PARTICIPANT BUILD PACK 2 USAGE GUIDE

PREPARED BY: MARKET DEVELOPMENT

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Document Approval and Acceptance

AEMO Approval

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Version History

VERSION.	DATE	AUTHOR(S)	CHANGES AND COMMENTS
1.0	28/11/2001	G Lyall	• Initial release
1.1	22/02/2002	G Lyall	• Updated PBP3 contents and referenced documents
1.2	05/04/2002	M. Kroumer	• Updated referenced documents versions
1.3	04/06/2002	M. Kroumer	• Updated referenced documents versions. Cosmetic updates to Section 4.1.
1.4	23/02/2004	D.McGowan	• Minor changes to introduction and approval section to reflect post FRC operation.
1.5	18/07/2005	D.McGowan	• Minor changes to approval section to reflect organisational changes.
1.6	01/06/2009	D.McGowan	• Minor changes to approval section to reflect organisational changes.
3.0	01/07/2010	S. Monaco	• Ensure document complies with AEMO standard. • Replace references to MSOR with relevant NGR & RMP references. • Update terminology to correspond with current usage and definitions. • Update acronyms to the current vernacular. • Update images • Add References to Predecessors
3.1	01/07/2014	T. Sheridan	• Updated interpretation guidelines

Executive Summary

This document is the Participant Build Pack 2 - Usage Guidelines for delivery of the AEMO IT Systems to support the operation of the Victorian Gas Retail 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.

Table of Contents

1. Introduction

1.1 Purpose

The purpose of the Usage Guidelines document of Participant Build Pack 2 is to explain the relationship between the various artefacts and to provide instruction on how to use the Participant Build Pack.

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, or as part of this Participant Build Pack 2 that should be read in conjunction with this document. The table below defines these:

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)*

1.4 Definitions and Acronyms

All terms related to this document are defined within the Participant Build Pack Glossary.

1.5 Overview and Structure of this Document

This document is organised into sections as described below:

SECTION	DESCRIPTION
Overview of the PBP	This chapter describes the contents and structure of Participant Build Packs.
Interpretation Guidelines	This chapter explains the notation and rules of reading the diagrams presented in the Participant Build Pack.
Modelling Tools	This chapter describes the modelling tools that have been utilised for Participant Build Pack development.

1.6 Assumptions/Constraints

1.6.1 Process Flow Diagrams

This build pack has been baselined against the version of the Process Flows identified in Section 1.3, any amendments or changes to these flows may result in an update to this Build Pack.

1.6.2 Transaction Definition Table

This Build Pack has been baselined against the version of the Transaction Definition Table identified in Section 1.3, any amendments or changes to these tables may result in an update to this Build Pack.

1.6.3 More changes could be incorporated into the PBP2 at later stage

It is anticipated that further changes and clarification will be required to the build pack(s) overtime. These changes will be progressed using the prescribed process as defined in the National Gas Rules (NGR).

1.6.4 Gas Retail Market updates to aseXML will be approved

This version of the Build Pack(s) assumes that a number of changes to the aseXML schema will be approved by the aseXML Work Group (ASWG). If these changes are rejected or modified by the ASWG, then this will require updates to the Participant Build Pack(s).

1.6.5 Harmonisation of aseXML with the National Electricity Market (NEM)

It has been agreed that aseXML will be used for both Gas and Electricity Retail Market interfaces. This will provide benefits to both projects by limiting the amount of rework and effort required to develop, implement and maintain two separate schemas. As a result of this harmonisation, a number of changes to the aseXML schema are under discussion by the

ASWG. Any changes to the currently approved schema may require updates to the Participant Build Pack(s).

1.6.6 Transmission System Service Providers (TSSP) will not implement an automated interface with AEMO

The low number of transactions expected to be exchanged between AEMO and TSSPs does not warrant the development of automated interfaces. Transactions to TSSPs have therefore not been included in the Interface Definitions of the Participant Build Pack. If this situation were to change and automated interfaces with TSSPs required, the changes could easily be incorporated into the build pack as the interfaces are almost identical to the interfaces with Distributors.

