the Change Request. In the case of a raised objection, all participants will be notified.
RequestID	M	The unique ID assigned by AEMO to the Change Request
ChangeStatusCode	M	The current status of the change request
ChangeReasonCode	M	From change request
ProposedDate	M	From change request
InitiatingRequestID	NR	Information already in RequestID
NMI	M	From change request
checksum	M	An attribute of NMI
Participant	M	Name of Objecting Participant
ObjectionID	M	The unique ID assigned by AEMO to the Objection Request
ObjectionAction	M	"Raised" or "Withdrawn"
InitiatingRequestID	M	A copy of the InititatingRequestID above
Role	M	Role of the Objecting Participant
ObjectionCode	M	Valid objection reason code
ObjectionDate	M	The date the objection was recorded in CATS (and therefore

TRANSACTION:	CATSNOTIFICATION	
Received From:	AEMO	
Sent To:	Prospective FRO (193) Distributor (194)	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
		the commencement of the objection period).

4.1.8   Clear Objection

The Clear Objection event allows an Organisation that has raised an objection to a transfer request to withdraw that objection.
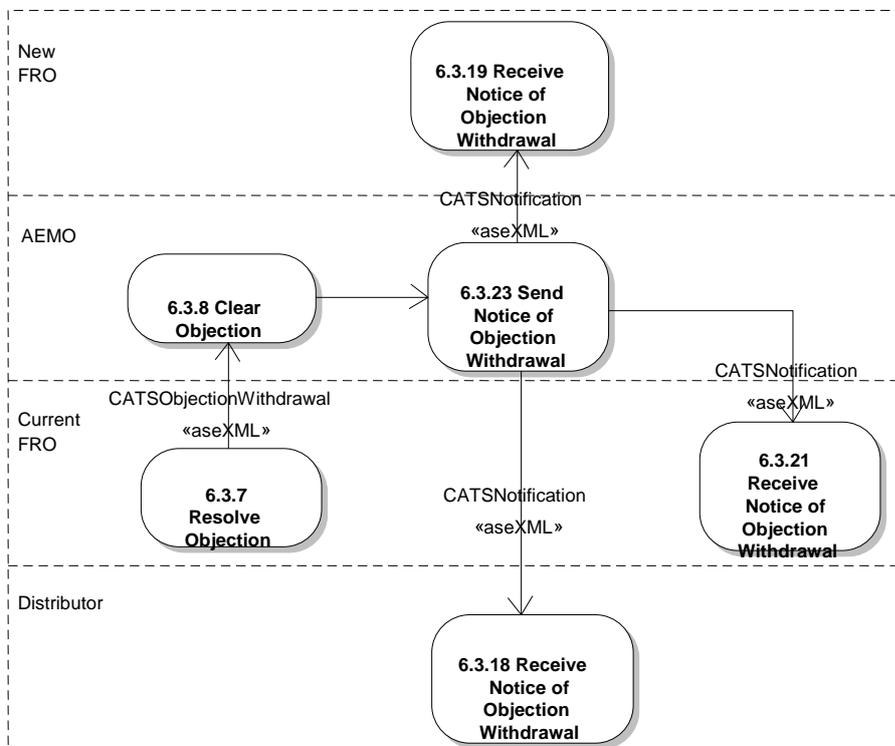
FIGURE 4-13. CLEARING OBJECTION ACTIVITY DIAGRAM

The realisation of the process flow shown above is presented on the following sequence diagram. The Current FRO sends a CATSObjectionWithdrawal transaction to AEMO. After the processing of this transaction is complete, AEMO will send CATSNotification transaction to all Organisations assigned to a Role for the Change Request, including the Current FRO.

The following sequence diagram translates the process flow above into a sequence of aseXML transactions.
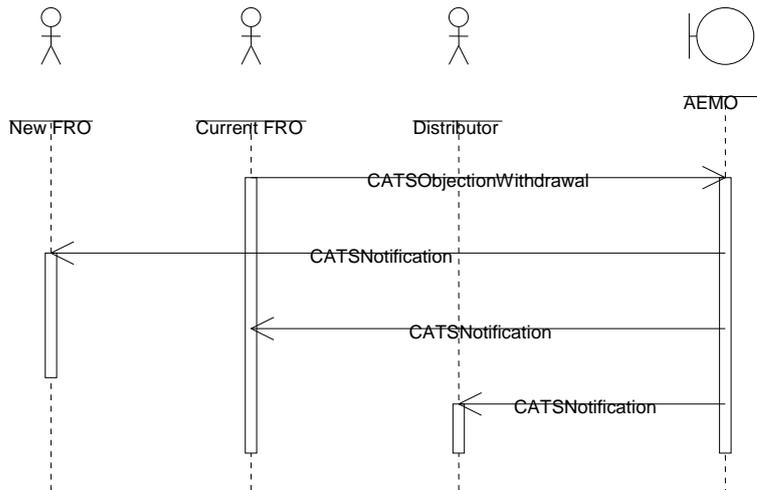
FIGURE 4-14. CLEARING OBJECTION SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSObjectionWithdrawal	Withdrawal Objection Notice	Current FRO	AEMO	6.3.7 -> 6.3.8
2	CATSNotification	Objection Withdrawal Notification	AEMO	New FRO	6.3.23 -> 6.3.19
3	CATSNotification	Objection Withdrawal Notification	AEMO	Current FRO	6.3.23 -> 6.3.21
4	CATSNotification	Objection Withdrawal Notification	AEMO	Distributor	6.3.23 -> 6.3.18

The following sections describe in details aseXML transactions involved in the process of clearing an objection.

4.1.8.1   Withdrawal Objection Notice Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• **191** WITHDRAWAL OBJECTION NOTICE
Trigger	Resolved objection.
Pre-conditions	Objection has been submitted.
Post-conditions	AEMO is informed on objection withdrawal.
Transaction acknowledgment specific event codes	3016, 3029, 3032, 3033

The only party that is allowed to generate a withdrawal of the objection is the Current FRO. Following validation and processing at AEMO, this transaction will instigate a number of notices generated towards all involved participants.

The following data are to be supplied with the Withdrawal Objection Notice transaction:

TRANSACTION:	CATSOBJECTIONWITHDRAWAL	
Received From:	Objecting (Current) FRO	
Sent To:	AEMO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
ObjectionID	M	The ID assigned by AEMO to the Objection Request.
InitiatingRequestID	M	The ID assigned by AEMO to the Change Request.
Role	M	Role initiating the withdrawal
ObjectionCode	M	Valid Objection Reason Code

4.1.8.2   Objection Withdrawal Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	193 OBJECTION NOTIFICATION OR OBJECTION WITHDRAWAL NOTIFICATION (PROSPECTIVE FRO)
	194 OBJECTION NOTIFICATION OR OBJECTION WITHDRAWAL NOTIFICATION (DISTRIBUTOR)
	195A OBJECTION NOTIFICATION OR OBJECTION WITHDRAWAL NOTIFICATION (CURRENT FRO).
Trigger	Objection withdrawal notice has been submitted.
Pre-conditions	Objection withdrawal has been successfully validated.
Post-conditions	Participants have been notified of objection withdrawal.
Transaction acknowledgment specific event codes	3040

An aseXML CATSNotification transaction as per Section 4.1.7.3 will be used for notifying all Organisations assigned to Roles for the Change Request.

4.1.9   Withdraw Change

The following transactions allow the Market Participant that initiated a Change Request to withdraw the request. A withdrawal may be submitted at any time before the Change Request is completed or cancelled.
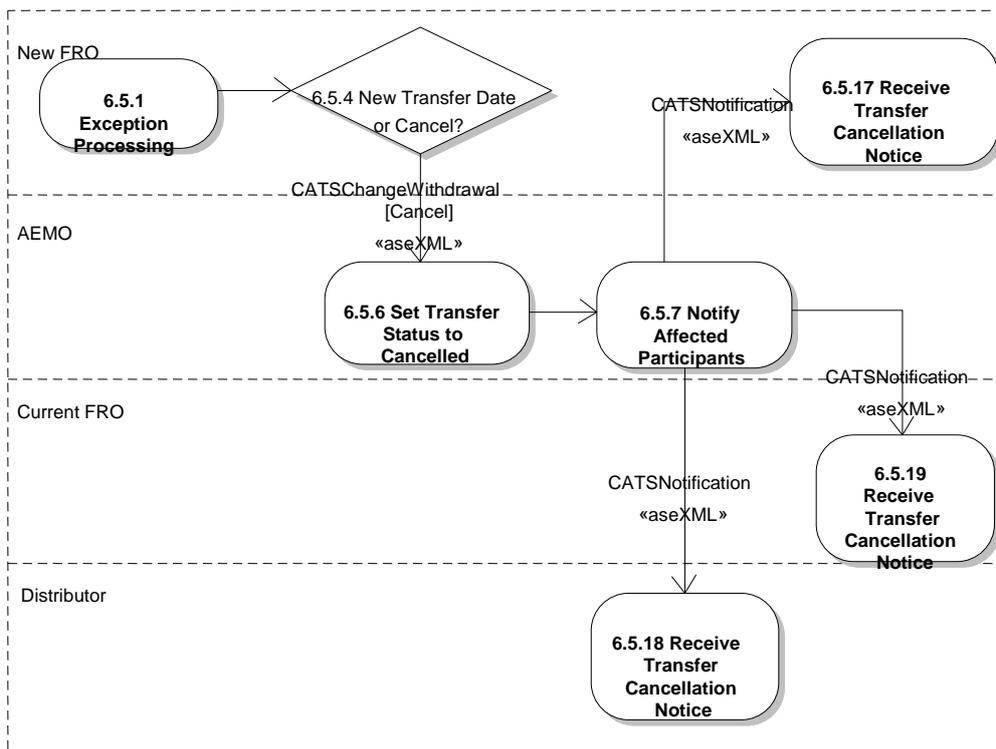
FIGURE 4-15. WITHDRAW CHANGE ACTIVITY DIAGRAM

To initiate Withdraw Change, the Market Participant sends a CATSChangeWithdrawal transaction to AEMO. AEMO will validate and process the transaction. Following the processing, AEMO will send CATSNotification to all Roles assigned to the Change Request.

The following sequence diagram translates the process flow on the diagram above into aseXML transaction exchange.
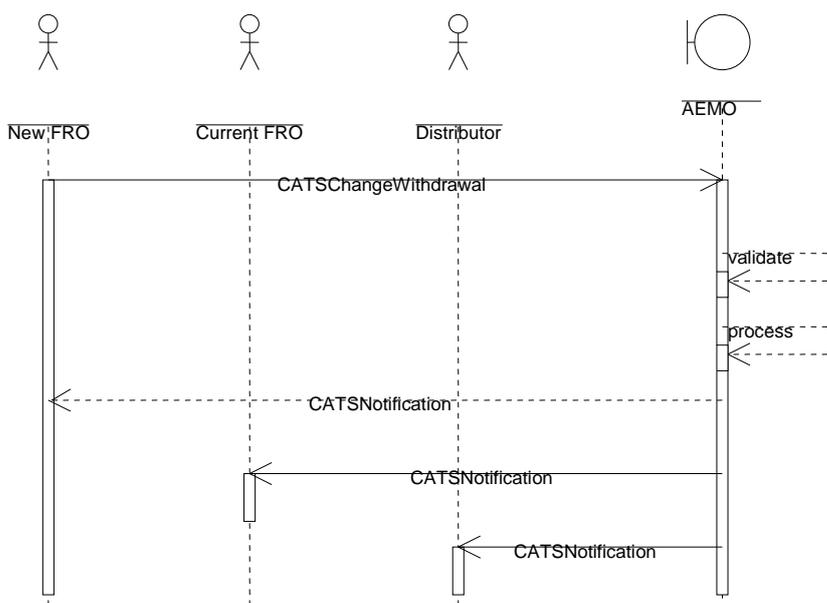
FIGURE 4-16. WITHDRAW CHANGE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSChange Withdrawal	Withdrawal Transfer Notice	New FRO	AEMO	6.5.4 -> 6.5.6
2	CATSNotification	Withdrawal Transfer Notice (as Notification)	AEMO	New FRO	6.5.7 -> 6.5.17
3	CATSNotification	Withdrawal Transfer Notice (as Notification)	AEMO	Current FRO	6.5.7 -> 6.5.19
4	CATSNotification	Withdrawal Transfer Notice (as Notification)	AEMO	Distributor	6.5.7 -> 6.5.18

The sections below describe in details the content of aseXML transactions that will participate in the withdrawal of a customer transfer request.

4.1.9.1 Withdrawal Transfer Notice

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	• 205 WITHDRAWAL TRANSFER NOTICE (TO AEMO)
Trigger	None.
Pre-conditions	Transfer has not been completed.
Post-conditions	AEMO has been notified of transfer withdrawal.
Transaction acknowledgment specific event codes	3025, 3026

The Withdrawal Transfer Notice transaction is realised with CATSChangeWithdrawal aseXML transaction.

The following data elements are to be supplied with the Withdrawal Transfer Notice:

TRANSACTION:	CATSCHANGEWITHDRAWAL	
Received From:	New FRO	
Sent To:	AEMO	
Data Element	Mandatory / Optional / Not Required	Usage
RequestID	M	The ID assigned by AEMO to the Change Request.

4.1.9.2   Withdrawal Transfer Notice (Notification)

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	206 WITHDRAWAL TRANSFER NOTICE (TO CURRENT FRO) 207 WITHDRAWAL TRANSFER NOTICE (TO AFFECTED FRO) 208 WITHDRAWAL TRANSFER NOTICE (TO DISTRIBUTOR) 206A WITHDRAWAL TRANSFER NOTICE (TO NEW FRO)
Trigger	Withdrawal Transfer Notice
Pre-conditions	Valid withdrawal notice
Post-conditions	Terminated transfer
Transaction acknowledgment specific event codes	3040

The Withdrawal Transfer Notice (Notification) is realised with CATSNotification aseXML transaction.

The following data elements are to be supplied with the Withdrawal Transfer Notice:

TRANSACTION:	CATSNOTIFICATION		
Received From:	AEMO		
Sent To:	Current FRO (206) Affected FRO (207) Distributor (208) New FRO (206A)		
Data Element	Mandatory / Optional / Not Required	Usage	
Role	M	The role assigned to the recipient	
RoleStatus	M	"N" for a new role, "C" for a current role	
Participant	M		
RequestID	M	The unique ID assigned by AEMO to the Change Request	

TRANSACTION:	CATSNOTIFICATION
Received From:	AEMO
Sent To:	Current FRO (206) Affected FRO (207) Distributor (208) New FRO (206A)

Data Element	Mandatory / Optional / Not Required	Usage
ChangeStatusCode	M	The current status of the change request
ChangeReasonCode	M	From change request
ProposedDate	M	
NMI	M	
checksum	M	An attribute of NMI

4.1.10 Transfer Cancellation Due to Expired Objection

The figure below shows the processes involved in the transfer cancellation if AEMO, who internally monitors the objection period, has triggered this process. When this process is triggered, it will search for transfer requests that are eligible for cancellation.

Other circumstances when the process can be activated is when a Read Failure Notice has been issued for the Change Request, Proposed Transfer Date Amendment Period for the Change Request has expired, and the New FRO has not supplied an updated Alternative Transfer Date.

As the activity diagram below presents a fragment of a larger process diagram, vertical synchronisation bars show only input that is relevant to the context of this section.
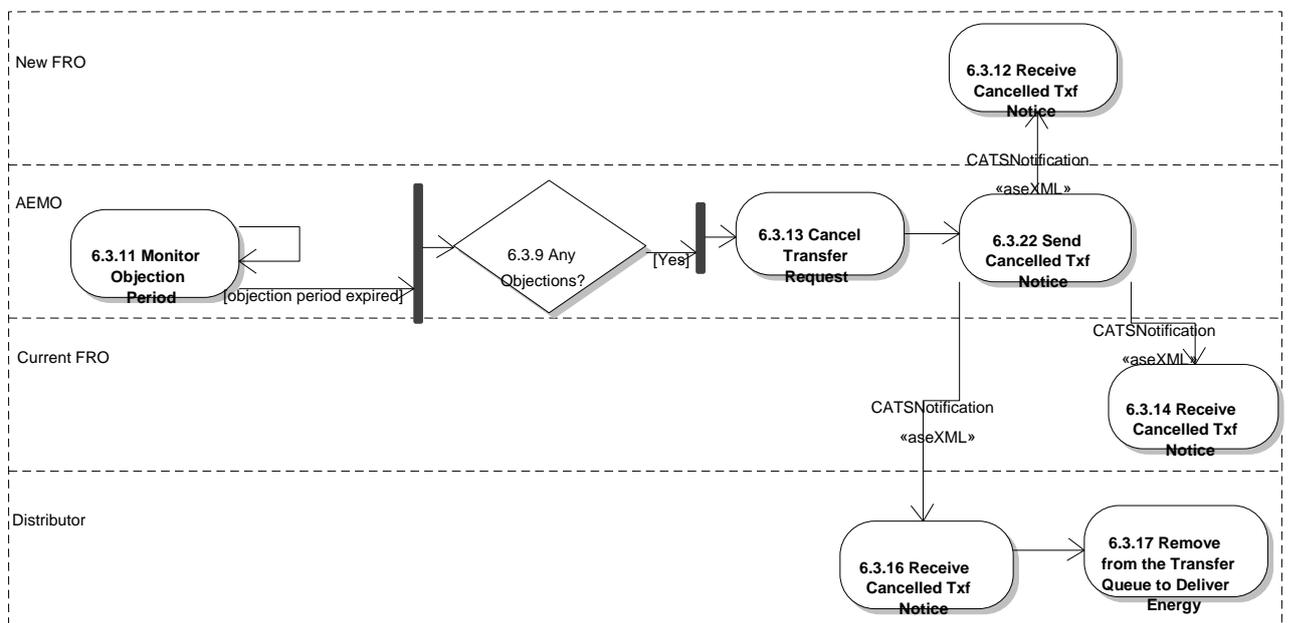
FIGURE 4-17. TRANSFER CANCELLATION DUE TO EXPIRED OBJECTION ACTIVITY DIAGRAM

The following sequence diagram translates the process flow above into aseXML transactions exchange.
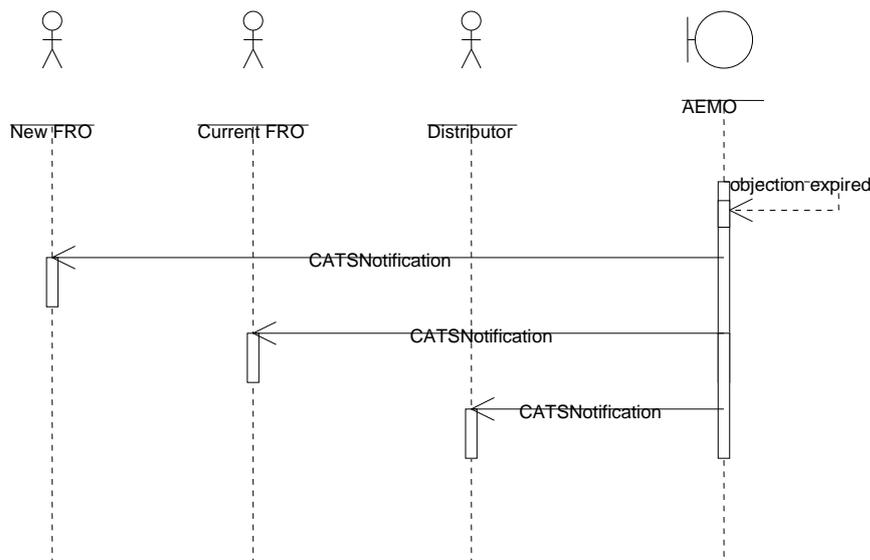
FIGURE 4-18. EXPIRED OBJECTION HANDLING SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSNotification	Transfer Cancellation or Transfer Termination Notice	AEMO	New FRO	6.3.22 -> 6.3.12
2	CATSNotification	Transfer Cancellation or Transfer Termination Notice	AEMO	Current FRO	6.3.22 -> 6.3.14
3	CATSNotification	Transfer Cancellation or Transfer Termination Notice	AEMO	Distributor	6.3.22 -> 6.3.16

4.1.10.1   Transfer Cancellation Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	196 TRANSFER CANCELLATION (TO NEW FRO) 197 TRANSFER CANCELLATION (TO CURRENT FRO) 198 TRANSFER CANCELLATION (TO DISTRIBUTOR) 222 TRANSFER TERMINATION NOTICE (TO NEW FRO) 223 TRANSFER TERMINATION NOTICE (TO CURRENT FRO) 224 TRANSFER TERMINATION NOTICE (TO DISTRIBUTOR)
Trigger	Transfer terminations due to internal timer processing at AEMO.
Pre-conditions	Objection is still present and 20 business days passed after Objection has been submitted.
Post-conditions	All Organisations specified in the Role for the Change Request are notified on the Transfer Cancellation.
Transaction acknowledgment specific event codes	3040

This transaction is used to indicate that the Transfer (Change) Request is cancelled due to the objection expiring, it is based on aseXML CATSNotification.