2. Overview of the Participant Build Packs

The documents that comprise each of the Participant Build Packs are summarised below, further details are provided in the following sections.

Participant Build Pack 1

- Process Flows
- Transaction Definition Table
- CSV Data Format Specification

Participant Build Pack 2

- Usage Guide
- Glossary
- Interface Definitions

Participant Build Pack 3

- B2B Architecture
- B2B Interface Definitions
- B2B System Specification

2.1 Participant Build Pack 1

2.1.1 Process Flows

2.1.1.1 Overview

The Process Flows or Process Maps have been developed by the GTPWG and identify the work processes and dataflows in the FRC environment. These detail each logical step in the process required to deliver various gas services in the FRC environment. The process maps also identify dataflows between businesses that will have to occur for FRC to operate successfully. The processes identified represent all the processes that are directly changed by the introduction of full retail contestability or have a material impact on the ability of the full retail contestability arrangements to operate efficiently.

In conjunction with the release of PBP2, the Process Flows have been reviewed, revised and documented using UML Activity Diagrams. All changes to the Process Flows are controlled and approved by the GTPWG.

2.1.1.2 Structure

This document has a single section which provides the process flow diagrams, note that these diagrams are sometimes referred to as process maps.

2.1.2 Transaction Definition Table

2.1.2.1 Overview

The Transaction Definition Table has been developed by the GTPWG and represents the business transactions required to operate a fully contestable gas market including business-to-business (B2B) and AEMO-to-business (M2B & B2M) transactions required under the Retail Market Procedures (the Procedures).

All changes to the Transaction Definition Table are controlled and approved by the GTPWG.

Participant Build Pack 2 describes in details only these transactions from the Transaction Definition Table that will be delivered with aseXML messages and labelled as either B2M or M2B in the “Type” column. Thus, the PBP2 does not include M2B or B2M transactions that will be communicated via MIBB or by other means (e.g. e-mail or fax).

The Transaction Definition Table defines the minimum set of data elements required to satisfy the Industry needs of each transaction. However, the Interface Definitions provided in PBP2 may include additional elements required to comply with the aseXML standard. Where there are differences between these documents, the information provided in the PBP2 Interface Definitions shall take precedence over the information provided in the Table of Transactions.

The Data Elements definitions included in the Transaction Definition Table have been used to define the data dictionary included in the Interface Definitions document.

2.1.2.2 Structure

This document is an Excel Workbook that includes four worksheets: Transaction Definition Table, Element Definitions, Job Enquiry Codes and Address Elements.

1. *Transaction Definition Table*

   This worksheet provides details of all transactions defined on the process flow diagrams. Cross-references are included to the process flow diagrams and the minimum business data requirements are specified.

2. *Element Definitions*

   This worksheet specifies the data requirements for data elements listed in the Transaction Definition Table.

3. *Job Enquiry Codes*

   This worksheet specifies the list of codes that describe the nature of work to be performed in relation to a retailer service request.

4. *Address Elements*

   This worksheet identifies the agreed standard for address structure.

5. *MIRN and Meter status*

   This worksheet is an explanatory to help understand the relationship between MIRN and Meter status.

2.1.3 CSV Data Format Specification

2.1.3.1 Overview

This CSV Data Format Specification defines format of Comma-Separated Values (CSV) files for GTPWG transactions that are to be exchanged amongst AEMO and Market Participants, and between Market Participants to enable Gas Full Retail Contestability (FRC) in Victoria. This document covers the delivery format of CSV component that is either incorporated into an aseXML transaction or as a file attached to an e-mail or provided on a disk.

2.2 Participant Build Pack 2

2.2.1 Usage Guide

2.2.1.1 Overview

The *Usage Guide* (this document) provides instruction on how to use the PBP and the relationship of the various artefacts contained in the pack. It also contains information about how to use any tools that are utilised as mechanism for delivery of the PBP parts.

2.2.1.2 Structure

This document is organised into four sections: Introduction, Overview of the Participant Build Packs, Interpretation Guidelines and Modelling Tools.

1. *Introduction*

   This chapter describes the purpose of the document and its intended audience. In addition, it brings together the list of documents that the PBP2 was based on. This section also includes a brief description of any Constraints or Assumptions that impacted on the development of the Participant Build Pack.

2. *Overview of the Participant Build Packs*

   This chapter provides a brief description of each of the artefacts that have been included in either PBP1 or PBP2. It also provides a brief explanation of the structure and contents of each document.

3. *Interpretation Guidelines*

   This chapter describes the notation used in any of the drawings included within the build pack and provides links to where further information on the notation can be found.

4. *Modelling Tools*

   This chapter details the modelling tools used to generate the build pack and defines where further information on the modelling tools can be found.

2.2.2 Glossary

2.2.2.1 Overview

The *Glossary* contains all terms and definitions used in the PBP or terms relevant to the construction of the business or IT systems.

2.2.2.2 Structure

This document is organised into three sections: Introduction, Acronyms and Abbreviations and Definitions.

1. *Introduction*

   This chapter describes the purpose of the document and its intended audience. In addition, it brings together the list of documents that the PBP2 was based on.

2. *Acronyms and Abbreviations*

   This chapter defines all acronyms and abbreviations used within the Build Pack.

3. *Definitions*

   This chapter includes a definition of all used in the PBP or terms relevant to the construction of the business or IT systems. Further definition of items included in the acronyms and abbreviations section may be provided in this section. Many of the definitions are based on the definitions included in the NGR and Retail Market Procedures.

2.2.3 Interface Definitions

2.2.3.1 Overview

The *Interface Definitions* included in Participant Build Pack (PBP) 2 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 that are required for all *Market Participants, Distributors and Transmission System Service Providers* to specify, build and test their systems.

2.2.3.2 Structure

This document is organised into five sections: Introduction, Overview of Interfaces, Generic Interfaces, Specific Interfaces and Example Scenarios.

1. *Introduction*

   This chapter describes the purpose of the document and its intended audience. In addition, it brings together the list of documents that the PBP2 was based on.

2. *Overview of interfaces*

   This chapter draws the line between generic and specific interfaces. It describes the common elements used in a specific interface description. The same section outlines the scope of the document and indicates which transactions from the Transaction Definition Table are covered in the document and which are not covered

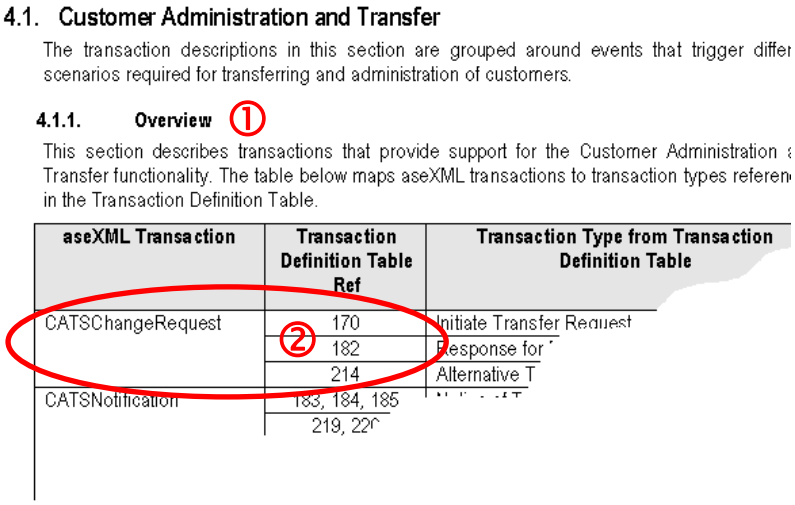
3. *Generic interfaces*

   Detailed protocols and mechanisms for handling messages and transactions are now described in the B2B Systems Architecture published as part of Participant Build Pack (PBP) 3. Refer to section 2.3.1 for the contents of the B2B Systems Architecture.