The following data elements are to be supplied with the Transfer Cancellation transaction:

TRANSACTION:	CATSNOTIFICATION	
Received From:	AEMO	
Sent To:	New FRO (196, 222) Current FRO (197, 223) Distributor (198, 224)	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
Role	M	The role assigned to the recipient
RoleStatus	M	"N" for a new role, "C" for a current role
Participant	M	Contains the initiator of the Change Request when notification is sent to New FRO and Distributor, and

TRANSACTION:	CATSNOTIFICATION
Received From:	AEMO
Sent To:	New FRO (196, 222) Current FRO (197, 223) Distributor (198, 224)

Data Element	Mandatory / Optional / Not Required	Usage
		xsi:nil="true" for the Current FRO.
RequestID	M	The unique ID assigned by AEMO to the Change Request
ChangeStatusCode	M	The current status of the Change Request
ChangeReasonCode	M	From change request
ProposedDate	M	From change request
NMI	M	From change request
checksum	M	An attribute of NMI

4.1.11   Delivering Problem Notice

The Problem Notice described in this section is responsible for conveying change information to the Market Participant (New FRO) who initiated the Change Request. The sender of the Problem Notice may include whatever text they like in the Event associated with the notice and AEMO will pass the Event unaltered to the New FRO.

There are two triggers that result in a Problem Notice being initiated. They are

1. the Current FRO or Distributor initiating a Problem Notice (CATSChangeAlert); or

2. or as a result of receiving a NegativeAcknowledgment (NAK) to a CATSNotification transaction, containing specific event codes, from either the Current FRO or Distributor, AEMO will generate a Problems Notice (CATSChangeAlert) to the New FRO.

    Only NAK's that contains Event Codes that are listed in appendix C in the CATS category range or Event Codes, 3200, 3202, 202 or –1 will result in the generation of a Problem Notice. The reason AEMO issues a Problem Notice on receipt of a NAK generated against a CATSNotification is it is the only mechanism available to a Current FRO and Distributor such that it can provide feedback about a problem to the New FRO

without knowing the identity of the New FRO. Confidentiality rules that apply in the market prevent AEMO from identifying the New FRO to the Current FRO.

It should also be noted that the existence of a Problem Notice does not impact, in any way, the CATS processing Procedures associated with a transfer. It is up to the New FRO to evaluate the impact of the information provided in the Problem Notice and takes whatever steps are appropriate. These steps can range from withdrawing the transfer to ignoring the Problem Notice.
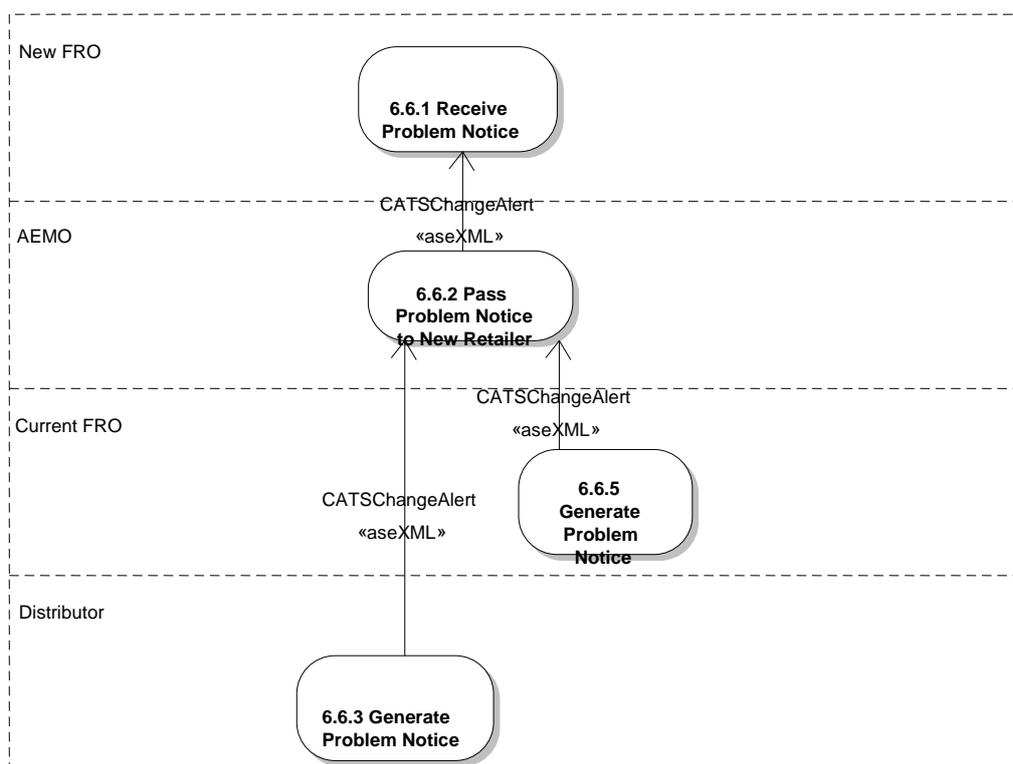
FIGURE 4-19. DELIVERING PROBLEM NOTICE ACTIVITY DIAGRAM

The sequence diagram below represents a Problem Notice delivery scenario. The Problem Notice is realised with the CATSChangeAlert aseXML transaction.
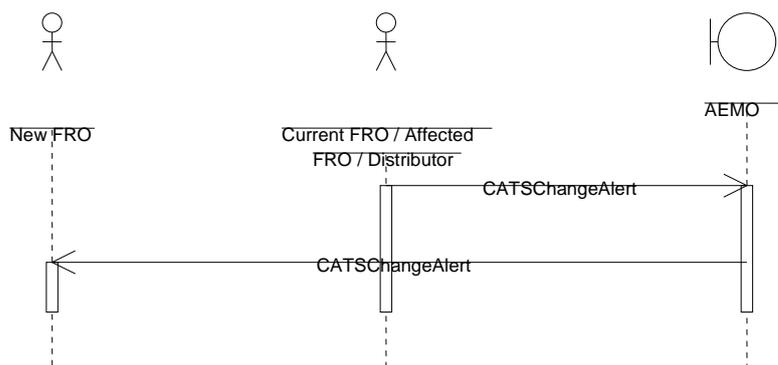
FIGURE 4-20. DELIVERING PROBLEM NOTICE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSChange Alert	Problem Notice	Current FRO or Distributor	AEMO	6.6.3 -> 6.6.2 6.6.5 -> 6.6.2
2	CATSChange Alert	Problem Notice	AEMO	New FRO	6.6.2 -> 6.6.1

4.1.11.1   Problem Notice Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	200 PROBLEM NOTICE (FROM DISTRIBUTOR) 202 PROBLEM NOTICE (FROM CURRENT FRO) 203 PROBLEM NOTICE (FROM AFFECTED FRO) 204 PROBLEM NOTICE (FROM AEMO)
Trigger	CATSChangeAlert transaction generated by Current FRO, Affected FRO, or Distributor.
Pre-conditions	A Change Request referred to in the Problem Notice is submitted and is not cancelled.
Post-conditions	Unaltered Problem Notice is passed to the New FRO.
Transaction acknowledgment specific event codes	3015, 3016, 3025, 3029, 3039 3006 can be sent to New FRO only if AEMO is problem notice originator, i.e. GTPWG transaction 204

The following data elements are to be supplied with the Problem Notice transaction:

TRANSACTION:	CATSCHANGEALERT	
Received From:	Distributor (200) Current FRO (202) Affected FRO (203) AEMO (204)	
Sent To:	AEMO (200,202,203) New FRO (204)	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
InitiatingRequestID	M	The ID assigned by AEMO to the Change Request
Role	M	The role of the participant initiating the transaction
RoleStatus	M	"N" for a new role; "C" for a current role
Participant	M	Problem notice originator
Event	O	Contains the message from the participant to the New FRO

4.1.12 Transfer Status Change Notice

Instigated by internal monitoring at AEMO a notice will be generated towards Organisations assigned to a Role on the request. The notice will be generated if the Change Request:

- has passed the end of its Objection Period, and has no active objections (an active objection is one that has not been withdrawn), or

- is related to a prospective move-in transfer.

As the activity diagram below presents a fragment of a larger process diagram, vertical synchronisation bars show only input that is relevant to the context of this section.
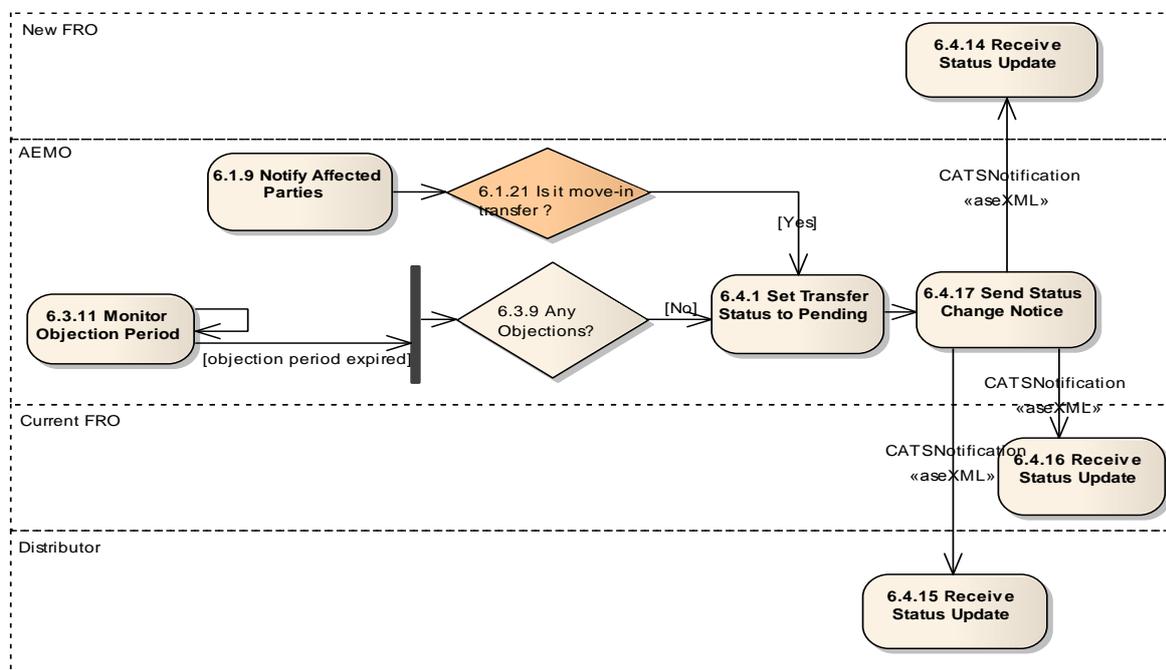
FIGURE 4-21. TRANSFER STATUS UPDATE ACTIVITY DIAGRAM

The state change notice is realised as a CATSNotification aseXML transaction. The following sequence diagram translates the process flow above into aseXML transaction exchange.
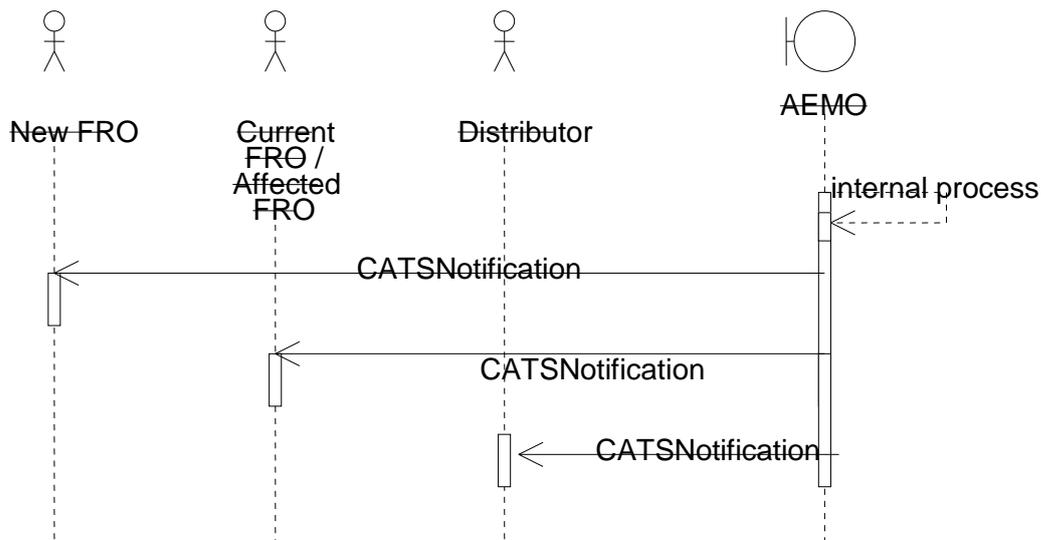
FIGURE 4-22. TRANSFER STATUS UPDATE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSNotification	Transfer Status Update	AEMO	New FRO	6.4.17 -> 6.4.14
2	CATSNotification	Transfer Status Update	AEMO	Current FRO or Affected FRO	6.4.17 -> 6.4.16
3	CATSNotification	Transfer Status Update	AEMO	Distributor	6.4.17 -> 6.4.15

4.1.12.1   Transfer Request State Change Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	232 TRANSFER STATUS UPDATE (TO NEW FRO)
	233 TRANSFER STATUS UPDATE (TO CURRENT FRO)
	234 TRANSFER STATUS UPDATE (TO DISTRIBUTOR)
	235 TRANSFER STATUS UPDATE (TO AFFECTED FRO)
Trigger	Internal processing at AEMO.
Pre-conditions	The Change Request has passed the end of its Objection Period and has no active objections against it.
Post-conditions	All Organisations are notified on Change Request state change.
Transaction acknowledgment specific event codes	3040

This transaction is realised with the aseXML CATSNotification. For the transaction details see 4.1.3.1.

4.1.13   Transfer Completion

An event generated internally at AEMO will notify all Organisations assigned to a Role for the Change Request that the Change Request processing has been completed.
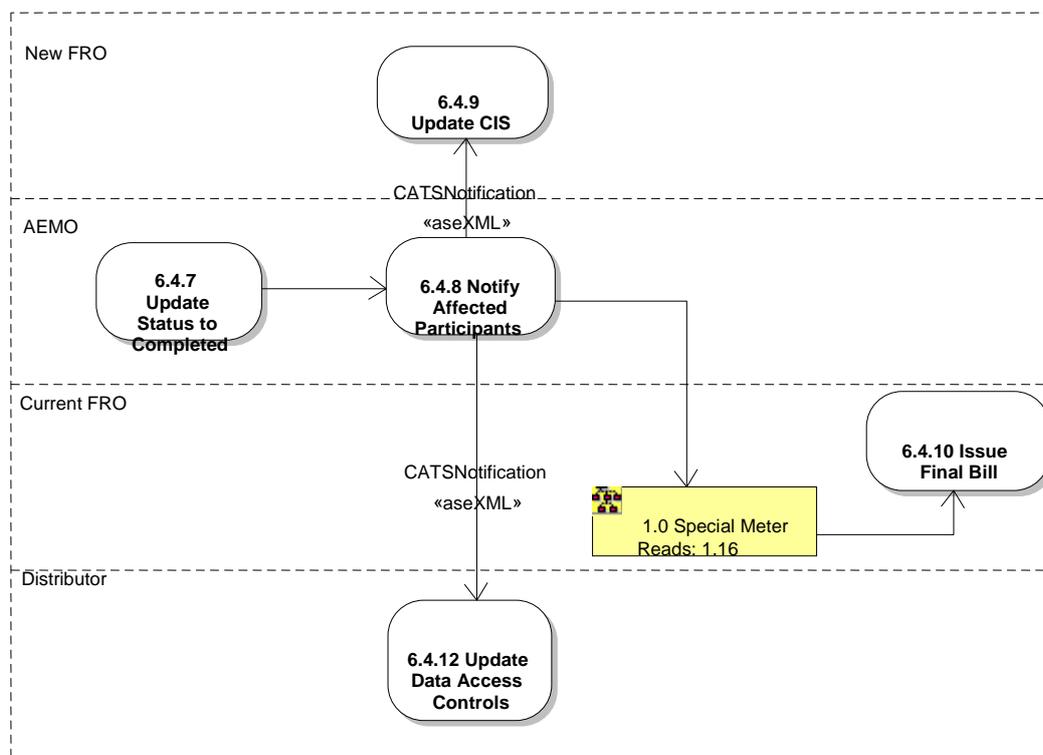
Figure 4-23. Generating Notice on Transfer Completion Activity Diagram

The process flow above is translated into the following sequence of aseXML transactions.
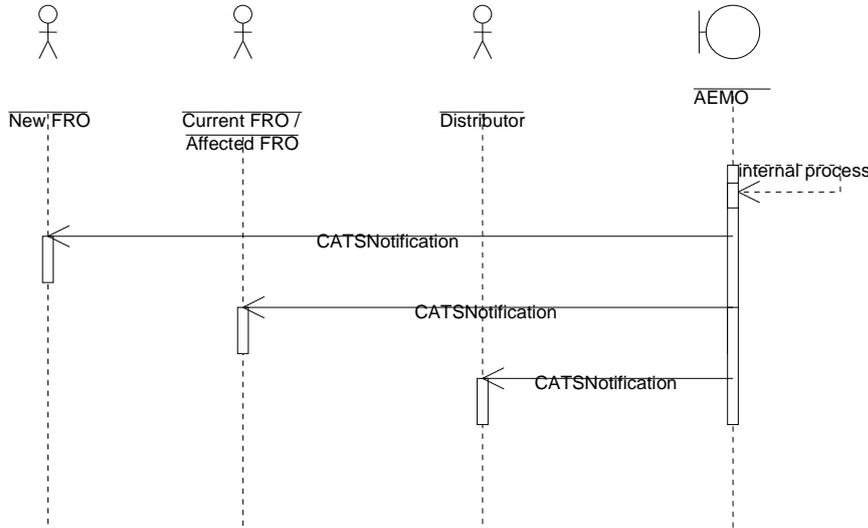
FIGURE 4-24. GENERATING TRANSFER COMPLETION NOTICE SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	CATSNotification	Notice of Transfer	AEMO	New FRO	6.4.8 -> 6.4.9
2	CATSNotification	Notice of Transfer	AEMO	Current FRO or Affected FRO	6.4.8 -> 6.4.10
3	CATSNotification	Notice of Transfer	AEMO	Distributor	6.4.8 -> 6.4.12

4.1.13.1   Notice   of   Transfer   Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	226 NOTICE OF TRANSFER (TO NEW FRO) 227 NOTICE OF TRANSFER (TO CURRENT FRO) 228 NOTICE OF TRANSFER (TO AFFECTED FRO) 229 NOTICE OF TRANSFER (TO DISTRIBUTOR)
Trigger	Internal processing at AEMO.
Pre-conditions	The Change Request state is changed to "Completed"
Post-conditions	All Organisations are notified on Change Request state change.
Transaction acknowledgment specific event codes	3040

This transaction is realised with the aseXML CATSNotification.