4. *Specific interfaces*

   The specific interfaces chapter is divided into several other chapters (level 2 headings), namely Customer Administration and Transfer, Meter Reads, Data Synchronisation and Basic Meter Installation & Removal. Note that a small number of interfaces overlap between these sections.

   Every chapter contains an overview section ① (level 3 heading) where aseXML transactions described in this chapter are cross-referenced to Transaction Definition Table ②.



4.1. Customer Administration and Transfer

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

4.1.1. Overview ①

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

aseXML Transaction	Transaction Definition Table Ref	Transaction Type from Transaction Definition Table
CATSChangeRequest	170	Initiate Transfer Request
	② 182	Response for
	214	Alternative T
CATSNotification	183, 184, 185	
	219, 22(	

Further, the chapter is split into a number of sub-sections (level 3 headings), where every sub-section represents a portion of a larger scenario or a complete scenario.

The scenario is represented firstly with an excerpt of the process flow diagram taken from Process Maps. The activity shown in these fragments are numbered so that the user can correlate them to the Process Maps. Also, the link between activities (or the process flow) in these fragments are labelled with the name of the corresponding aseXML transaction.

Taking the next step, the process flow diagram is translated into a UML sequence diagram ③ that illustrates the aseXML transaction exchange with respect to the order of events. The

table placed below the sequence diagram ④ summarises the presented communications and cross-references the transactions to the Process Maps.

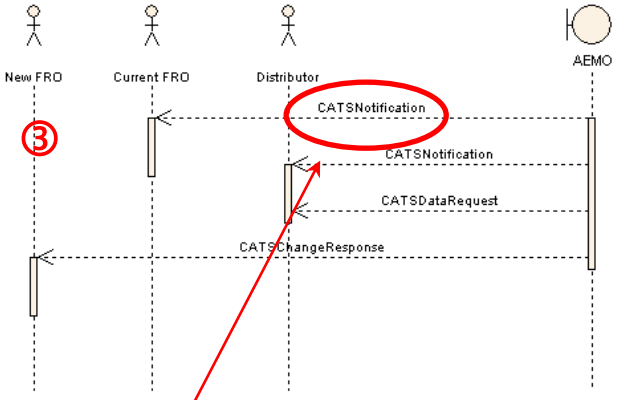


Figure 4-4. Processing Transfer Request Sequence Diagram

④

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
2	CATSNotification	Notification of Transfer	AEMO	Distrib	
3	CATSDataReq	Request			

Following the scenario descriptions with process flow fragments and sequence diagrams, all transactions mentioned in the scenario are individually specified. A sub-section (level 4 heading) is dedicated to every transaction.

4.1.2.1. Initiate Transfer Request Transaction

Transaction Definition Table cross-reference ⑤	• **170** Initiate Transfer Request
Trigger ⑥	A Market Participant as part of its process for establishing r customers triggers this interface.
Pre-conditions ⑦	Registered Market Participant
Post-conditions ⑧	If the Transaction Acknowledgment doc AEMO has created a new Change database, with a Change Reque
Transaction acknowledgment specific event codes ⑨	TBA
A transfer request is initiated responsible a C	

Transaction description starts with **Cross-reference**s ⑤ to the Transaction Definition Table - the transaction number is shown along with the transaction type as it is given in the Transaction Definition Table.

Following the cross-references, a **Trigger** ⑥ for the transaction is defined, i.e. a description of the event that has instigated the transaction.

If the conditions necessary for the transaction to occur are known, they are described in the paragraph labelled **Pre-conditions** ⑦. If either environment state or conditions that should be established immediately after successful generation of the transaction are known, then they will appear in the following paragraph labelled **Post-conditions** ⑧.

Event codes specific to the transaction being described are presented in the paragraph following the post-conditions. The paragraph is labelled **Transaction acknowledgment specific event codes** ⑨ and, at present, serves as a placeholder for future codes.