The following data elements are to be supplied with the Notice of Transfer transaction.

TRANSACTION:		CATSNOTIFICATION
Received From:		AEMO
Sent To:		New FRO (226) Current FRO (227) Affected FRO (228) Distributor (229)
Data Element	**Mandatory / Optional / Not Required**	**Usage**
Role	M	The role assigned to the recipient
RoleStatus	M	"N" for a new role, "C" for a current role
Participant	M	(i) contains the **initiator (New FRO) of the Change Request** when sent to Distributor or the Current FRO or the Affected FRO, or (ii) contains the Current FRO when sent to the New FRO,

TRANSACTION:		CATSNOTIFICATION	
Received From:		AEMO	
Sent To:		New FRO (226) Current FRO (227) Affected FRO (228) Distributor (229)	
Data Element	**Mandatory / Optional / Not Required**	**Usage**	
RequestID	M	The ID assigned by AEMO to the Change Request.	
ChangeStatusCode	M	The current status of the change request	
ChangeReasonCode	M	From change request	
ActualChangeDate	M	The actual date of transfer	
MeterReadTypeCode	NR		
ActualEndDate	O	From change request if present	
InitiatingRequestID	NR	Information already in RequestID	
NMI	M	From change request	
checksum	M	An attribute of NMI	

4.2 Meter Reads

4.2.1 Overview

This section describes the transactions that are exchanged among AEMO and Participants in order to deliver energy data. The table below maps aseXML transactions to transaction types referenced in the Transaction Definition Table.

Any meter data delivery is confirmed by a generic response transaction. This transaction makes the processing of meter reads consistent across different systems.

Meter data will be delivered as a CSV file encapsulated inside aseXML transaction. The validation of the CSV file is outside of the aseXML schema scope. When a transaction acknowledgment corroborates the delivery of a transaction and its conformance to aseXML schema, the response transaction will confirm, or otherwise, the contained CSV data format and relay success or failure details to the Meter Reads originator.

Important to note, that the optional elements in a CSV file need not carry values but must have, at very least, a comma separator as a placeholder in the CSV row. If a CSV row contains values considered optional for this transaction, the application should simply ignore these values.

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
MeterDataNotification	10	AEMO Customer Transfer Special Read Notification
	42	Energy Flow from a 2nd Tier Site for AEMO for a Special Read or Schedule Read
	52	Provision of Estimated Reading
	54	Provision of Substituted Reading
	247	Energy Flow Adjustment
	260	Provision of Energy Data
	262	Provision of Missing Energy Data
	263	Provision of Revised Energy Data
MeterDataMissingNotification	261	Non-provision of Energy Data
MeterDataResponse	10A	AEMO confirms the validity of the contained CSV data delivered with transaction 10. This transaction replaces the transaction 11 in the Transaction

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
		Definition Table.
	42A	Response to transaction 42
	52A	Response to transaction 52
	54A	Response to transaction 54
	247A	Response to transaction 247
	260A	Response to transaction 260
	262A	Response to transaction 262
	263A	Response to transaction 263

4.2.2   Delivering Energy Data

The Distributor delivers the Energy Data encapsulated in a CSV file to AEMO. At AEMO the data will be scrutinized and then following this process a response will be generated towards the Distributor. The response will inform the Distributor of how many entries have been accepted and details of any entries detected as containing errors.

A monitoring process at AEMO, run at scheduled intervals, will determine if expected meters have had actual energy reads sent from the Distributor. If an expected meter or meters don't have such reads AEMO will issue a missing data notification to the Distributor. The notification will contain a list of missing meters that the Distributor must provide the energy reads for. The reads are delivered using exactly the same mechanism as was described before.

The diagrams below cover two major scenarios in delivery of energy data:

- Normal and scheduled delivery, i.e. actual, estimated, substituted provision of meter readings, and

- Handling of missing energy data.
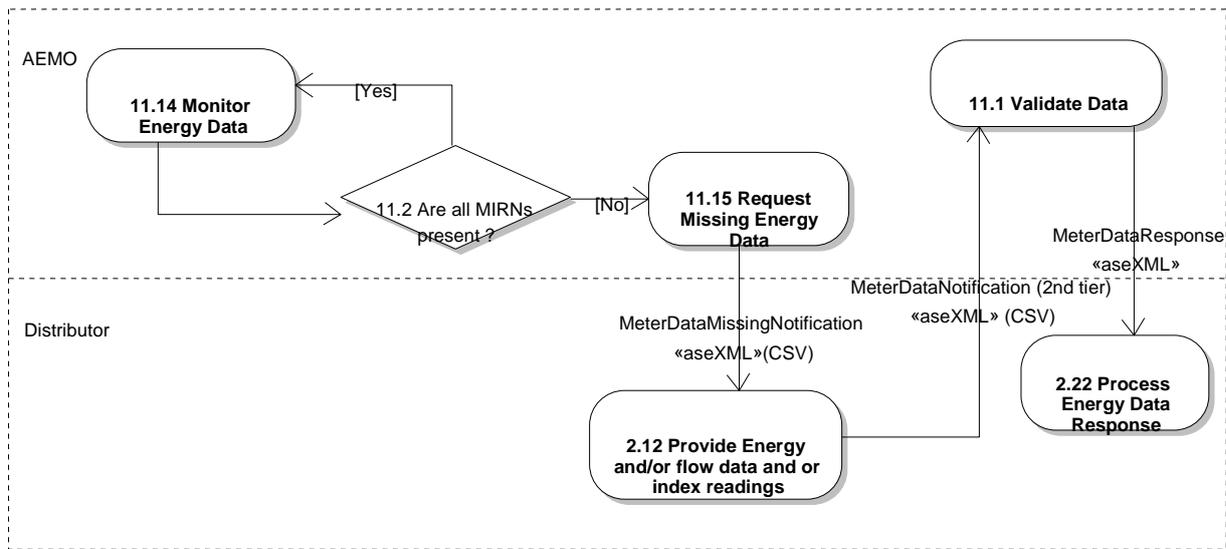
FIGURE 4-25. DELIVERING ENERGY DATA ACTIVITY DIAGRAM

The sequence diagram below represents aseXML transaction exchange that supports the two scenarios described earlier. The provision of energy data involves only two aseXML transactions, namely MeterDataNotification and MeterDataResponse.

The identified missing data will be requested via an additional transaction, i.e. MeterDataMissingNotification that then will be followed by MeterDataNotification and MeterDataResponse.
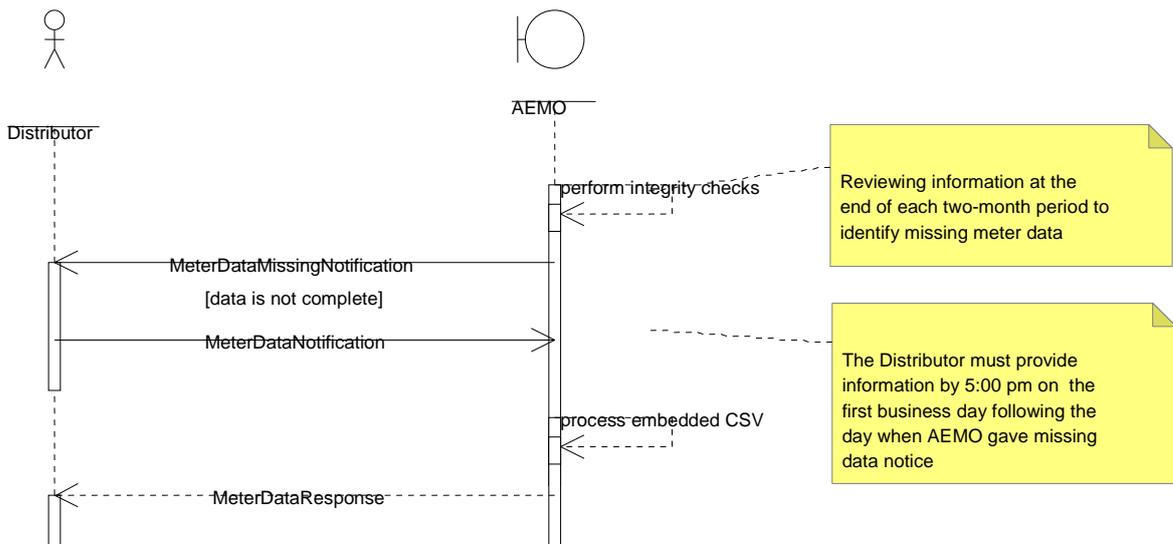
FIGURE 4-26. DELIVERING ENERGY DATA SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	MeterDataMissingNotification	Non-provision of Energy Data	AEMO	Distributor	11.15 -> 2.12
2	MeterDataNotification	AEMO Customer Transfer Special Read notification	Distributor	AEMO	2.12 -> 11.1
		Energy Flow from a 2nd tier Site for AEMO for a Special Read or Schedule Read			
		Provision of estimated reading			
		Provision of substituted reading			
		Energy Flow Adjustment for AEMO			
		Provision of Energy Data			
		Provision of Missing Energy Data			
		Provision of Revised Energy Data			
3	MeterDataResponse	Would replace the AEMO Transfer Special Read confirmation	AEMO	Distributor	11.1 -> 2.22

4.2.2.1   Missing Data Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	261 NON-PROVISION OF ENERGY DATA
Trigger	An internal process at AEMO will trigger this transaction. The process at regular intervals will check for presence of actual energy reads from every 2nd tier meter associated with the Distributor.
Pre-conditions	Meter data is missing.
Post-conditions	The Distributor is notified of missing energy data.
Transaction acknowledgment specific event codes	No errors are expected in response to this transaction. If an error is received the sending application should invoke its default error escalation procedures.

The Missing Data Notification is realised with MeterDataMissingNotification aseXML transaction. The transaction will carry an embedded CSV file with a list of meters that missing data.

The following data elements are to be supplied with the MeterDataNotification transaction.

TRANSACTION:		METERDATAMISSINGNOTIFICATION
Received From:		AEMO
Sent To:		Distributor
Data Element	**Mandatory / Optional / Not Required**	**Usage**
RecordCount	M	Specifies the number of records contained in the populated CSV element, excluding the record with column designators
CSVMissingMeterData/CSVData	M	Contains embedded data in CSV format. If RecordCount is set to 0, then the value of CSVData element must be set to **xsi:nil="true"**.

The following table specifies the format of a CSV file embedded within MeterDataMissingNotification transaction.

CSVMISSINGMETERDATA/CSVDATA		
Heading	Mandatory / Optional / Not Required	Comment
NMI	M	NMI for which energy data is missing
NMI_Checksum	M	NMI checksum
Last_Read_Date	O	The last read on which the meter reads have been supplied to AEMO prior to the missing consumed energy data. The DB is to supply all consumed energy data read since this date. If no date supplied the DB is to supply energy data read since commencement of FRC.

4.2.2.2   Energy Data Delivery Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	10 AEMO CUSTOMER TRANSFER SPECIAL READ NOTIFICATION
	42 ENERGY FLOW FROM A 2ND TIER SITE FOR AEMO FOR A SPECIAL READ OR SCHEDULE READ
	48 ENERGY HISTORY RESPONSE
	52 PROVISION OF ESTIMATED READING
	54 PROVISION OF SUBSTITUTED READING
	247 ENERGY FLOW ADJUSTMENT FOR AEMO
	260 PROVISION OF ENERGY DATA
	262 PROVISION OF MISSING ENERGY DATA
	263 PROVISION OF REVISED ENERGY DATA
Trigger	Normally, a batch process will instigate these transactions. However, transaction 262 will be triggered by receipt of missing data notification, and transaction 247 will be instigated by changes to the energy values already provided to AEMO for a 2nd tier Supply Point.
Pre-conditions	Access to meter was successful and registration notice was lodged.
Post-conditions	Energy data is delivered to AEMO.
Transaction acknowledgment	3213

specific event codes	

This transaction will have embedded a CSV file carrying special meter reads data. As this CSV format will be shared by many transactions, many elements in the CSV file format are optional or labelled as "not required" to this transaction.

Important to note, that the optional elements in a CSV file need not to carry values but must have, at the very least, a comma separator as a placeholder in the CSV row. If a CSV row contains values considered optional or as not required for this transaction, AEMO will simply ignore these values.

If invalid meter data is supplied, the records can only be fixed by re-sending the correct data, the latest data will replace older data.

The following data elements are to be supplied with the MeterDataNotification transaction.

TRANSACTION:	METERDATANOTIFICATION	
Received From:	Distributor	
Sent To:	AEMO	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
RecordCount	M	Specifies the number of records contained in the populated CSV element, excluding the record with column designators
CSVConsumptionData	M	Contains embedded data in CSV format. If RecordCount is set to 0, then the value of CSVData element must be set to **xsi:nil="true"**

The format of CSV data is defined in the table below. The names of attributes shown in the Heading column must be used as the column designators in the first line of a CSV file. These headings will allow for column interpretation. Also, third-party products like Microsoft Excel can utilise the column designators for more useful processing of subsequent data lines.

CSVCONSUMPTIONDATA		
Heading	Mandatory / Optional	Comment
NMI	M	
NMI_Checksum	M	

CSVCONSUMPTIONDATA		
Heading	Mandatory / Optional	Comment
RB_Reference_Number	NR	Identifies that this record fulfils a Special Read Request
Reason_for_ Read	NR	
Gas_Meter_Number	NR	
Gas_Meter_Units	NR	
Previous_Index_Value	NR	
Previous_Read_Date	O	Required unless this is the first read for a meter. If not provided the Consumed Energy will be zero.
Current_Index_Value	NR	
Current_Read_Date	M	
Volume_Flow	NR	Volume Flow is measured in cubic metres
Average_Heating_Value	NR	
Pressure_Correction_Factor	NR	
Consumed_Energy	M	Consumed Energy is measured in Megajoules
Type_of_Read	M	
Estimation_Substitution_Type	NR	
Estimation_Substitution_Reason_ Code	NR	
Meter_Status	NR	
Next_Scheduled_Read_Date	NR	
Hi_Low_Failure	NR	
Meter_Capacity_Failure	NR	
Adjustment_Reason_Code	NR	
Energy_Calculation_Date_Stamp	M	
Energy_Calculation_Time_Stamp	M	

4.2.2.3   Energy Data Delivery Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	**10A** AEMO CONFIRMS THE VALIDITY OF THE CONTAINED CSV DATA DELIVERED WITH TRANSACTION 10. THIS TRANSACTION REPLACES THE TRANSACTION 11 IN THE TRANSACTION DEFINITION TABLE. **42A** RESPONSE TO TRANSACTION 42 **52A** RESPONSE TO TRANSACTION 52 **54A** RESPONSE TO TRANSACTION 54 **247A** RESPONSE TO TRANSACTION 247 **260A** RESPONSE TO TRANSACTION 260 **262A** RESPONSE TO TRANSACTION 262 **263A** RESPONSE TO TRANSACTION 263
Trigger	Completion of processing of the embedded CSV file
Pre-conditions	A MeterDataNotification transaction has been received.
Post-conditions	The Distributor is notified upon successful (or otherwise) processing of embedded CSV file.
Transaction acknowledgment specific event codes	This response transaction may contain events indicating the CSV processing failures. The following event codes are specific to this transaction: 3201, 3203-3206, 3208, 3214-3216

This transaction makes it possible to keep the Distributor informed on results of the CSV file validation. As the CSV file processing may take some time to complete, the transaction acknowledgment would not be appropriate to indicate the completion. Therefore, MeterDataResponse is used for notification. Also, it may carry information about detected failures inside Events.

The following data elements are to be supplied with the MeterDataResponse transaction.

TRANSACTION:	**METERDATARESPONSE**	
Received From:	AEMO	
Sent To:	Distributor	
Data Element	**Mandatory / Optional / Not Required**	**Usage**
ActivityID	M	Identify the submission of meter data via a MeterDataNotification transaction

AcceptedCount	M	The number of meter reads accepted
LoadDate	M	The date when data was loaded
Event	O	Must be supplied if problems have been detected whilst processing the embedded CSV file. There should be one Event per error detected.

4.3 Data Synchronisation

4.3.1 Overview

This section describes the transactions that are exchanged among AEMO and Participants in order to synchronise retailer and history data. The table below maps aseXML transactions to transaction types referenced in the Transaction Definition Table.