The data elements that must or may be carried inside the transaction are described after the specific event codes. The data elements represented as a two-part table.

Transaction:	CATSChangeRequest
Received From:	New FRO
Sent To:	AEMO

Data Element	Mandatory / Optional / Not Required	Usage
ChangeReasonCode	M	
ProposedDate	M	
MeterReadTypeCode		
ActualF		

The first part specifies the aseXML **Transaction** name along with the transaction source(s) and destination(s), whereas the second part lists all data elements required for this transaction. Every **Data Element** is associated with the **Mandatory/Optional** attribute used to indicate whether the data element must or may be present in the transaction. In some cases, the data element **Usage** column specifies the context in which the data element can be considered mandatory or optional.

Fields that labelled **NR** in the mandatory/optional column are not required inside the transaction, they are here only due to the fact that some of aseXML transactions defined for electrical industry and are being reused in gas industry as part of the harmonisation process.

It is important to understand that mandatory / optional attributes reflect the AEMO point of view on what data elements need to be supplied in accordance with the Transaction Definition Table.

Example Scenarios

This chapter represents an example of CATS scenario together with samples of XML files to be carried with every transaction shown in the example.

For the sake of completeness, the example scenario demonstrates both message and transaction exchange on the same diagram. In contrast, the transaction descriptions in the Specific Interfaces chapter only cover the transaction exchange.

2.3 Participant Build Pack 3

2.3.1 B2B Architecture

2.3.1.1 Overview

The *B2B Architecture* provides a comprehensive architectural overview of the FRC B2B System. It is intended to convey the significant architectural decisions that define the FRC B2B System. Using this document, participants will be able to make technology choices and design gateway interfaces to the FRC Hub. ebXML parameter settings along with guidelines for transaction grouping, and definitive mappings of aseXML into ebXML, are included in the *FRC B2B System Specifications.*

2.3.1.2 Structure

This document is organised into six sections: Introduction, Architectural Overview, Application Layer, Message Layer, Transport Layer and Security.

1. *Introduction*

   This chapter describes the purpose of the document and its intended audience. In addition, it brings together the list of documents that the PBP2 was based on.

2. *Architectural Overview*

   Gives the overview and a definition of the FRC B2B System architecture.

3. *Application Layer*

   This section describes functional and operational aspects of the aseXML Transaction Application. Topics include the obligations of the application, schema and schema validation, and interoperability. The section also describes the participant Communications Infrastructure, Public Key Infrastructure and the Message Service Interface, which will mediate between the Message Service Handler and these other applications / infrastructure-elements.

4. *Message Layer*

   The Message Service Handler (MSH) is the centrepiece of the messaging system in the FRC B2B System. The MSH is the implementation of the ebXML Message Service Specification. Packaging, routing, and delivery are dealt with in detail. The handler services, being Message Status Request, and MSH Ping are also described.

5. *Transport Layer*

   The Message Transport Interface section deals with the interface between the Message Service Handler and transport protocols to be supported. Network infrastructure is dealt with; topics here are the system topology, gateways, the hub, and expected network traffic.

6. *Security*

   Security issues are descriptively treated, an emphasis here is to give participants an understandable treatment of the issues involved as well as the expected implementation detail, and participant requirements. The three sections are Key Management, Encryption, and Digital Signature.

2.3.2 B2B Interface Definitions

2.3.2.1 Overview

The purpose of the *B2B Interface Definitions* included in Participant Build Pack (PBP) 3 is to define the behaviour of the business and IT systems as viewed from the outside. The definitions identify the manner in which the participants in the Victorian Gas Market will communicate with each other to manage their day-to-day business. The PBP will present the participant's systems as a “black box” highlighting only the necessary interfaces that are required for all participants to specify, build and test their systems.

2.3.2.2 Structure

This document is organised into two sections: Introduction and Specific Interfaces.

1. *Introduction*

   This chapter describes the purpose of the document and its intended audience. In addition, it brings together the list of documents that the PBP2 was based on.