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
MeterDataHistoryRequest	47	Request for History
MeterDataNotification	48	Energy History Response
NMIStandingDataUpdateNotification	264	Bi-annual Refresh of Base Load and Temperature Sensitivity Factor
NMIStandingDataUpdateResponse	264A	Response to Bi-annual Refresh of Base Load and Temperature Sensitivity Factor
MeteredSupplyPointsCountUpdate	338	Number of Metered Supply Points

4.3.2 Request for History

The following request will allow AEMO to retrieve historical energy flow data for the specified NMI.
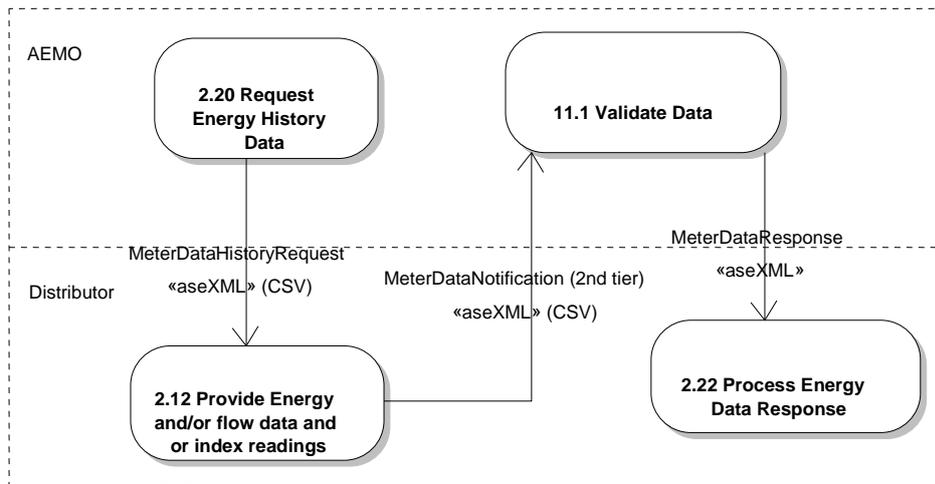
FIGURE 4-27. DELIVERING ENERGY HISTORY ACTIVITY DIAGRAM

The following sequence diagram translates the transaction exchange presented in the activity diagram above.
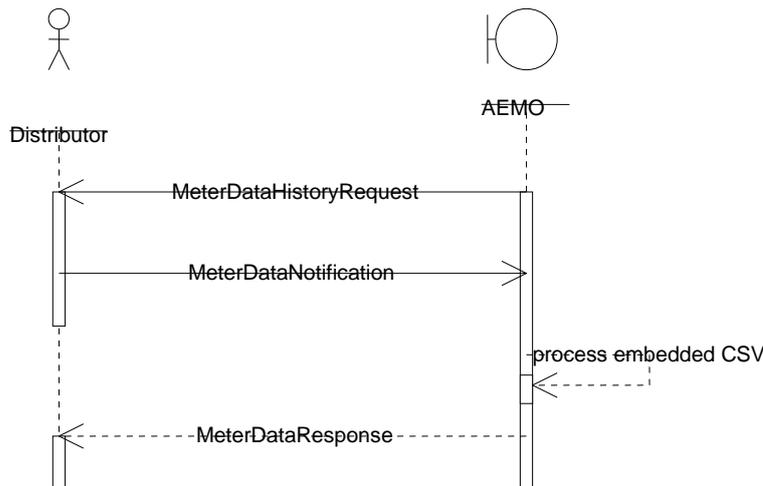
FIGURE 4-28. ENERGY HISTORY RETRIEVAL SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	MeterDataHistoryRequest	Request for History	AEMO	Distributor	2.20 -> 2.12
2	MeterDataNotification	Energy History Response	Distributor	AEMO	2.12 -> 11.1
3	MeterDataResponse	Response to Energy Data	AEMO	Distributor	11.1 -> 2.22

4.3.2.1   Meter Data History Request Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	47 REQUEST FOR HISTORY
Trigger	AEMO requests energy history
Pre-conditions	Requirement to obtain energy history by AEMO
Post-conditions	Distributor has received energy history request from AEMO
Transaction acknowledgment specific event codes	No errors are expected in response to this transaction. If an error is received the sending application should invoke its default error escalation procedures.

AEMO uses the MeterDataHistoryRequest transaction to request customer energy history from a Distributor. This transaction requests a subset of history elements and expects a response to be delivered with MeterDataNotification transaction.

The following table specifies the data elements to be included with MeterDataHistoryRequest transaction.

TRANSACTION:		METERDATAHISTORYREQUEST
Received From:		AEMO
Sent To:		Distributor
Data Element	Mandatory / Optional / Not Required	Usage
RecordCount	M	Specifies the number of records contained in the populated CSV element, excluding the record with column designators.
CSVHistoryRequestData /CSVData	M	If RecordCount is set to 0, then the value of CSVData element must be set to xsi:nil="true"

The format of CSV file encapsulated inside MeterDataHistoryRequest transaction is specified in the following table.

CSVHISTORYREQUESTDATA/CSVDATA		
Heading	Mandatory / Optional / Not Required	Comment
NMI	M	NMI for which history is requested
NMI_Checksum	M	NMI NMI_checksum
History_Commencement_Date	M	
History_End_Date	M	

4.3.2.2   Meter Data History Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	48 ENERGY HISTORY RESPONSE
Trigger	Receipt of an energy history request from AEMO.
Pre-conditions	None.
Post-conditions	AEMO has obtained historic data.
Transaction acknowledgment specific event codes	None

The Meter Data Gas History Response is realised in terms of the MeterDataNotification aseXML transaction. It is used by the Distributor to deliver energy history data to AEMO. For MeterDataNotification transaction details see section 4.2.2.2.

For consistency with other energy data transactions, upon the completion of the embedded CSV files processing, the energy history response transaction will be confirmed with MeterDataResponse, see section 4.2.2 for details. The MeterDataResponse transaction is described in section 4.2.2.3.

4.3.3   Ad-hoc Refresh of Base Load and Temperature Sensitivity Factor

The transaction is used to refresh Base Load (BL) and Temperature Sensitivity Factor (TSF) data for basic meter sites stored by AEMO. Distributor will supply the ad-hoc data as a CSV file encapsulated inside a NMIStandingDataUpdateNotification aseXML transaction. Bi-annual refresh and response will be delivered by means other than aseXML.
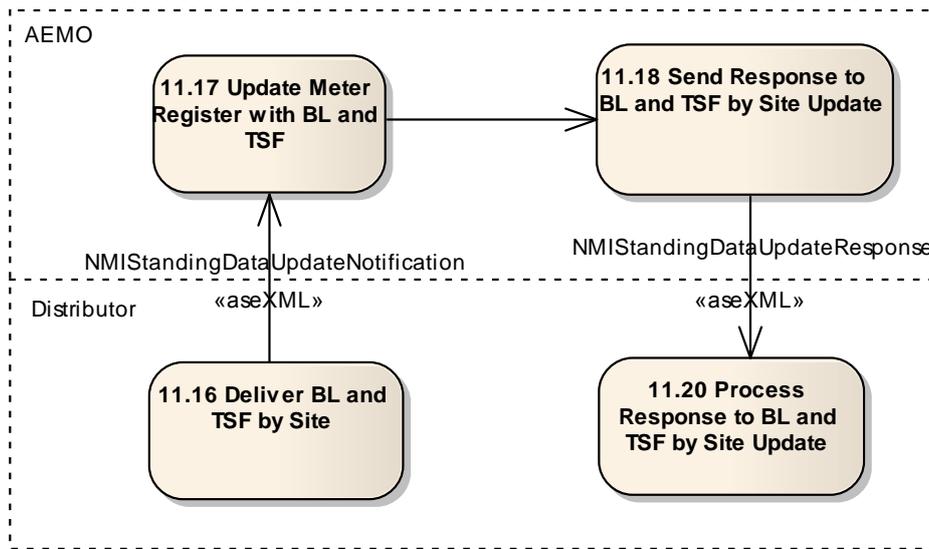
FIGURE 4-29. BASE LOAD AND TEMPERATURE SENSITIVITY FACTOR REFRESH ACTIVITY DIAGRAM

The process flow above translates into the following sequence diagram.
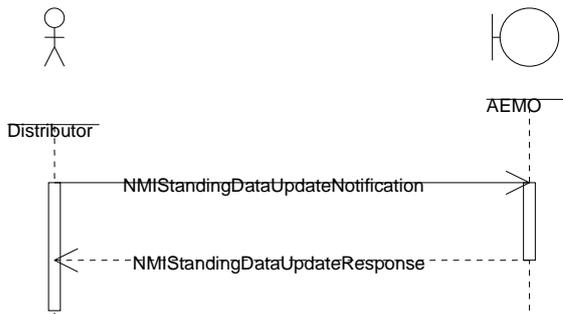
FIGURE 4-30. AD-HOC BASE LOAD AND TEMPERATURE SENSITIVITY FACTOR REFRESH SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	NMIStandingDataUpdateNotification	Ad-hoc Refresh of BL and TSF	Distributor	AEMO	11.16 -> 11.17
2	NMIStandingDataUpdateResponse	Ad-hoc refresh of BL & TSF Response	AEMO	Distributor	11.18 -> 11.20

4.3.3.1   Ad-hoc Base Load and Temperature Sensitivity Factor Refresh Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	264 BI-ANNUAL OR AD HOC REFRESH OF BL & TSF NOTE, BI-ANNUAL REFRESH OF BL & TSF CAN BE DELIVERED BY MEANS OTHER THAN ASEXML, WHEREAS AD HOC REFRESH IS VIA ASEXML ONLY.
Trigger	Batch or upon request.
Pre-conditions	None.
Post-conditions	AEMO has received the Base Load and Temperature Sensitivity Factor updates.
Transaction acknowledgment specific event codes	3213, 3215, 3216

This transaction will be generated either automatically twice a year or on ad hoc basis. The NMIStandingDataUpdateNotification aseXML transaction is used to deliver BL and TSF update.

The following data elements are to be supplied with the NMIStandingDataUpdateNotification transaction.

TRANSACTION:		NMISTANDINGDATAUPDATENOTIFICATION
Received From:		Distributor
Sent To:		AEMO
Data Element	Mandatory / Optional / Not Required	Usage
RecordCount	M	Specifies the number of records contained in the populated CSV element, excluding the record with column designators
CSVNMIStandingData /CSVData	M	Contains embedded data in CSV format. If RecordCount is set to 0, then the value of CSVData element must be set to xsi:nil="true".

The CSVNMIStandingData data elements are shown in the following table.

CSVNMISTANDINGDATA/CSVDATA		
Heading	Mandatory / Optional / Not Required	Comment
NMI	M	NMI
NMI_Checksum	M	NMI checksum
Base_Load	M	Base Load
Temperature_Sensitivity_Factor	M	Temperature Sensitivity Factor
Site_Post_Code	M	Site Post Code
NetworkID	O	For NetworkID, required if the Supply Point MIRN sources gas from a distribution network not connected to Transmission System operated under the NGR.
Effective_Batch_Refresh_Date	M	

4.3.3.2 Ad-hoc Base Load and Temperature Sensitivity Factor Refresh Response Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	264A BI-ANNUAL AND AD-HOC REFRESH OF BL & TSF RESPONSE NOTE, A RESPONSE TO BI-ANNUAL REFRESH OF BL & TSF CAN BE DELIVERED BY MEANS OTHER THAN ASEXML, WHEREAS RESPONSE TO AD HOC REFRESH IS VIA ASEXML ONLY.
Trigger	Reception of Ad-hoc BL and TSF Refresh from the Distributor.
Pre-conditions	Ad-hoc BL and TSF update has been received.
Post-conditions	Distributor is notified upon the completion of processing at AEMO.
Transaction acknowledgment specific event codes	This response transaction may contain events indicating the CSV processing failures. The following event codes are specific to this transaction: 3211, 3214

This transaction is sent in response to batch of data containing ad-hoc update of BL and TSF by site. The response has the same format as MeterDataResponse transaction. If errors have been detected whilst processing the CSV data, events explaining identified errors will be embedded into the response.

The following data elements are to be supplied with the NMIStandingDataUpdateResponse transaction.

TRANSACTION:		NMISTANDINGDATAUPDATERESPONSE
Received From:		AEMO
Sent To:		Distributor
Data Element	Mandatory / Optional / Not Required	Usage
ActivityID	M	Identify the submission of meter data via a NMIStandingDataUpdateNotification transaction
AcceptedCount	M	The number of BL/TSF updates accepted
LoadDate	M	The date when data was loaded
Event	O	Must be supplied if problems have been detected whilst processing the embedded CSV file. There should be one Event per error detected.

4.3.4   Metered Supply Points Count Update

This transaction supports AEMO cost allocation. It is an end of calendar month transaction and will carry the count of metered supply points for the reporting distributor.
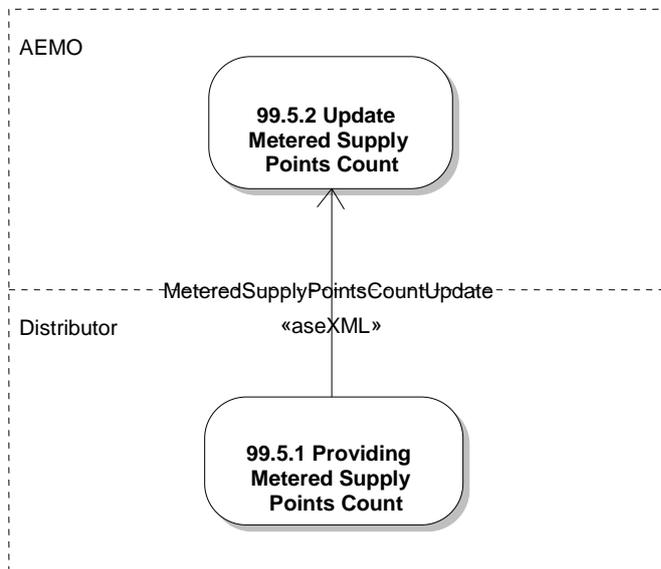
FIGURE 4-31. PROVIDING METERED SUPPLY POINTS COUNT ACTIVITY DIAGRAM

The activity diagram for provision of metered supply points count is translated into the following sequence diagram.
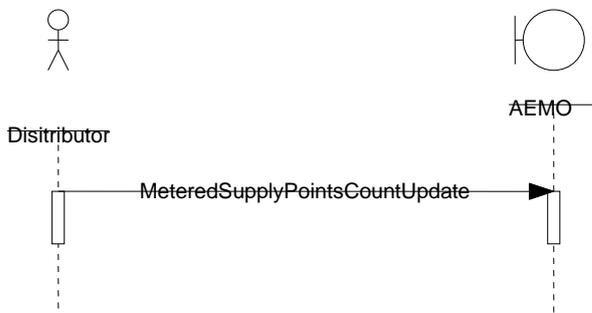
FIGURE 4-32. PROVIDING METERED SUPPLY POINTS COUNT SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	MeteredSupplyPointsCountUpdate	Number of Metered Supply Points	Distributor	AEMO	99.5.1 -> 99.5.2

4.3.4.1   Metered Supply Points Count Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	338 NUMBER OF METERED SUPPLY POINTS
Trigger	Batch process
Pre-conditions	The transaction is to be generated by 5:00pm on the fifth business day after the end of a calendar month.
Post-conditions	AEMO has updated the number of metered supply points for the reported Distributor.
Transaction acknowledgment specific event codes	None

The following data elements are to be supplied with this transaction:

TRANSACTION:		METEREDSUPPLYPOINTSCOUNTUPDATE
Received From:		Distributor
Sent To:		AEMO
Data Element	Mandatory / Optional / Not Required	Usage
CountDate	M	The last day in a calendar month, e.g. 31st of May for the Month of May.
Count	M	

4.4   Basic Meter Installation and MIRN Status Update

4.4.1   Overview

This section describes the transactions that are exchanged among AEMO and Participants in order to deliver meter installation and MIRN Status Update details. The table below maps aseXML transactions to the transaction types referenced in the Transaction Definition Table.

ASEXML TRANSACTION	TRANSACTION DEFINITION TABLE REF	TRANSACTION TYPE FROM TRANSACTION DEFINITION TABLE
GasMeterNotification/Meter Fix	94	AEMO Meter Fix Notification
GasMeterNotification/MIRN StatusUpdate	158	MIRN Status Update Notification

4.4.2   AEMO Meter Fix Notification

This transaction allows the Distributor to pass meter fix details to AEMO following the completion of work by a contract fitter.
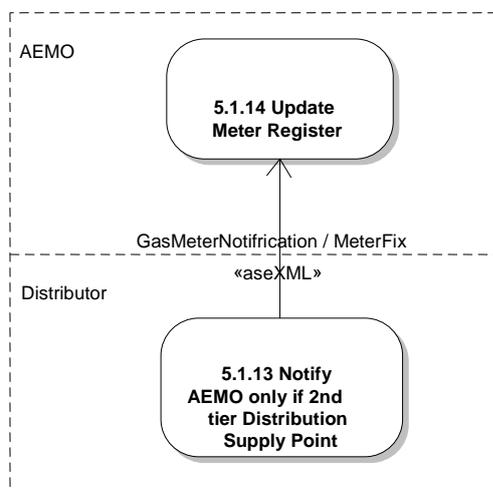
FIGURE 4-33. BASIC METER FIX NOTIFICATION ACTIVITY DIAGRAM

The following sequence diagram translates the process flow above into a sequence of aseXML transactions.
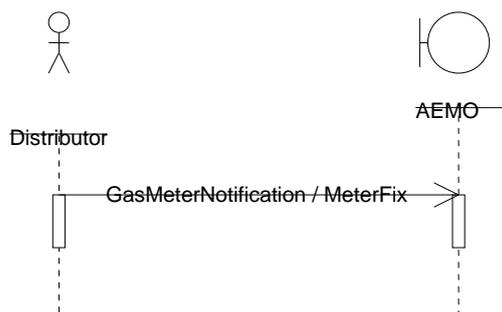
FIGURE 4-34. BASIC METER FIX NOTIFICATION SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	GasMeterNotification/ MeterFix	AEMO Meter Fix Notification	Distributor	AEMO	5.13 -> 5.14

4.4.2.1   Meter Fix Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	94 AEMO METER FIX NOTIFICATION
Trigger	Distributor receives details from the contract fitter and the Supply Point is in the 2nd tier.
Pre-conditions	None.
Post-conditions	AEMO received meter fix notification.
Transaction acknowledgment specific event codes	3404, 3408, 3409, 3410, 3411, 3413, 3415, 3416

This transaction reports on a meter fix or installation. It is implemented with GasMeterNotification/MeterFix aseXML transaction. For DTS supply points, this transaction is only sent to AEMO when a site is a new second tier site and the meter is fixed or fixed and plugged. This transaction is used by AEMO to establish a record in its Meter Register and to assign the FRO for that supply point.

Using the Meter Identification Registration Number (MIRN), AEMO will validate the GasMeterNotification/MeterFix and if the Current FRO is the same as the Declared Host Retailer for that distribution network then AEMO will nack the transaction (event code 3415).

Using the NetworkId AEMO will validate the GasMeterNotification/MeterFix and if the NetworkId is not a valid NetworkId then AEMO will nack the transaction (event code 3416). A valid NetworkID is either "00" "<Blank>" or a NetworkId number assigned by AEMO.

The following data elements are to be supplied with the GasMeterNotification/MeterFix transaction.

TRANSACTION:		GASMETERNOTIFICATION/METERFIX
Received From:		Distributor
Sent To:		AEMO
Data Element	Mandatory / Optional / Not Required	Usage
NMI	M	
checksum	M	An attribute of NMI
AustralianPostCode	M	
BaseLoad	M	
TemperatureSensitivityFactor	M	
NetworkID	O	For NetworkID, required if the distribution pipeline is not part of a declared distribution system operated under the NGR.
MIRNStatus	M	Can be either "Commissioned" or "Decommissioned"
Party	M	Current FRO
Role	M	"CFRO" is the only value to be accepted with this transaction.
DateServiceOrderCompleted	M	

4.4.3   AEMO MIRN Status Update Notification

This transaction allows the Distributor to pass MIRN status update details to AEMO following:

- the removal of the meter (MIRNStatus = "Decommissioned")

- the plugging / turn off of the meter (MIRNStatus = "Decommissioned")

- the removal of the meter upstand (MIRNStatus = "Deregistered"), and

- unplugging / turn on of the meter (MIRNStatus = "Commissioned")

Note, with relation to plugging and unplugging, this transaction needs to be supplied only if the plugging and unplugging did not occur on the same day.

For the avoidance of doubt, these transactions are not to be sent to AEMO if the meter is an Interval metered site (eg: A data logger device is connected to the meter) otherwise AEMO will nack the transaction pass event code "3414" (MIRN not a basic meter) back to the Distributor.
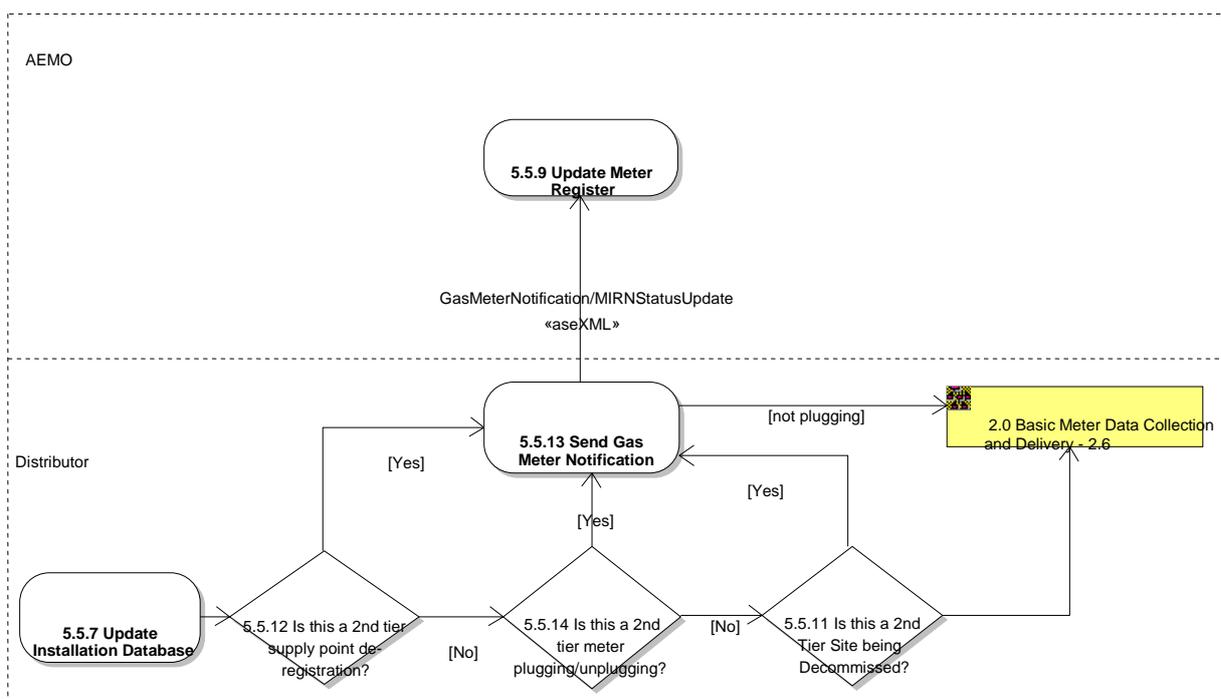
FIGURE 4-35. MIRN STATUS UPDATE NOTIFICATION ACTIVITY DIAGRAM

The following sequence diagram translates the above process flow into a sequence of aseXML transactions.
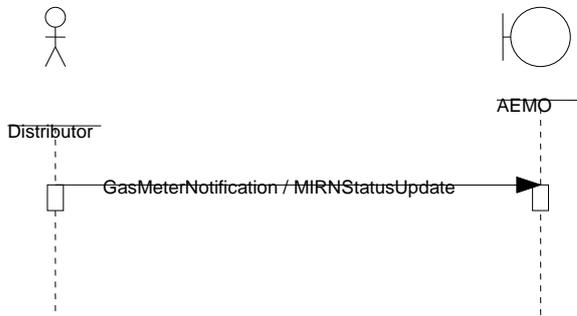
FIGURE 4-36. MIRN STATUS UPDATE NOTIFICATION SEQUENCE DIAGRAM

ID	ASEXML TXN	TRANSACTION DEFINITION TABLE	FROM OBJECT	TO OBJECT	PROCESS FLOW
1	GasMeterNotification/MIRNStatusUpdate	AEMO MIRN Status Update Notification	Distributor	AEMO	5.5.11 -> 5.5.9 5.5.12 -> 5.5.9 5.5.14 -> 5.5.9

4.4.3.1   MIRN Status Update Notification Transaction

TRANSACTION DEFINITION TABLE CROSS-REFERENCE	158 MIRN STATUS UPDATE NOTIFICATION
Trigger	Distributor receives details from the contract fitter (including unplugging of the meter) and the Supply Point is in the 2nd tier.
Pre-conditions	None.
Post-conditions	AEMO received MIRN Status Update notification.
Transaction acknowledgment specific event codes	3410, 3411, 3414

This transaction reports on a meter removal/unplugging/plugging and/or upstand removal. The removal of an upstand implies the removal of the attached meter too.

The following data elements are to be supplied with the GasMeterNotification/MIRNStatusUpdate transaction.

TRANSACTION:		GASMETERNOTIFICATION/MIRNSTATUSUPDATE
Received From:		Distributor
Sent To:		AEMO
Data Element	Mandatory / Optional / Not Required	Usage
NMI	M	
checksum	M	An attribute of NMI
MIRNStatus	M	"Commissioned", "Decomissioned" and "Deregistered" are the only values to be accepted with this transaction.
DateServiceOrderCompleted	M	The date when the meter and/or the upstand has been removed, or meter is plugged or unplugged.

5. Example Scenarios

5.1 Overview

Examples of aseXML transactions shown in the following sections will be carried inside ebXML envelopes. ebXML will assume the responsibility for the reliable delivery of messages with contained as payload aseXML transaction(s) or transaction acknowledgment(s). For detailed descriptions of the protocol and transport refer to Ref.[9].

5.2 Initiate CATS Change Request

This scenario shows the transaction flows between AEMO and participant organisations for the initiation of a "standard" CATS Change Request that passes validation and is recorded within CATS.

The scenario begins with the submission of a CATSChangeRequest transaction by a prospective retailer (Origin) and ends with AEMO responding to the CATSChangeRequest with a CATSChangeResponse that allocates a Change Request ID to the request.

In the course of the scenario, the current retailer (Pulse) is notified of the Change Request, as is the Distributor (TXU). The Distributor is also sent a CATSDataRequest transaction requesting the standing data for the Supply Point.
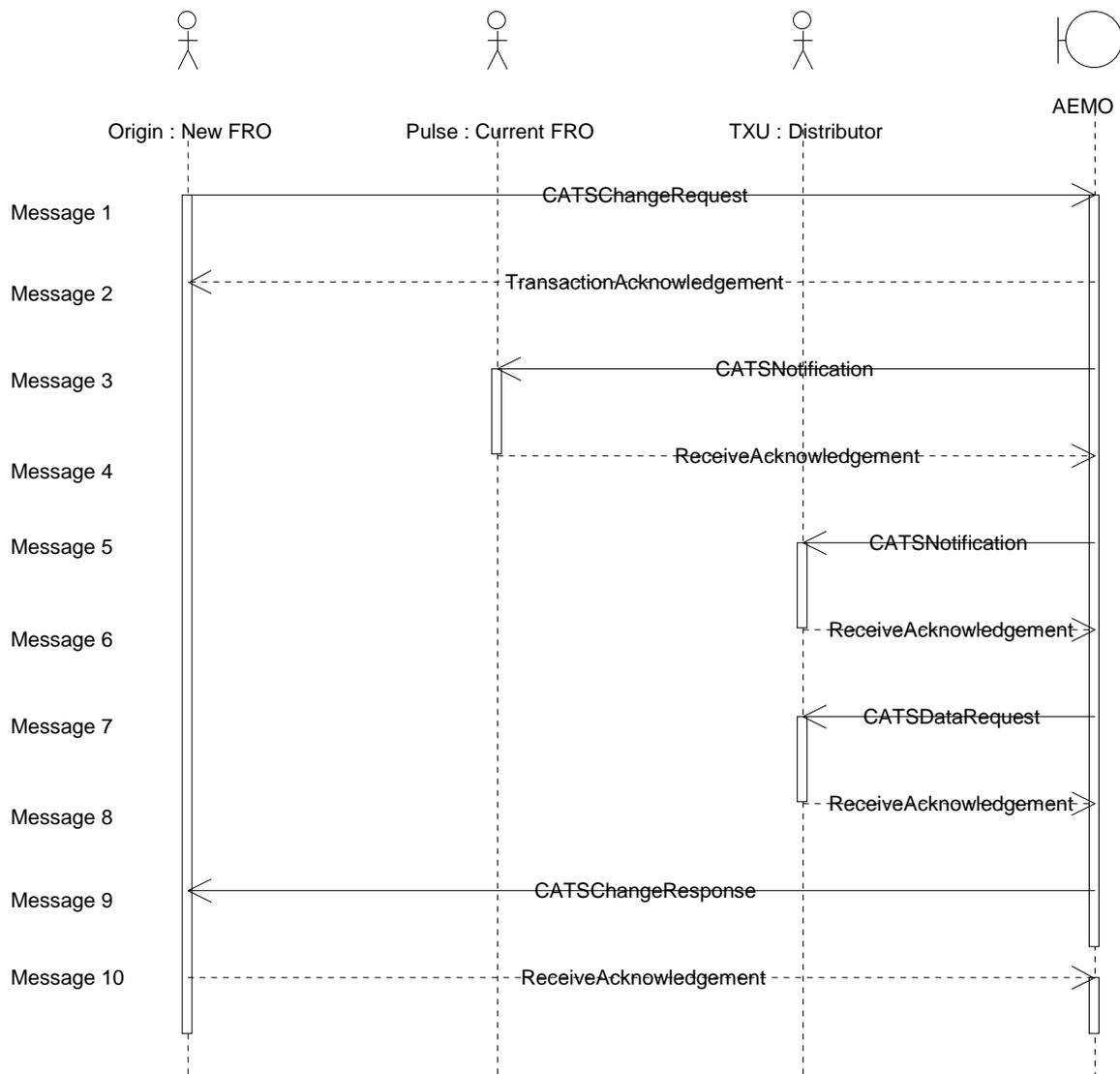
CATS Change Request example:

Change Reason: 001
New FRO: Origin
Current FRO: Pulse
Current Distributor: TXUNET

FIGURE 5-1. CATS CHANGE REQUEST EXAMPLE 1

ID	MESSAGE	FROM	TO
1	CATSChangeRequest	Origin	AEMO
2	TransactionAcknowledgement	AEMO	Origin
3	CATSNotification	AEMO	Pulse
4	ReceiveAcknowledgement	Pulse	AEMO
5	CATSNotification	AEMO	TXU

ID	MESSAGE	FROM	TO
6	ReceiveAcknowledgement	TXU	AEMO
7	CATSDataRequest	AEMO	TXU
8	ReceiveAcknowledgement	TXU	AEMO
9	CATSChangeResponse	AEMO	Origin
10	ReceiveAcknowledgement	Origin	AEMO

5.2.1 XML Example Message 1: CATSChangeRequest

```xml
<Header>
    <From description="">FBSTEST</From>
    <To description="">DEV</To>
    <MessageID>20120302152910657</MessageID>
    <MessageDate>2012-03-02T14:29:04+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Transactions>
    <Transaction transactionID="FBSTEST-20120302152904642" transactionDate="2012-03-02T14:29:04+10:00">
        <CATSChangeRequest version="r29">
            <ChangeReasonCode>0001</ChangeReasonCode>
            <ProposedDate>2012-03-02</ProposedDate>
            <MeterReadTypeCode>11</MeterReadTypeCode>
            <ActualEndDate>2012-03-02</ActualEndDate>
            <InitiatingRequestID>765677</InitiatingRequestID>
            <NMIStandingData xsi:type="ase:GasStandingData" version="r29">
                <NMI checksum="1">5510419959</NMI>
            </NMIStandingData>
        </CATSChangeRequest>
    </Transaction>
</Transactions>
```

5.2.2 XML Example Message 2: TransactionAcknowledgement

AEMO generates relevant TransactionAcknowledgement(s), once CATS has validated the CATSChangeRequest transaction.

```xml
<Header>
 <From>VENCORP</From>
 <To>ORIGIN</To>
 <MessageID>VENCORP-MSG-4</MessageID>
 <MessageDate>2001-09-24T15:00:12.000+10:00</MessageDate>
 <TransactionGroup>CATS</TransactionGroup>
 <Priority>Medium</Priority>
 <Market>VICGAS</Market>
</Header>
<Acknowledgements>
 <TransactionAcknowledgement initiatingTransactionID="ORIGIN-TNS-1" receiptID="VENCORP-ACK-2" receiptDate="2001-09-24T15:00:11.000+10:00" duplicate="No" status="Accept"/>
</Acknowledgements>
```

5.2.3 XML Example Message 3: CATSNotification

The current retailer is notified of the Change Request.

```xml
<Header>
    <From description="">FBSTEST</From>
    <To description="">DEV</To>
    <MessageID>20120302154126371</MessageID>
    <MessageDate>2012-03-02T14:41:17+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Transactions>
    <Transaction transactionID="FBSTEST-20120302154117964" transactionDate="2012-03-02T14:41:17+10:00">
        <CATSNotification version="r29">
            <Role>CFRO</Role>
            <RoleStatus>C</RoleStatus>
            <ChangeRequest>
                <Participant xsi:nil="false">ABC</Participant>
                <RequestID>5647302</RequestID>
                <ChangeStatusCode>PEN</ChangeStatusCode>
                <ChangeData>
                    <ChangeReasonCode>0001</ChangeReasonCode>
                    <ActualChangeDate>2012-03-02</ActualChangeDate>
                    <ActualEndDate>2012-03-02</ActualEndDate>
                    <NMIStandingData xsi:type="ase:GasStandingData" version="r29">
                        <NMI checksum="1">5510402478</NMI>
                    </NMIStandingData>
                </ChangeData>
            </ChangeRequest>
            <Objection>
                <Participant>XYZ</Participant>
                <ObjectionID>97979</ObjectionID>
                <ObjectionAction>Raised</ObjectionAction>
                <ObjectionData>
                    <InitiatingRequestID>9799090</InitiatingRequestID>
                    <Role>4532</Role>
                    <ObjectionCode>5643</ObjectionCode>
                </ObjectionData>
            </Objection>
            <JurisdictionCode>ABS</JurisdictionCode>
            <NMIClassificationCode>9767</NMIClassificationCode>
            <ObjectionEndDate>2012-03-02</ObjectionEndDate>
        </CATSNotification>
    </Transaction>
</Transactions>
```

5.2.4 XML Example Message 4: TransactionAcknowledgement

The current retailer acknowledges receipt of the CATSNotification.

```
<Header>
    <From description="Pulse Energy">PULSE</From>
    <To description="Victorian Energy Networks Corporation">VENCORP</To>
    <MessageID>PULSE-MSG-4</MessageID>
    <MessageDate>2001-09-24T15:00:16.000+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Acknowledgements>
    <TransactionAcknowledge            initiatingTransactionID="VENCORP-TXN-4"
        receiptID="PULSE-ACK-2"        receiptDate="2001-09-24T15:00:15.000+10:00"
status="Accept"/>
</Acknowledgements>
```

5.2.5 XML Example Message 5: CATSNotification

The distributor is notified of the Change Request.

```
<Header>
    <From description="">FBSTEST</From>
    <To description="">DEV</To>
    <MessageID>20120302154126371</MessageID>
    <MessageDate>2012-03-02T14:41:17+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Transactions>
    <Transaction transactionID="FBSTEST-20120302154117964" transactionDate="2012-03-
02T14:41:17+10:00">
        <CATSNotification version="r29">
            <Role>CFRO</Role>
            <RoleStatus>C</RoleStatus>
            <ChangeRequest>
                <Participant xsi:nil="false">ABC</Participant>
                <RequestID>5647302</RequestID>
                <ChangeStatusCode>PEN</ChangeStatusCode>
                <ChangeData>
                    <ChangeReasonCode>0001</ChangeReasonCode>
                    <ActualChangeDate>2012-03-02</ActualChangeDate>
                    <ActualEndDate>2012-03-02</ActualEndDate>
                    <NMIStandingData xsi:type="ase:GasStandingData" version="r29">
                        <NMI checksum="1">5510402478</NMI>
                    </NMIStandingData>
                </ChangeData>
            </ChangeRequest>
            <Objection>
                <Participant>XYZ</Participant>
                <ObjectionID>97979</ObjectionID>
                <ObjectionAction>Raised</ObjectionAction>
```

```
            <ObjectionData>
                <InitiatingRequestID>9799090</InitiatingRequestID>
                <Role>4532</Role>
                <ObjectionCode>5643</ObjectionCode>
            </ObjectionData>
        </Objection>
        <JurisdictionCode>ABS</JurisdictionCode>
        <NMIClassificationCode>9767</NMIClassificationCode>
        <ObjectionEndDate>2012-03-02</ObjectionEndDate>
    </CATSNotification>
  </Transaction>
</Transactions>
```

5.2.6   XML Example Message 6: TransactionAcknowledgement

The distributor acknowledges receipt of the CATSNotification.

```
<Header>
    <From>TXUNET</From>
    <To description="Victorian Energy Networks Corporation">VENCORP</To>
    <MessageID>TXUNET-MSG-4</MessageID>
    <MessageDate>2001-09-24T15:00:20.000+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Acknowledgements>
    <TransactionAcknowledgement          initiatingTransactionID="VENCORP-TXN-3"
        receiptID="TXUNET-ACK-2"          receiptDate="2001-09-24T15:00:19.000+10:00"
status="Accept"/>
</Acknowledgements>
```