2. *Specific Interfaces*

   The specific interfaces chapter is divided into several other chapters (level 2 headings), namely Meter Reads – Energy and Consumption, Service Orders, MIRN Discovery, Route and Site Information and Network Billing. Note that a small number of interfaces overlap between these sections.

   Each of these chapters is similar in content to the Specific Interfaces included in the Interface Definition Documented provided in PBP2. Please Refer to Section 2.2.3 for information on the contents of Interface Definitions included in PBP2.

2.3.3 B2B System Specification

2.3.3.1 Overview

This document provides specifications that are configuration and control settings that apply to the FRC B2B System. Some of these settings may become superseded from time to time throughout the life of the system, as the experience of participants and AEMO dictates. The specifications comprise standard service names, time intervals for message timeouts, standard participant identifiers, XML header mappings, and specific port and network addressing details.

These specifications are the variable implementation details that apply to the architecture defined in the *B2B Architecture*.

2.3.3.2 Structure

The document is organised in 4 chapters:

1. *General Information*

   This chapter defines gives a high level overview of the relationships between the contents of the aseXML header and the ebXML message elements along with timing considerations in the FRC B2B System.

2. *aseXML Header Content*

   This chapter contains information for formatting the aseXML header content specific to the FRC B2B System.

3. *ebXML Message Service Handler Configuration*

   This chapter describes the parameters to be used for Message Service Handler *Configuration*

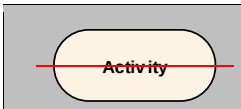
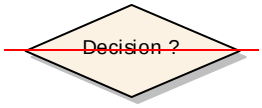
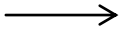
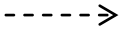
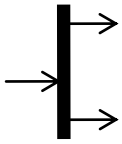
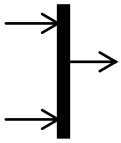
4. *Custom Network Information*

   This chapter defines the network ports configuration to be used with FRC B2B System.

3. Interpretation Guidelines

3.1 ~~UML Activity Diagrams~~ There is no section 3.1

~~Process flows are presented in the build packs as UML Activity Diagram notation. This notation very closely resembles the flow chart notation with addition of some useful features, like an ability to demonstrate processes that may be running in parallel. An activity diagram may include start and end nodes, decision points, synchronization bars and activities.~~

	~~AN ACTIVITY OR PROCESS. A "BUBBLE" MAY CONTAIN A REFERENCE NUMBER ASSIGNED TO THE ACTIVITY TO FACILITATE TRACEABILITY.~~
	~~A decision box provides an alternative in the activities or process flow. It has one entry and two or more outputs. Outputs normally will be labelled with the condition under which the alternative flow may occur. Conditions are enclosed in brackets, for example **[Yes]** or **[expired]**~~
	~~An entry point to the activity diagram. May be used as a reference point in conjunction with "end of processing" points to link parts of a large diagram.~~
	~~An end of processing point. May be used as a connection point to another diagram.~~
	~~A process flow~~
	~~An object flow~~
	~~A fork. This activity diagram feature allows representing the start of parallel processing.~~
	~~A join. This activity diagram element indicates the end of parallel processing or a synchronisation point.~~

~~Further information on UML Activity Diagrams and Enterprise Architects implementation of Activity Diagrams is available from Sparx Systems (http://www.sparxsystems.com.au).~~

3.2 UML Sequence Diagrams

All diagrams demonstrating interactions among participants / systems will utilise UML sequence diagrams as the primary notation.

A sequence diagram is a structured representation of behaviour as a series of sequential steps over time. It is used to depict work flow, message passing and how elements in general cooperate over time to achieve some result. Each sequence object is arranged in a horizontal sequence, with messages passing back and forward between objects. An example of a sequence diagram is presented below.

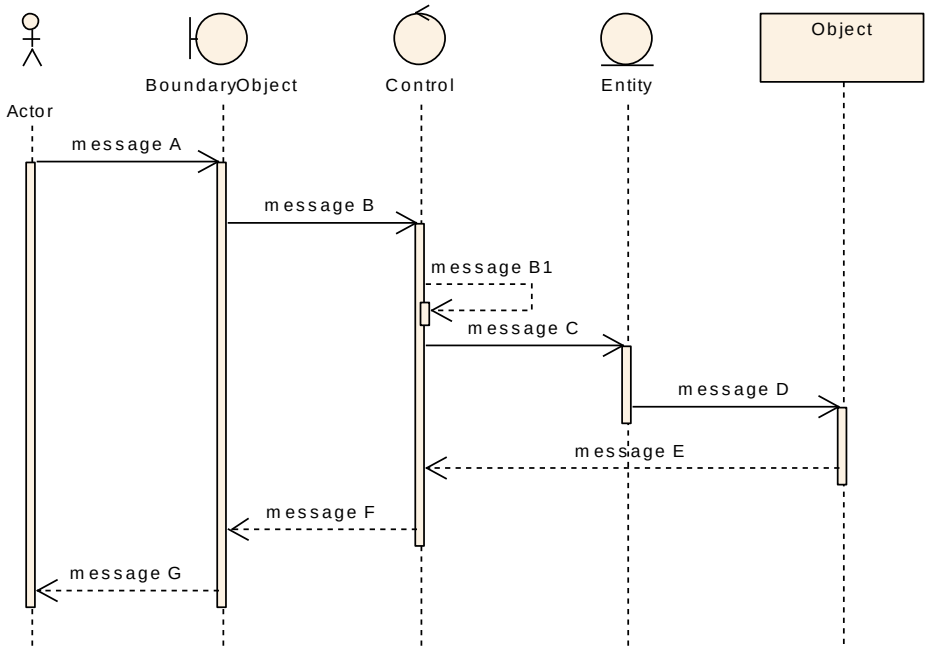


FIGURE 3-1. SEQUENCE DIAGRAM EXAMPLE

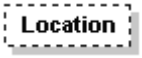
The following sentence can serve as an example on how to read this diagram: “The **Actor** sends **message A** to the **BoundaryObject** which, in turn, issues **message B** towards the **Control**. The **Control** performs some internal processing and, as the result, generates **message B1** to itself and then produces **message C** to the **Entity**, and so on.

An actor is a user of the system: either a human user, or machine or even another system. A boundary models some system boundary – typically, a user interface screen or another system front-end. A control represents a controlling entity or a manager: It organises and schedules other activities and objects. An entity is a store or persistence mechanism that captures the information or knowledge in a system. An object on these diagrams can be used instead of an actor to represent a system, sub-system or a component. A message can be associated with conditions, under which the message is only generated. The conditions can be described in plain English or using pseudo code and must be enclosed between square brackets.

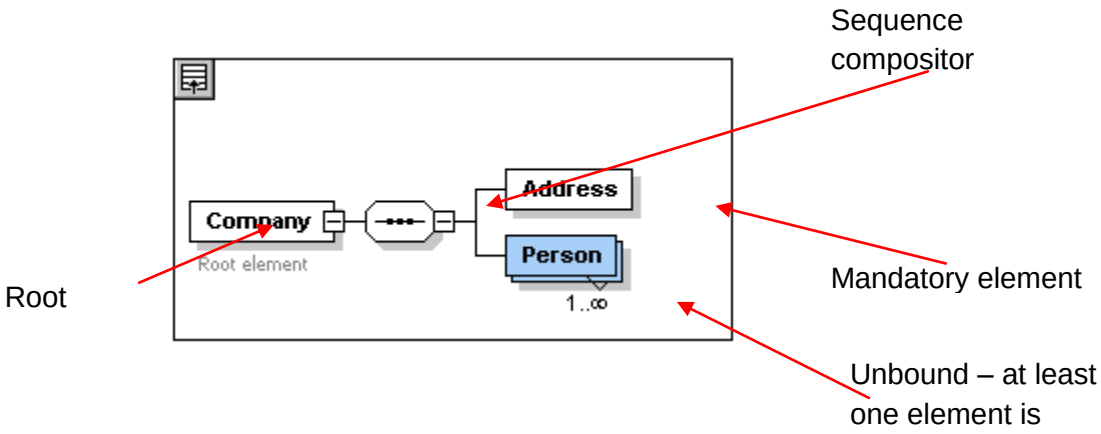
Further information on UML Sequence Diagrams and Enterprise Architects implementation of Sequence Diagrams is available from Sparx Systems (http://www.sparxsystems.com.au).