5.2.7   XML Example Message 7: CATSDataRequest

Sent to the distributor to request standing data for the Supply Point.

```
<Header>
    <From description="">FBSTEST</From>
    <To description="">DEV</To>
    <MessageID>20120302153725348</MessageID>
    <MessageDate>2012-03-02T14:37:21+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Transactions>
    <Transaction transactionID="FBSTEST-20120302153721254" transactionDate="2012-03-
02T14:37:21+10:00">
        <CATSDataRequest version="r29">
            <Role>CFRO</Role>
            <RoleStatus>C</RoleStatus>
            <InitiatingRequestID>5647302</InitiatingRequestID>
            <ActualChangeDate>2012-03-02</ActualChangeDate>
```

```
                    <NMIStandingData xsi:type="ase:GasStandingData" version="r29">
                        <NMI checksum="1">5510402478</NMI>
                    </NMIStandingData>
                </CATSDataRequest>
            </Transaction>
        </Transactions>
```

5.2.8   XML Example Message 8:   TransactionAcknowledgement

The distributor acknowledges receipt of the CATSDataRequest.

```
<Header>
    <From>TXUNET</From>
    <To description="Victorian Energy Networks Corporation">VENCORP</To>
    <MessageID>TXUNET-MSG-4</MessageID>
    <MessageDate>2001-09-24T15:00:24.000+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Acknowledgements>
    <TransactionAcknowledgement                    initiatingTransactionID="VENCORP-TXN-5"
        receiptID="TXUNET-ACK-2"                   receiptDate="2001-09-24T15:00:23.000+10:00"
status="Accept"/>
</Acknowledgements>
```

5.2.9   XML Example Message 9: CATSChangeResponse

AEMO advises the new retailer of the Change Request ID assigned to the Change Request.

```
<Header>
    <From description="">FBSTEST</From>
    <To description="">DEV</To>
    <MessageID>20120302153200096</MessageID>
    <MessageDate>2012-03-02T14:31:55+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Transactions>
    <Transaction transactionID="FBSTEST-20120302153155424" transactionDate="2012-03-
02T14:31:55+10:00" initiatingTransactionID="CCBRMA539864960688">
        <CATSChangeResponse version="r29">
            <RequestID>349004</RequestID>
            <Event class="Message" severity="Information">
                <Code>0</Code>
                <Explanation>All OK</Explanation>
            </Event>
        </CATSChangeResponse>
    </Transaction>
```

5.2.10   XML Example Message 10:   TransactionAcknowledgement

The new retailer acknowledges receipt of the CATSChangeResponse.

```
<Header>
    <From description="Origin Energy">ORIGIN</From>
    <To description="Victorian Energy Networks Corporation">VENCORP</To>
    <MessageID>ORIGIN-MSG-3</MessageID>
    <MessageDate>2001-09-24T15:00:28.000+10:00</MessageDate>
    <TransactionGroup>CATS</TransactionGroup>
    <Priority>Medium</Priority>
    <Market>VICGAS</Market>
</Header>
<Acknowledgements>
    <TransactionAcknowledgement                    initiatingTransactionID="VENCORP-TXN-2"
        receiptID="ORIGIN-ACK-2"                    receiptDate="2001-09-24T15:00:27.000+10:00"
status="Accept"/>
</Acknowledgements>
```

Appendix A. Data Dictionary

A.1   aseXML Data Elements[1]

These data elements are applicable to this document only; Build Pack 3 has a separate data dictionary that may differ from the items listed below.

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
AcceptedCount		The number of Meter Reads accepted	Integer		
ActivityID		A unique reference number assigned to the batch.	Integer	10	
ActualChangeDate	Actual Transfer Date	Date on which the Customer Transfer is required	Date	10	ccyy-mm-dd
ActualEndDate	Registration End Date	In relation to a transfer request which nominates a retrospective transfer date as the proposed transfer date.	Date	10	ccyy-mm-dd
AustralianPostCode		Defined Australian postcode as per Australian Standard AS4590	String	4	Must be numeric

[1] Codes and enumerations in PBP2: In most cases aseXML uses enumerations of fully expanded descriptions. Exception to this procedure is the use of codes that have been already in use in the electricity FRC. CSV data elements utilise acronyms and abbreviations instead.

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
BaseLoad	Base Load	Non weather sensitive Gas usage per day (MJ)	Decimal	9,1	
ChangeReasonCode	Change Reason Code	Identifies the type of transfer request	String	4	"0001" = Prospective transfer, in situ "0002" = Prospective transfer, move-in "0003" = Retrospective transfer
ChangeStatusCode	Change Status Code	Describes the status of a transfer request within CATS	String	4	"REQ" = Requested "PEN" = Pending "OBJ" = Objected "COM" = Completed "CAN" = Cancelled "RCA" = RoLR Cancelled "RCO" = RoLR Completed
checksum	MIRN Checksum	Is a number calculated by an algorithm for validation puposes and is an attribute of the MIRN	Integer	1	Attribute of MIRN
Count	Number of Metered Supply Points	The number of metered supply points	Integer	10	

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
CountDate	As at Date	Date on which the metered supply points have been counted	Date	10	ccyy-mm-dd
CSVConsumptionData		Contains embedded data in CSV format			CSV file containing the fields defined in section 0 of this document
CSVHistoryRequestData/CSV Data		Contains embedded data in CSV format			CSV file containing the fields defined in section 4.3.2.1 of this document
CSVMissingMeterData/CSVD ata		Contains embedded data in CSV format			CSV file containing the fields defined in section 4.2.2.1 of this document
CSVNMIStandingData/CSVD ata		Contains embedded data in CSV format			CSV file containing the fields defined in section 4.3.3.1 of this document
DateServiceOrderCompleted	Date Service Request Completed	Date on which the Service requested was completed.	Date	10	ccyy-MM-dd
Event	Return Code	An element that may be returned with a transaction acknowledgement or a response transaction to identify errors encountered.			See Ref.[5] and Appendix C – Event Codes For child element "KeyInfo" the Format = String and the Length = 80 characters.

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
InitiatingRequestID	Change Request ID	Unique identifier assigned to each transfer request by CATS	Integer	10	*1-9999999999*
LoadDate		The date the data was loaded into the receiver's database	DateTime	25	ccyy-MM-ddThh:mm:ss+hh:mm
MIRNAssignmentDate	MIRN Assignment Date	Date at which up stand installed	Date	10	ccyy-MM-dd
MIRNStatus	MIRN Status	Indicator supplied by the Distributor to AEMO to advise AEMO whether the upstand is removed and is therefore deregistered	Enum		"Registered"=upstand installed "Commissioned"=meter installed "Decommissioned"=meter is removed "Deregistered"=upstand is removed
NetworkID	NetworkID	Code that identifies a NMI that is connected to a specific Non-DTS Distribution Businesses Network. Note: The code numbers cannot be reused.	String	2	"01" denotes Envestra Non-PTS in Bairnsdale. "04" denotes Multinet Non DTS in South Gippsland "05" denoted SP AusNet Non-DTS in the Grampians area. For the avoidance of

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
					doubt, "00" denotes DTS and "03" is used for Queensland.
NMI	MIRN	Meter Installation Registration Number. Unique number allocated by the Distributor that identifies the Supply Point.	String	10	
ObjectionAction	Objection Action	Indicates whether an objection is being raised or withdrawn.	String		"Raised" = Raised "Withdrawn" = Withdrawn
ObjectionCode	Objection Reason Code	Identifies the reason for an objection to a transfer.	String	8	"AGEDDEBT" = Aged Debt "DECLINED" = Retrospectively Affected FRO does not consent to transfer
ObjectionDate		Date the objection was recorded in CATS	Date		ccyy-mm-dd
ObjectionID	Objection ID	A unique identifier assigned by CATS to each objection.	Integer	10	0-9999999999
Participant	Initiating Market Participant Notifying Participant	A code to identify the Market Participant	String	10	For codes, see report as published on AEMO website.

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Party	Current FRO	A code that identifies who the current Retailer is in relation to the Distributors Meter Register	String	10	same values as per Participant
ProposedDate	Proposed Transfer Date	Date on which the transfer is proposed	Date	10	ccyy-mm-dd
RecordCount	N/A	Specifies the number of records contained in a populated CSV element	Integer	10	
RequestID	Change Request ID	Unique identifier assigned to each transfer request by CATS	Integer	10	*1-9999999999*
Role	Role Receiving Notification Objecting Role Role Required to Supply Data Notifying Role	Role of a participant	String	4	"CDB" = Current Distribution Business "CFRO" = Current Financially Responsible Organisation "CTPO" = Current Transmission Pipeline Owner "NFRO" = New Financially Responsible

ASEXML ELEMENT NAME	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES /FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
					Organisation
RoleStatus		The status of the role	String	Enum	"C" = Current "N" = New
TemperatureSensitivityFactor	Temperature Sensitivity Factor	The incremental gas usage per effective degree day at that supply point that is associated with the cold weather (MJ per EDD).	Decimal	9,2	
TypeOfRead	Type of Read	Indicator identifying the type of reading which has taken place.	String	Enum	"Actual" "Estimated" "Substituted", "Customer Own Read"

A.2   CSV Data Elements[1]

The table below specifies the column designators for CSV data elements to be carried inside of some of aseXML transactions. Note, the order of CSV column designators is fixed and is as per definition of CSV files given by this document. All CSV data elements that convey time stamps represent them as Market Time, i.e. EST; no time zone information is required.

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Adjustment_Reason_Code	Adjustment Reason code	A code that the Distributor provides to the retailer which identifies the reason for the revised reading	String	2	"UR" = Under Read "OR" = Over Read "UE" = Under Estimated "OE" = Over Estimated "NC" = No Change
Average_Heating_Value	Average Heating Value	Is the sum of the Daily Weighted Flow Heating Value divided by the number of days for the reading/billing.	Numeric	4,2	
Base_Load	Base Load	Non weather sensitive Gas usage per day (MJ)	Numeric	9,1	
Consumed_Energy	Consumed Energy	Energy calculated (eg - Energy Flow)	Numeric	11,0	Megajoules
Current_Index_Value	Current Index Value	Most recent validated meter index stored on the database.	Numeric	7,0	

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Current_Read_Date	Current Read Date	The date on which the Current Index Value was read.	Date	10	ccyy-mm-dd
Effective_Batch_Refresh_Date	Effective Batch Refresh Date	The date is which the update was refreshed	Date	10	ccyy-mm-dd
Energy_Calculation_Date_Stamp	Energy Calculation Date Stamp	The date in which the distributor calculated the energy	Date	10	ccyy-mm-dd
Energy_Calculation_Time_Stamp	Energy Calculation Time Stamp	The time in which the distributor calculated the energy	Time	8	hh:mm:ss
Estimation_Substitution_Reason_Code	Estimation/Substitution Reason Code	Code that identifies why the Energy Flow was estimated/substituted	String	2	"01" = Meter Removed "02" = Meter Obstructed "03" = Dirty Dial "04" = Can't Locate Meter "05" = Gate Locked "06" = Savage Dog "07" = Meter Changed "08" = Refused Access "09" = Locked & No Answer

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
					"10" = Delayed Read "00" = Other "11" = Adjustment Read "12" = Damaged Meter "13" = Dial out of Alignment "14" = Key Required "15" = Access Overgrown "16" = Hi/Low Failure "17" = Meter Capacity Failure
Estimation_Substitution_Type	Estimation/Substitution Type	Indicator identifying the type of estimation/substitution applied.	String	2	"E1" = Estimation method 1 "E2" = Estimation method 2 "E3" = RB/DB agreed value "S1" = Substitution method 1 "S2" = Substitution method 2 "S3" = RB/DB agreed substituted value

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Gas_Meter_Number	Gas Meter Number	Number located on the gas meter.	String	12	
Gas_Meter_Units	Gas Meter Units	Identifies the unit of measure that pertains to the gas meter	String	1	"I"=Imperial "M"=Metric
Hi_Low_Failure	Hi/Low Failure	A code that indicates whether the meter reader has input a meter reading that was outside the predetermined tolerance range	String	1	"Y" = Yes "N" = No
History_Commencement_Date	History Commencement Date	Date in which the consumption history has been requested from	Date	10	ccyy-mm-dd
History_End_Date	History End Date	Date in which the consumption history has been requested to.	Date	10	ccyy-mm-dd
Last_Read_Date	Last Read Date	Date to which AEMO has recorded energy on this supply point	Date	10	ccyy-mm-dd

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Meter_Capacity_Failure	Meter Capacity Failure	A code that indicates whether the reading was outside the predetermined tolerance range	String	1	"Y" = Yes "N" = No
Meter_Status	Meter Status	Field that confirms if a disconnection has taken place. Meter Disconnection by Retailer notification to Distributor.	String	10	"Turned on" "Turned off" "Plugged" "No meter"
Next_Scheduled_Read_Date	Next Scheduled Read Date	According to the Meter Reading Schedule the next date on which the Meter is planned to be read.	Date	10	ccyy-mm-dd
NMI	MIRN	Meter Installation Registration Number. Unique number allocated by the Distributor that identifies the Supply Point.	String	10	
NMI_Checksum	MIRN Checksum	Is a number calculated by an algorithm for validation purposes	Integer	1	

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
Pressure_Correction_Factor	Pressure Correction Factor	Pressure Correction Factor applied to calculate gas flow.	Numeric	6,4	
Previous_Index_Value	Previous Index Value	The reading prior to the current index value stored on the database.	Numeric	7,0	
Previous_Read_Date	Previous Read Date	The date on which the Previous Index Value was read.	Date	10	ccyy-mm-dd
RB_Reference_Number	RB Reference Number	A unique reference number assigned to individual work requests raised by the RB.	String	10	
Reason_for_ Read	Reason for Special Read	What type of Special Read is to be performed.	String	3	"SRF" = Special Final Read, "SRR" = Special Reference Read, "SRA" = Special Account Investigation, "SRD" = Special Disconnection "SRT" = Special Transfer Read "SCH" = Schedule Cycle Read

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
					"INI" = Meter Installation Read "REM" = Meter Remove "OSO" = Other Service Order "MDV" = Meter Data Verify (residual)
Site_Post_Code		Defined Australian postcode as per Australian Standard AS4590	String	4	Must be numeric
Temperature_Sensitivity	Temperature Sensitivity Factor	The incremental gas usage per effective degree day at that supply point that is associated with the cold weather (MJ per EDD).	Numeric	9,2	
Type_of_Read	Type of Read	Indicator identifying the type of reading which has taken place.	String	1	"A" = Actual, "E" = Estimated "S" = Substituted "C" = Customer Own Read.
Volume_Flow	Volume Flow	Volume Flow is calculated by	Numeric	11,2	Cubic Metres

CSV COLUMN DESIGNATOR	TABLE OF TRANSACTIONS ELEMENT NAME	DESCRIPTION	ATTRIBUTES/ FORMAT	LENGTH/ DECIMAL PLACES	ALLOWED VALUES
		subtracting the Previous Index Value from the Current Index Value. A factor of 2.832 is applied to convert imperial registering Meters			

A.3   Decimal Datatypes

Participant Build Packs refer to Numeric or Decimal datatype for numbers that include decimal points. Normally, the data is packed to conserve disk space, and preserves its accuracy to the least significant digit after arithmetic operations. The numeric datatypes are defined with two optional parameters, precision and scale, enclosed in parentheses and separated by a comma: **numeric [(precision [, scale])]**. The *precision* (referred to in this document as "length") and *scale* (referred to as "decimal places") determine the range of values that can be stored in a numeric column.

- The *precision* specifies the maximum number of decimal digits that can be stored in the column. It includes *all* digits, both to the right and to the left of the decimal point. Precisions can range from 1 digit to 38 digits.

- The *scale* specifies the maximum number of digits that can be stored to the right of the decimal point. The scale must be less than or equal to the precision. You can specify a scale ranging from 0 digits to 38 digits or use the default scale of 0 digits.

- The number of digits to the left of the decimal point cannot exceed the *precision - scale.*

Enter decimal / numeric data as a string of digits preceded by an optional plus or minus sign and including an optional decimal point. If the value exceeds either the precision or scale specified for the column, the database server may truncate data and return an error message. Exact numeric types with a scale of 0 (*Integer*) - are displayed without a decimal point.

This table shows some **valid** entries for a datatype of Numeric(5,3) and indicates how these values would be displayed:

VALUE ENTERED	VALUE DISPLAYED
12.345	12.345
+12.345	12.345
-12.345	-12.345
12.345000	12.345
12.1	12.100
12	12.000
12.0	12.000
0	0

This table shows some **invalid** entries for a column with a datatype of Numeric(5,3):

VALUE ENTERED	TYPE OF ERROR
1,200	Commas not allowed.
12-	Minus sign should precede digits.
12.345678	Too many nonzero digits to the right of the decimal point.
123456.78	Too many nonzero digits to the left of the decimal point

Appendix B. aseXML Standard Event Codes

The following standard aseXML event codes shall apply to Gas FRC communications. These have been taken directly from the aseXML Guidelines (Version 1.3). Any application specific Event Codes defined specifically for GAS FRC will be defined in Appendix C and specified in the detailed interface definitions section of this document.

CLASS	CODE	DESCRIPTION	NOTES
	0	Success, OK, Accepted, etc.	Any class
Message (1-99)	1	Not well formed	
	2	Schema validation failure	
	3	Transaction not supported within Transaction Group	The transaction is not supported by the receiving system in the context of the provided transaction group
	4	Transaction version not supported	
	5	Uncompression failure	This covers both errors in the uncompress ion process and the absence of the appropriate file within the compressed format container
	6	Message too big	
	7	Header mismatch	Information provided by transport layer is inconsistent with the message header
	8	Incorrect market	The system to which the message is addressed does not handle the market indicated in the header
	9	Unknown Transaction Group	The transaction group is not supported by the receiving system
	10	Duplicate Transaction	

CLASS	CODE	DESCRIPTION	NOTES
Processing (100-199)	100	Application unavailable	
	101	Database data error	Typically the result of code error, such as insufficient checking of data validity prior to insertion into the database.
	102	Database system error	e.g. major database problem
Application (200-999)	200	Record(s) not found	
	201	Data missing	
	202	Data invalid	
	203	Unknown report	Requested report not supported by receiving system
	204	Missing or invalid report parameters	
	205	Unknown Table	Requested table is not replicated by the receiving system

Appendix C. Gas FRC Application Event Codes

The following Gas FRC specific aseXML event codes shall apply to Gas FRC communications. The usage of these event codes is specified in the detailed interface definitions section of this document.

Restricting the application of Event Codes to the nominated invoking transaction only applies to those aseXML transactions specified at market start (October 2002). The Market Start transactions are:

MARKET START TRANSACTION
CATSChangeAlert
CATSChangeRequest
CATSChangeWithdrawal
CATSDataRequest
CATSNotification
CATSObjectionRequest
CATSObjectionWithdrawal
GasMeterNotification/MeterFix
GasMeterNotification/MIRNStatusUpdate
MeterDataNotificaiton
NMIStandingDataUpdateNotification

Any new aseXML transactions introduced after Market Start can use any of the Event Codes listed below.

CATEGORY (CODE RANGE)	CODE	DESCRIPTION	SEVERITY	INVOKING TRANSACTION
CATS (3000-3199)	3000	New proposed date must not be earlier than original date	Error	CATSChangeRequest
	3002	Before the contestable date	Error	CATSChangeRequest
	3003	Initiator not active on the proposed end date	Error	CATSChangeRequest
	3004	Initiator not active on actual change date	Error	CATSChangeRequest
	3005	Initiator not active at all times between proposed date and actual end date	Error	CATSChangeRequest
	3006	MIRN assignment date is after proposed date	Error	CATSChangeRequest, CATSChangeAlert
	3007	Internal System Error	Error	all
	3008	MIRN not commissioned on proposed date	Error	CATSChangeRequest
	3009	meter reading does not exist for proposed date	Error	CATSChangeRequest, CATSNotification
	3010	More than one retrospectively affected FRO	Error	CATSChangeRequest
	3011	Sender already FRO on this date	Error	CATSChangeRequest
	3012	Retrospectively affected FRO not active	Error	CATSChangeRequest
	3013	The distributor defined by the NMI cannot be found	Error	CATSChangeRequest
	3014	Change no longer allows responses	Error	all
	3015	The initiator cannot send change alerts	Error	CATSChangeAlert
	3016	The sender is not an interested party on the	Error	CATSChangeRequest, CATSChangeAlert,CAT

CATEGORY (CODE RANGE)	CODE	DESCRIPTION	SEVERITY	INVOKING TRANSACTION
		change		SObjectionWithdrawal
	3017	The sender is not assigned this role on the change	Error	same as 3029
	3018	Sender not active	Error	CATSChangeRequest, CATSObjectionRequest
	3019	MIRN does not have a valid CATS meter type	Error	CATSChangeRequest
	3020	The change reason cannot be found	Error	CATSChangeRequest
	3021	Sender cannot be assigned to initiating role	Error	CATSChangeRequest
	3022	Conflicting change	Error	CATSChangeRequest
	3023	Change reason code specified is not correct	Error	CATSChangeRequest
	3024	Change specified does not relate to the specified MIRN	Error	CATSChangeRequest
	3025	Change no longer active	Error	CATSChangeRequest, CATSChangeWithdrawal,CATSChangeAlert
	3026	Only initiator can withdraw	Error	CATSChangeWithdrawal
	3027	Objection no longer active	Error	CATSObjectionRequest
	3028	Change no longer allows objections	Error	CATSObjectionRequest
	3029	Sender not in specified role	Error	CATSChangeAlert,CATSObjectionRequest,CATSObjectionWithdrawal
	3030	Invalid objection code	Error	CATSObjectionRequest
	3031	Objection does not relate to the specified change	Error	CATSObjectionRequest
	3032	Change no longer allows objection withdrawal	Error	CATSObjectionWithdrawal
	3033	The sender is not the objector	Error	CATSObjectionWithdra

CATEGORY (CODE RANGE)	CODE	DESCRIPTION	SEVERITY	INVOKING TRANSACTION
				wal
	3034	The recipient is not the Market Operator	Error	all
	3035	MIRN is not a gas meter	Error	CATSChangeRequest
	3036	Cannot transfer injection meter	Error	CATSChangeRequest
	3037	Warning! Initiating transfer of a CTM meter	Information	CATSChangeRequest
	3038	MIRN out of range	Error	CATSChangeRequest
	3039	Change Alert Information	Information	CATSChangeAlert
	3040	Recipient is not responsible for the supplied MIRN	Error	CATSDataRequest, CATSNotification
	3041	Data element update not permitted	Error	CATSChangeRequest
	3045	Participant has no rights in the Network	Error	CATSChangeRequest
BMP/PPS (3200-3399)	3200	Internal System Error	Error	all
	3201	Data has overlapping date ranges	Warning	MeterDataNotificaiton
	3202	Meter Installation unknown to Meter Register	Warning	all
	3203	Date range overlap with previous imported data	Warning	MeterDataNotification
	3204	Date range does not align with previous imported data	Warning	MeterDataNotification
	3205	Meter Read date is invalid	Warning	MeterDataNotification
	3206	Previous read date is invalid	Warning	MeterDataNotification
	3207	Numeric data value must be >= 0	Warning	all
	3208	Read Type is invalid	Warning	MeterDataNotification

CATEGORY (CODE RANGE)	CODE	DESCRIPTION	SEVERITY	INVOKING TRANSACTION
	3209	Meter Installation code invalid	Warning	all
	3210	Checksum does not match to Meter Installation code	Warning	all
	3211	Unknown postcode	Warning	NMIStandingDataUpdateNotification
	3212	Meter Installation code unavailable	Warning	all
	3213	Data set incomplete	Error	all
	3214	CSV row invalid	Warning	NMIStandingDataUpdateNotification, MeterDataNotification
	3215	Invalid Participant Code	Error	NMIStandingDataUpdateNotification, MeterDataNotification
	3216	Invalid format of CSV date field	Warning	NMIStandingDataUpdateNotification, MeterDataNotification
	3217	Non-required read	Warning	MeterDataNotification
Internal (3400-3599)	3400	Internal System Error	Error	all
	3401	Meter Installation unknown to Meter Register	Warning	all
	3402	Meter Installation code invalid	Warning	all
	3403	Checksum does not match to Meter Installation code	Warning	all
	3404	Unknown postcode	Warning	NMIStandingDataUpdateNotification, GasMeterNotification/MeterFix
	3405	Meter Installation code unavailable	Warning	all
	3406	CSV row invalid	Warning	NMIStandingDataUpdateNotification,
	3407	Invalid participant	Warning	

CATEGORY (CODE RANGE)	CODE	DESCRIPTION	SEVERITY	INVOKING TRANSACTION
	3408	Invalid Base Load	Warning	NMIStandingDataUpdateNotification, GasMeterNotification/MeterFix
	3409	Invalid Temperature Sensitivity Factor	Warning	NMIStandingDataUpdateNotification, GasMeterNotification/MeterFix
	3410	Invalid MIRN status	Warning	GasMeterNotification/MIRNStatusUpdate
	3411	Invalid date	Warning	GasMeterNotification/MeterFix, GasMeterNotification/MIRNStatusUpdate
	3412	Data set incomplete	Error	NMIStandingDataUpdateNotification
	3413	MIRN is already in provided status	Error	GasMeterNotification/MeterFix
	3414	MIRN not a basic meter	Error	MIRNStatusUpdate
	3415	Current FRO same as Declared Host Retailer	Error	GasMeterNotification/MeterFix
	3416	NetworkId is not a valid NetworkId	Error	GasMeterNotification/MeterFix
B2B (3600-3799)	Refer to PBP3, System Interface Definitions, Ref.[10].			

Appendix D. Table of Transactions Cross-Reference

The following table cross-references transactions defined in Ref.[3] to the aseXML transactions that realise the former. At the same time, the following table indicates whether the transaction description is included in the current document (PBP2), should be included in the PBP3, is part of MIBB update or a manual process. "N/A" in this column indicates that the transaction is not applicable in the context of this document. The second last column in this table named "Section Reference" contains cross-references to the sections of this document, so that the user can jump straight to the description of the particular transaction. The very last column is a reference to Retail Market Procedures.

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
1		Internal	N/A	N/A	N/A	
2		Internal	N/A	N/A	N/A	
3	Special Read Request	B2B	ServiceOrderRequest	3	4.1.6.1	2.2.4 (a)
3A	Special Read Request Response	B2B	ServiceOrderResponse	3	4.1.6.2	2.2.4 (a)
4		Internal	N/A	N/A	N/A	
5		Internal	N/A	N/A	N/A	
6	Special Read Request No Access advice	B2B	ServiceOrderResponse	3	4.1.6.2	2.1.5 (a) (v)
7		Internal	N/A	N/A	N/A	
8		Internal	N/A	N/A	N/A	
9	Energy Flow for Special Read (note: - Not a Customer Transfer Request)	B2B	MeterDataNotification	3	4.1.2.1	
9A	Energy Flow for Special Read (note: - Not a Customer Transfer Request) Response	B2B	MeterDataResponse	3	4.1.2.2	2.6.2 (a)
10	AEMO Customer Transfer Special Read notification	B2M	MeterDataNotification	2	0	2.1.5 (b)

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
10A	AEMO Customer Transfer Special Read confirmation	M2B	MeterDataResponse	2	4.2.2.3	
11	Replaced with 10A	M2B				
12	Account creation transaction.	B2B	AccountCreationNotification	3	4.1.8.1	2.1.5 (c)
13	Energy Flow for Special Read for a Customer Transfer	B2B	MeterDataNotification	3	4.1.2.1	2.6.2 (a)
13A	Energy Flow for Special Read for a Customer Transfer Response	B2B	MeterDataResponse	3	4.1.2.2	2.6.2 (a)
14		Internal	N/A	N/A	N/A	
15	Disconnection Read	B2B	MeterReadInputNotification	3	4.1.4.1	
16		Internal	N/A	N/A	N/A	
17	Energy Flow for Disconnection Read	B2B	MeterDataNotification	3	4.1.2.1	2.6.2 (a)
17A	Energy Flow for Disconnection Read Response	B2B	MeterDataResponse	3	4.1.2.2	2.6.2 (a)
25		Internal	N/A	N/A	N/A	
26		Internal	N/A	N/A	N/A	
27		Internal	N/A	N/A	N/A	
28		Field Work	N/A	N/A	N/A	
29			N/A	N/A	N/A	
30		Internal	N/A	N/A	N/A	

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
31	Customers Own Read by Phone	B2B	MeterReadInputNotification	3	4.1.4.1	2.2.3
31A	Energy Flow for Customer Own Read	B2B	MeterDataNotification	3	4.1.2.1	
31B	Energy Flow for Customer Own Read Response	B2B	MeterDataResponse	3	4.1.2.2	
32	Customers Own Read by Mail	Internal	N/A	N/A	N/A	
33		Internal	N/A	N/A	N/A	
34		Internal	N/A	N/A	N/A	
35		Internal	N/A	N/A	N/A	
36		Internal	N/A	N/A	N/A	
37		Internal	N/A	N/A	N/A	
39	Heating Value for the day	M2B	N/A	MIBB	N/A	
41	Energy Flow for Schedule or Special Read	B2B	MeterDataNotification	3	4.1.2.1	2.6.2(a) 2.7.2(b)(iii) 2.1.3 2.1.5(a)(i) 2.1.5(a)(vi)
41A	Energy Flow for Schedule or Special Read Response	B2B	MeterDataResponse	3	4.1.2.2	2.6.2(a) 2.7.2(b)(iii) 2.1.3 2.1.5(a)(i) 2.1.5(a)(vi)

TABLE OF TRANSACTIONS			ASEXML				
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
42	Energy Flow from a 2nd Tier Site for AEMO for a Special Read or Schedule read	B2M	MeterDataNotification	2	0	2.6.2(b) 2.7.2(b)(iii) 2.1.3 2.1.5(a)(i) 2.1.5(a)(vi)
42A	Response to Energy Flow from a 2nd Tier Site for AEMO for a Special Read or Schedule read	M2B	MeterDataResponse	2	4.2.2.3	
43		Internal	N/A	N/A	N/A	
44		Internal	N/A	N/A	N/A	
45	Energy History Request	B2B	N/A	Manual process	N/A	2.1.5 (e)
46	Energy History Response	B2B	MeterDataHistoryResponse	3	4.1.5.1	2.1.5 (f)
47	Request for History	M2B	MeterDataHistoryRequest	2	4.3.2.1	2.1.5 (f)
48	Energy History Response	B2M	MeterDataNotification	2	0	
49	Retailer requesting missing meter reading data	B2B	MeterDataMissingNotification	3	4.1.3.1	
50	Energy Flow for Missing Reads	B2B	MeterDataNotification	3	4.1.2.1	
50A	Energy Flow for Missing Reads Response	B2B	MeterDataResponse	3	4.1.2.2	
51	Energy Flow for an Estimate Read	B2B	MeterDataNotification	3	4.1.2.1	2.4.2(b)(iii)
51A	Energy Flow for an Estimate Read Response	B2B	MeterDataResponse	3	4.1.2.2	2.4.2(b)(iii)

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
52	Energy Flow which is for 2nd Tier Site that has been Estimated.	B2M	MeterDataNotification	2	0	2.4.2(b)(iv)
52A	Response to Energy Flow which is for 2nd Tier Site that has been Estimated.	M2B	MeterDataResponse	2	4.2.2.3	
53	Energy Flow for a Substituted Read	B2B	MeterDataNotification	3	4.1.2.1	2.5.2(b)(iii)
53A	Energy Flow for a Substituted Read Response	B2B	MeterDataResponse	3	4.1.2.2	2.5.2(b)(iii)
54	Energy Flow which is for 2nd Tier Site that has been Subsituted.	B2M	MeterDataNotification	2	0	2.5.2(b)(iv)
54A	Response to Energy Flow which is for 2nd Tier Site that has been Subsituted.	M2B	MeterDataResponse	2	4.2.2.3	
56		M2B	N/A	MIBB	N/A	
57	Heating Value for the day	M2B	N/A	MIBB	N/A	
65		Internal	N/A	N/A	N/A	
66	Meter Site Access Information Change from RB	B2B	AmendMeterRouteDetails	3	4.4.2.1	2.2.2 (b)
67	Meter Site Access Information Change from DB	B2B	AmendMeterRouteDetails	3	4.4.2.1	2.2.2 (b)
68	Supply Point Information	B2B	AmendMeterRouteDetails	3	4.4.3.1	2.2.2 (b), 3.3.1 (d)
69	Address Information Change from DB	B2B	AmendMeterRouteDetails	3	4.4.3.1	2.2.2 (b)
70	Amend Customer Contact Details	B2B	AmendMeterRouteDetails	3		

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
71	Amend Customer Contact Details (six monthly refresh)	Internal	N/A	N/A	N/A	
72	Update to Meter Route	Internal	N/A	N/A	N/A	
73		Internal	N/A	N/A	N/A	
74	Annual Meter Reading Schedule	B2B	N/A	Manual process	N/A	2.2.1 (c)
75	Meter Reading Route Change	B2B	AmendMeterRouteDetails	3	4.4.4.1	2.2.1 (d) (e)
85		Internal	N/A	N/A	N/A	
86		Internal	N/A	N/A	N/A	
87	Meter Fix request "A" or "B" type.	B2B	ServiceOrderRequest	3	4.2.2.1	
87A	Meter Fix request "A" or "B" type Response	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.1(a)
88		Internal	N/A	N/A	N/A	
89		Internal	N/A	N/A	N/A	
90		Internal	N/A	N/A	N/A	
91		Internal	N/A	N/A	N/A	
92	Meter Fix completed	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.1(e) (ii)
93	No Access to complete Meter Fix	B2B	ServiceOrderResponse	3	4.2.2.2	No procedure required
94	AEMO Meter Fix notification	B2M	GasMeterNotification/MeterFix	2	0	2.9.1(e) (iii)
100		Internal	N/A	N/A	N/A	

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
101	Meter Change Request	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure required
101 A	Meter Change Request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure required
102		Field Work	N/A	N/A	N/A	
103		Field Work	N/A	N/A	N/A	
104	No Access to complete Meter Change	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure required
105		Field Work	N/A	N/A	N/A	
106		Field Work	N/A	N/A	N/A	
107		Internal	N/A	N/A	N/A	
108	Meter Change Completed	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.2 (ii)
120	Request Basic Meter Upgrade	B2B	N/A	Manual process	N/A	
121	Quote for Upgrade of Basic Meter	B2B	N/A	Manual process	N/A	
122	Accept quote for Basic Meter Upgrade	B2B	N/A	Manual process	N/A	
123		Field Work	N/A	N/A	N/A	

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
124		Field Work	N/A	N/A	N/A	
125	Meter Upgrade Completed RB Advice	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.3 (b) (i)
126	Meter Upgrade Completed AEMO advice	B2M	N/A	Manual Process	N/A	2.9.3 (b) (ii)
135		Internal	N/A	N/A	N/A	
136	Time Expired Meters Notification	B2B	FieldWorkNotification	3	4.2.3.1	2.9.4 (a)
137		Field Work	N/A	N/A	N/A	
138		Field Work	N/A	N/A	N/A	
150		Internal	N/A	N/A	N/A	
151	Meter Removal Request	B2B	ServiceOrderRequest	3	4.2.2.1	
151 A	Meter Removal Request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure required
152		Field Work	N/A	N/A	N/A	
153		Field Work	N/A	N/A	N/A	
154	No Access to complete Meter Removal	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure required
155		Field Work	N/A	N/A	N/A	

TABLE OF TRANSACTIONS			ASEXML				
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference	
156		Field Work	N/A	N/A	N/A		
157	Meter Removal Completed	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.2(a)(ii)C	
158	MIRN Status Update Notification	B2M - Real Time or Batch	GasMeterNotification/MIRNStatusUpdate	2	0	2.9.2(a)(ii)C	
170	Transfer Request	B2M	CATSChangeRequest	2	4.1.2.1	4.1.1 (a) (b)	
170 A	Transfer Response	M2B	CATSChangeResponse	2	4.1.3.2	4.1.1 (a) (b)	
171	Validation Check	Internal	N/A	N/A	N/A		
172	Validation Check	Internal	N/A	N/A	N/A		
173	Validation Check	Internal	N/A	N/A	N/A		
174	Validation Check	Internal	N/A	N/A	N/A		
175	Validation Check	Internal	N/A	N/A	N/A		
176	Validation Check	Internal	N/A	N/A	N/A		
177	Validation Check	Internal	N/A	N/A	N/A		
178	Validation Check	Internal	N/A	N/A	N/A		
179	Validation Check	Internal	N/A	N/A	N/A		
180	Validation Check	Internal	N/A	N/A	N/A		
181	Request for Data	M2B	CATSDataRequest	2	4.1.3.3		
182	Request for Data	B2M	CATSChangeRequest	2	4.1.4.1		