3.3 aseXML

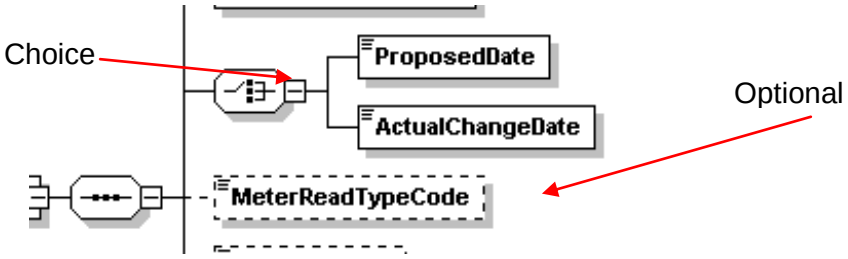
The notation used for generic aseXML message forms described in the Participant Build Packs is taken from XMLSpy tool. This tool has been utilised for designing the format of XML messages. The main elements that make up the XMLSpy notation are detailed below.

	**MANDATORY SINGLE ELEMENT**
	Mandatory single element, containing Parsed Character Data. The content may be simple content or mixed complex content.
	Single optional element.
	Mandatory multiple element.
	Mandatory multiple element containing child elements, a complex element

Here are some examples on how the notation will be utilised within this document. The figure below demonstrates the structure of an XML element called **Company**. It consists of a **sequence** of a number of mandatory elements, such as **Address** and at least one **Person** element.



Another example below shows a choice indicator implying that only one of the **ProposedDate** or **ActualChangeDate** elements following the indicator must be present in an aseXML compliant file.



Further information on XMLSpy Notation is available from Altova (http://www.altova.com/xmlspy.html) .

4. Modelling Tools

4.1 Enterprise Architect

All modelling within the build packs has been documented using the Unified Modelling Language (UML). UML is a notation and specification for visualizing, specifying, constructing, and documenting the artefacts of a software-intensive system. UML offers a standard way to write a system's blueprints, including conceptual items such as business processes and system functions as well as concrete items such as programming language statements, database schemas, and reusable software components. The build packs have utilised UML for the Activity Diagrams (Process Flows) and for Sequence Diagrams.

Enterprise Architect (EA) has been used as the UML modelling tool for all UML diagrams included within the build packs. EA is a graphical UML Computer Aided Software Engineering (CASE) tool for modelling, documenting and building object-oriented software systems. EA includes support for Activity Diagrams, Sequence Diagrams, as well as Use Case, Logical, Dynamic, Component and Physical models. In addition to standard UML elements, EA supports extensions for user interface design, requirements gathering and process modelling. It provides full traceability from the Gas Market Rules to Use Cases, Logical models, User Interfaces, Component models and Deployment models.

A description of the UML notation utilised within PBP2/3 documents has been included in Section 3. Further information on Enterprise Architect is available from Sparx Systems (http://www.sparxsystems.com.au). Sparx Systems also provide a tutorial on UML, which is available at http://www.sparxsystems.com.au/UML_Tutorial.htm.

4.2 XMLSpy

XMLSpy has been used to generate the aseXML Schema. Diagrams from XMLSpy have been included to depict the structure of aseXML Messages. A description of the XMLSpy notation used within PBP2 has been included in Section 3.3. Further information on XMLSpy is available from Altova (http://www.altova.com/xmlspy.html).