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
182 A	Response to Standing Data Request	M2B	CATSChangeResponse	2	4.1.4.2	
183	Notice of Transfer	M2B	CATSNotification	2	4.1.3.1	4.2.1 (a)
184	Notice of Transfer	M2B	CATSNotification	2	4.1.3.1	4.2.1 (b)
185	Notice of Transfer	M2B	CATSNotification	2	4.1.3.1	4.2.1 (c)
186	Transfer Notice	M2B	CATSNotification	2	2.2	4.2.1 (d)
187	Objection	B2M	CATSObjectionRequest	2	4.1.7.1	4.3.1(a)(i)(ii)
187 A	Objection Response	M2B	CATSObjectionResponse	2	4.1.7.2	4.3.1(a)(i)(ii)
188	Validation Check	Internal Validation	N/A	N/A	N/A	
189	Validation Check	Internal Validation	N/A	N/A	N/A	
190	Validation Check	Internal Validation	N/A	N/A	N/A	
191	Withdrawal of Objection	B2M	CATSObjectionWithdrawal	2	4.1.8.1	4.3.2
192	Validation Check	Internal Validation	N/A	N/A	N/A	
193	Objection Notification or Objection Withdrawal Notification	M2B	CATSNotification	2	4.1.8.2	4.3.3 (a) (i)

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
194	Objection Notification or Objection Withdrawal Notification	M2B	CATSNotification	2	4.1.8.2	4.3.3 (a) (ii)
195	Objection Notification or Objection Withdrawal Notification	M2B	CATSNotification	2	2.2	4.3.3 (a) (iii)
195 A	Objection Notification or Objection Withdrawal Notification	M2B	CATSNotification	2	4.1.8.2	4.3.3 (a) (iii)
196	Transfer Cancellation	M2B	CATSNotification	2	4.1.10.1	4.3.4 (d) (i)
197	Transfer Cancellation	M2B	CATSNotification	2	4.1.10.1	4.3.4(d)(ii)(iii)
198	Transfer Cancellation	M2B	CATSNotification	2	4.1.10.1	4.3.4 (d) (v)
199	Transfer Cancellation	M2B	CATSNotification	2	2.2	4.3.4 (b)
200	Problem Notice	B2M	CATSChangeAlert	2	0	4.4.1
201	Problem Notice	B2M	CATSChangeAlert	2	2.2	4.4.1
202	Problem Notice	B2M	CATSChangeAlert	2	0	4.4.1
203	Problem Notice	B2M	CATSChangeAlert	2	0	4.4.1
204	Problem Notice	M2B	CATSChangeAlert	2	0	4.4.2
205	Withdrawal Transfer Notice	B2M	CATSChangeWithdrawal	2	0	4.5.1 (a)
206	Withdrawal Transfer Notice	M2B	CATSNotification	2	4.1.9.2	4.5.3 (a)
206 A	Withdrawal Transfer Notice	M2B	CATSNotification	2	4.1.9.2	N/A
207	Withdrawal Transfer Notice	M2B	CATSNotification	2	4.1.9.2	4.5.3 (b)
208	Withdrawal Transfer Notice	M2B	CATSNotification	2	4.1.9.2	4.5.3 (c)

	TABLE OF TRANSACTIONS		ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
209	Withdrawal Transfer Notice	M2B	CATSNotification	2	2.2	4.5.3 (d)
210	Notice of Read Failure	M2B	CATSDataRequest	2	0	4.6.2 (a) (iii)
211	Notice of Read Failure	M2B	CATSDataRequest	2	0	4.6.2 (a) (iv)
212	Notice of Read Failure	M2B	CATSDataRequest	2	0	4.6.2 (a) (v)
213	Notice of Read Failure	M2B	CATSDataRequest	2	2.2	4.6.2 (a) (vi)
214	New Transfer Date	B2M	CATSChangeRequest	2	4.1.5.1	4.6.3 (a)
214 A	Response to Alternative Transfer Date Request	M2B	CATSChangeResponse	2	4.1.5.3	4.6.3 (a)
215	Validation Check	Internal Validation	N/A	N/A	N/A	
216	Validation Check	Internal Validation	N/A	N/A	N/A	
217	Validation Check	Internal Validation	N/A	N/A	N/A	
218	Validation Check	Internal Validation	N/A	N/A	N/A	
219	New Transfer Date	M2B	CATSNotification	2	4.1.5.2	4.6.3 (c) (i)
220	New Transfer Date	M2B	CATSNotification	2	4.1.5.2	4.6.3 (c) (ii)
221	New Transfer Date	M2B	CATSNotification	2	2.2	4.6.3 (c) (iii)

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
222	Transfer Termination Notice	M2B	CATSNotification	2	4.1.10.1	4.6.4 (c)
223	Transfer Termination Notice	M2B	CATSNotification	2	4.1.10.1	4.6.4 (d)
224	Transfer Termination Notice	B2M	CATSNotification	2	4.1.10.1	4.6.4 (e)
225	Transfer Termination Notice	M2B	CATSNotification	2	2.2	4.6.4 (f)
226	Notice of Transfer	M2B	CATSNotification	2	0	4.8 (a)
227	Notice of Transfer	M2B	CATSNotification	2	0	4.8 (b)
228	Notice of Transfer	M2B	CATSNotification	2	0	4.8 (c)
229	Notice of Transfer	M2B	CATSNotification	2	0	4.8 (d)
230	Notice of Transfer	M2B	CATSNotification	2	2.2	4.8 (e)
231	Account creation transaction.	B2B	AccountCreationNotification	3	4.1.8.1	2.1.5 (c)
232	Transfer Status Update	M2B	CATSNotification	2	0	
233	Transfer Status Update	M2B	CATSNotification	2	0	
234	Transfer Status Update	M2B	CATSNotification	2	0	
235	Transfer Status Update	M2B	CATSNotification	2	0	
240		Internal	N/A	N/A	N/A	
241		Internal	N/A	N/A	N/A	
242	Meter Data Verification	B2B	MeterDataVerifyRequest	3	4.1.7.1	2.4.2(a) 2.7.1
243	Meter Data Verification	B2B	MeterDataVerifyResponse	3	4.1.7.2	2.4.2(a) 2.7.1

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
244		B2B - Real Time	N/A	N/A	N/A	
245			N/A	N/A	N/A	
246	Energy Flow Adjustment for RB	B2B	MeterDataNotification	3	4.1.2.1	2.7.2(b)(ii)
246 A	Energy Flow Adjustment for RB Response	B2B	MeterDataResponse	3	4.1.2.2	2.7.2(b)(ii)
247	Energy Flow Adjustment for AEMO	B2M	MeterDataNotification	2	0	2.7.2(b)(iii)
247 A	Response to Energy Flow Adjustment for AEMO	M2B	MeterDataResponse	2	4.2.2.3	
260	Provision of Energy Data	B2M	MeterDataNotification	2	0	2.6.2(b)
260 A	Response to Provision of Energy Data	M2B	MeterDataResponse	2	4.2.2.3	
261	Non-provision of Energy Data	M2B	MeterDataMissingNotification	2	4.2.2.1	2.6.3(b)
262	Provision of Missing Energy Data	B2M	MeterDataNotification	2	0	2.6.3(b)
262 A	Response to Provision of Missing Energy Data	M2B	MeterDataResponse	2	4.2.2.3	
263	Provision of Revised Energy Data	B2M	MeterDataNotification	2	0	2.4.2(b)(iv), 2.4.3(d), 2.5.2(b)(iv)
263 A	Response to Provision of Revised Energy Data	M2B	MeterDataResponse	2	4.2.2.3	
264	Bi-annual and ad-hoc refresh of BL & TSF	B2M	NMIStandingDataUpdate Notification	2	4.3.3.1	2.8.1(d)

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
264 A	Bi-annual and ad-hoc refresh of BL & TSF Response	M2B	NMIStandingDataUpdate Response	2	4.3.3.2	
265		M2B	N/A	MIBB	N/A	
266		M2B	N/A	MIBB	N/A	
267		M2B	N/A	MIBB	N/A	
280	Discovery request	B2B	NMIDiscoveryRequest	3	4.3.2.2	3.2.1
			NMIStandingDataRequest	3	4.3.2.5	
281	MIRN Standing Data	B2B	NMIDiscoveryResponse	3	4.3.2.3	3.3.2
			NMIStandingDataResponse	3	4.3.2.6	
284	MIRN Additional Data	B2B	NMIDiscoveryResponse	3	4.3.2.3	3.3.2 a (ii)
			NMIStandingDataResponse	3	4.3.2.6	
285	MIRN Discovery Assistance	B2B	N/A	Manual process	N/A	3.4
286	Updating of MIRN database	Internal	N/A	N/A	N/A	
287	Allocation of numbers for MIRNS	M2B	N/A	Manual Process	N/A	3.5.1(b)
288	Assign MIRN to new sites	Internal	N/A	N/A	N/A	3.5.1(g) (i)
289	Standing Data Change from DB	B2B	N/A	Manual process	N/A	
295	Allocation of MIRNS new transmission sites	Internal	N/A	N/A	N/A	

TABLE OF TRANSACTIONS			ASEXML				
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference	
296	Notification of MIRN for new transmission supply point	B2M	N/A	Manual Process	N/A	3.5.2(g) (ii)	
297	Notification of MIRN for new transmission supply point	M2B	N/A	Manual Process	N/A	3.5.2(g) (ii)	
310	Service Connection requests	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required	
310 A	Service Connection requests Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required	
311	Service Connection Complete	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required	
312	Service Disconnection Request	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required	
312 A	Service Disconnection Request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required	
313	Service Disconnection Complete	B2B	ServiceOrderResponse	3	4.2.2.2	2.9.6	
314	Service Orders for Priority C-K	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required	
314 A	Service Orders for Priority C-K Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required	
315	Service Orders Completed for Priority A-K	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required	

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
316	Relocate Service Connection request	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required
316 A	Relocate Service Connection request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
317	Relocate Service Complete	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
318	Upgrade Service Size request	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required
318 A	Upgrade Service Size request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
319	Upgrade Service Size Complete	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
320	Upgrade Meter Size request	B2B	ServiceOrderRequest	3	4.2.2.1	No Procedure Required
320 A	Upgrade Meter Size request Response	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
321	Upgrade Meter Size Complete	B2B	ServiceOrderResponse	3	4.2.2.2	No Procedure Required
330	Notification of mains/service renewal	B2B	FieldWorkNotification	3	4.2.4.1	No Procedure Required

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
331	Network Duos billing details (Tariff V)	B2B	NetworkDUoSBillingNotification	3	4.5.2.1	No Procedure Required
332	Network Duos billing details (Tariff D)	B2B	NetworkDUoSBillingNotification	3	4.5.2.1	No Procedure Required
333	Meter Range Updates	B2B	N/A	Manual process	N/A	No Procedure Required
335	Tariff D DOuS from AEMO to Distributor	M2B	N/A	Manual process	N/A	No Procedure Required
336	DB CTM data	M2B	N/A	Manual process	N/A	No Procedure Required
337	Retailer Churn	M2B	N/A	Manual process	N/A	No Procedure Required
338	Number of Metered Supply Points	B2M	MeteredSupplyPointsCountUpdate	2	0	2.9.7 Procedures Change Log, Change #7
350	Network DUoS Billing Details (Excluded Services)	B2B	NetoworkDUoSBillingNotification	3	4.5.2.1	No Procedure Required
351	Network DUoS Billing Details (Dispute Notification)	B2B	NetworkDUoSBillingNotification	3	4.5.2.1	No Procedure Required
352	Network DUoS Billing Details	B2B	NetworkDUoSBillingNotific	3	4.5.2.1	No Procedure

TABLE OF TRANSACTIONS			ASEXML			
Txn No	Transaction Type	Comms Type	Transaction	PBP	Section Reference	Procedure Reference
	(Dispute Resolution)		ation			Required
353	Network DUoS Billing Details (Payment Advice)	B2B	NetworkDUoSBillingNotification	3	4.5.2.1	No Procedure Required
354	Cross Meter Investigation. Initiate Request	B2B	N/A	Manual process	N/A	
355	Cross Meter Investigation. Investigation Report	B2B	N/A	Manual process	N/A	

Appendix E. MIRN Checksum Algorithm

When a Market Participant initiates a transfer request, one of the data fields that must be supplied is the MIRN. To avoid character transposition errors and reduce the likelihood of other data entry errors, a one-digit NMI_checksum is provided with the MIRN.

When CATS receives a transfer request, it calculates the NMI_checksum for the MIRN using the algorithm described in this appendix. If the calculated NMI_checksum differs from the NMI_checksum provided by the Market Participant, CATS rejects the transfer request.

This appendix describes the algorithm used to calculate a NMI_checksum for a MIRN. The algorithm is identical to the one used in AEMO's MSATS application.

E.1 Algorithm Description

The MIRN NMI_checksum calculation algorithm uses an internationally implemented, open source, non-copyrighted algorithm known as LUHN-10.

The logic of the algorithm can be summarised as:

1. Process each character in the MIRN individually, starting with the right most.

2. For each character:

3. Convert the character to its ASCII value

4. For the right most character and each alternate character reading left, double the ASCII value obtained in Step 3 above.

5. Add the individual digits of the ASCII value to a register holding the total added value for the Checksum.

6. Subtract the total added value register from the next highest multiple of 10.

7. The result is the Checksum.

Because the checksum works on the ASCII value of each character in the MIRN, it is capable of handling non-numeric MIRNs.

E.2   Sample Java Code

The following Java code implements the algorithm. Java was selected as the language for the sample because CATS is also written in Java.

```java
/**
* Calculates a LUHN-10.
* <PRE>
* 1. Double the value of alternate digits beginning with the rightmost
digit
* 2. Add the individual digits comprising the products obtained in step 1
to
*    each of the unaffected digits in the original number.
* 3. Find the next highest multiple of 10
* 4. The check digit is the value obtained in step 2 subtracted from the
value
*    obtained in step 3.
* 5. END
* </PRE>
*/
public class LUHN10
{
    /**
    * Value to indicate we have not calculated the luhn yet.
    */
    private static final int NULL_VALUE = -1;
    /**
    * Buffer holding the sequence of digits to use in thecalculation.
    */
    private StringBuffer _buffer;
    /**
    * The cached value for the luhn.
    */
    private int _luhn;
    /**
    * Constructor.
    */
    public LUHN10()
    {
        reset();
    }
    /**
    * Resets the calculator to its initial values.
    */
    public void reset()
    {
        _buffer = new StringBuffer();
        _luhn = NULL_VALUE;
    }
    /**
    * Updates the LUHN-10 with specified digit.  This will be the MIRN as
    * passed from the calling module.
    */
    public void update(char d)
    {
        // Append the character
        _buffer.append(d);
        // And, reset the cached luhn
        _luhn = NULL_VALUE;
    }
```

```java
    /**
     * Returns the current LUHN-10 value.
     */
    public int getValue()
    {
        if (_luhn == NULL_VALUE)
        {
            int v = 0;
            boolean multiply = true;
            for (int i = _buffer.length(); i > 0; i--)
            {
                int d = (int)_buffer.charAt(i - 1);
                if (multiply)
                {
                    d *= 2;
                }
                multiply = ! multiply;
                while (d > 0)
                {
                    v += d % 10;
                    d /= 10;
                }
            }
            _luhn = (10 - (v % 10)) % 10;
        }
        return _luhn;
    }
    public static void main(String[] args)
    {
        if (args.length == 0)
        {
            System.out.println("USAGE: LUHN10 MIRN");
        }
        else
        {
            LUHN10 luhn = new LUHN10();
            String mirn = args[0];
            for (int j = 0; j < mirn.length(); j++)
            {
                luhn.update(Character.toUpperCase(mirn.charAt(j)));
            }
            System.out.println(mirn + "/" + luhn.getValue());
        }
    }
}
```

Appendix. F   State Diagrams

F.1   Customer Transfer Request

The following state transition diagram shows the states that a customer transfer request going through its lifecycle.
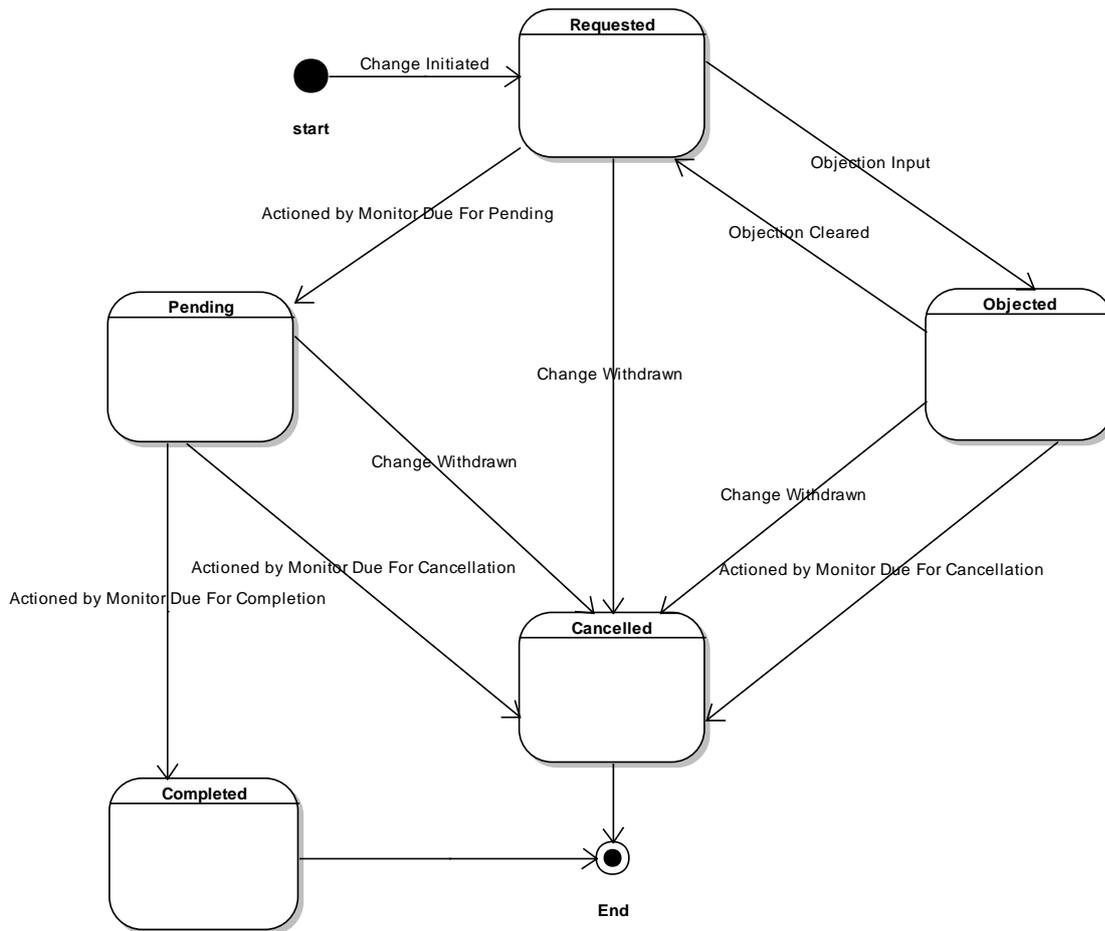
FIGURE 0-1. CUSTOMER TRANSFER REQUEST STATES

Appendix G. Index of Transactions and CSV Data Elements

Below is the index of transactions and CSV elements referred to by this document. A transaction number from the Ref.[3] or aseXML transaction name is shown against this document page number where the transaction is described.