



ATIS STANDARD

ATIS-0404110-0029

**Unified Ordering Model - Access Service Request
(UOM-ASR)**

Volume I

Business Requirements

For An

Electronic Ordering Interface



As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global ICT companies to advance the industry's most pressing business priorities. ATIS' nearly 200 member companies are currently working to address the All-IP transition, network functions virtualization, big data analytics, cloud services, device solutions, emergency services, M2M, cyber security, network evolution, quality of service, billing support, operations, and much more. These priorities follow a fast-track development lifecycle — from design and innovation through standards, specifications, requirements, business use cases, software toolkits, open source solutions, and interoperability testing.

ATIS is accredited by the American National Standards Institute (ANSI). The organization is the North American Organizational Partner for the 3rd Generation Partnership Project (3GPP), a founding Partner of the oneM2M global initiative, a member of and major U.S. contributor to the International Telecommunication Union (ITU), as well as a member of the Inter-American Telecommunication Commission (CITEL). For more information, visit www.atis.org.

ATIS – 0404110-0029

Unified Ordering Model - Access Service Request (UOM-ASR) – Business Requirements for an Electronic Ordering Interface

Is an ATIS standard developed by the Ordering Solutions Committee - Access Service Ordering Subcommittee under the ATIS Ordering and Billing Forum (OBF)

Published by

Alliance for Telecommunications Industry Solutions

1200 G Street, NW, Suite 500

Washington, DC 20005

Copyright © 2016 by the Alliance for Telecommunications Industry Solutions, Inc. All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher. For information contact ATIS at 202-628-6380. ATIS is online at < <http://www.atis.org> >.

Limited Exception for “Customized” Forms. In recognition of the business needs and processes implemented by companies throughout the industry, ATIS grants the following limited exception to the copyright policy. The forms contained within, once “Customized,” may be reproduced, distributed and used by an individual or company provided that the following is placed on all “Customized” forms:

“This form/screen is based upon the Ordering and Billing Forum’s (OBF) industry consensus approved guidelines, found in the Access Service Ordering Guidelines (ASOG) document. The ASOG may be obtained by contacting the Alliance for Telecommunications Industry Solutions (ATIS) at 1-800-387-2199 or: <http://www.atis.org/docstore/default.aspx>.”

For purposes of this limited exception, the term “Customized” means, the modification, by a company, of an ASOG form to be issued to a trading partner to make it company specific by, for example, adding a company logo, graying-out optional fields not required by that specific issuing company, and converting into an electronic format/screen. This limited exception does not affect the ASOG document itself which remains copyrighted and may not be reproduced in whole or part.

Telcordia Technologies, Inc. was formerly known as Bell Communications Research, Inc. or Bellcore. Portions of this document, previously published by Bellcore, may still reflect the former name as it was embedded in the documentation under a prior license from the owners of the BELL trademark, which license has now expired. The use of this name does not suggest that Telcordia Technologies has licensed the names BELL, Bell Communications Research, or Bellcore for new uses or that the owners of the BELL trademark sponsor, endorse or are affiliated with Telcordia Technologies or its products.

Printed in the United States of America.

Notice of Disclaimer and Limitation of Liability

The information provided in this document is directed solely to professionals who have the appropriate degree of experience to understand and interpret its contents in accordance with generally accepted engineering or other professional standards and applicable regulations. No recommendation as to products or vendors is made or should be implied.

NO REPRESENTATION OR WARRANTY IS MADE THAT THE INFORMATION IS TECHNICALLY ACCURATE OR SUFFICIENT OR CONFORMS TO ANY STATUTE, GOVERNMENTAL RULE OR REGULATION, AND FURTHER, NO REPRESENTATION OR WARRANTY IS MADE OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. ATIS SHALL NOT BE LIABLE, BEYOND THE AMOUNT OF ANY SUM RECEIVED IN PAYMENT BY ATIS FOR THIS DOCUMENT, WITH RESPECT TO ANY CLAIM, AND IN NO EVENT SHALL ATIS BE LIABLE FOR LOST PROFITS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. ATIS EXPRESSLY ADVISES ANY AND ALL USE OF OR RELIANCE UPON THIS INFORMATION PROVIDED IN THIS DOCUMENT IS AT THE RISK OF THE USER.

UOM-ASR VOLUME I ASOG V54 SYNOPSIS OF CHANGES

UOM-ASR VOLUME I ASOG V54 CHANGES - ISSUES INCLUDED IN THIS SYNOPSIS	
ISSUE NUMBER	DESCRIPTION
3536	DLR: DLR Mechanized Specifications: Sunset the use of DLR Mechanized Specifications
3550	UOM-ASR: Complete Review of UOM Volume I, Appendix B

UOM-ASR VOLUME I ASOG V54 SYNOPSIS OF CHANGES

The following table depicts the type of change category definitions:		
TYPE OF CHANGE	=	CATEGORY DEFINITIONS
NEW	=	Adding a new field
REM	=	Removing an existing field
FN	=	Field/Tag name change (e.g., EXEMPT REASON changed to ER)
FORMAT	=	Field format change (e.g., moved to another section of the form, etc.)
DEF	=	Definition change
DEFN	=	Definition notes addition, change, deletion
VE	=	Valid entries addition, change, deletion
VEN	=	Valid entry notes addition, change, deletion
USE	=	Usage statement change
USEN	=	Usage notes addition, change, deletion
DC	=	Data characteristics change (e.g., change from numeric to alpha/numeric)
DCL	=	Data characteristics length change
DCN	=	Data characteristics note addition, change, deletion
EX	=	Example addition, change, deletion
EXN	=	Example notes addition, change, deletion
FORM	=	Changes made to the ASR forms (i.e., additions, rearrangements, field length changes or deletions of fields)
GLOSSARY	=	Identifies changes within the glossary sections (i.e., additions or deletions of fields)
TEXT	=	Identifies changes within the text of a section (i.e., additions or deletions of fields)

UOM-ASR VOLUME I ASOG V54 SYNOPSIS OF CHANGES

UOM-ASR VOLUME I – SYNOPSIS OF CHANGES FOR ASOG V54					
PRAC #	ISSUE #	Field/Section	Type Of Change	Description of Change	Field Length
n/a	3536	UOM-ASR (Section 3)	TEXT	Replaced non-NDM with mechanized	
n/a	3536	UOM-ASR (Section 3)	Graphics	Updated Figure 2 to remove references to DLR-MIS and update Deliverable Components.	
n/a	3536	UOM-ASR Business Requirements Process (Section 3.1)	TEXT	Removed references to DLR-MIS.	
n/a	3536	Design Layout Report Use Case (Section 9.4)	TEXT	Removed references to DLR-MIS.	
n/a	3550	UOM-ASR (Appendix B)	TEXT	Added introductory text and new “Process” column for all fields identifying associated process. Updated elements.	
n/a	3550	UOM-ASR (Appendix B.1)	TEXT	Created Appendix B.1 with existing elements not previously referenced.	
n/a	3550	UOM-ASR Jeopardy C/NR Notification Use Cases (Figure 34)	TEXT	Updated Use Case name to match existing references.	
n/a	3550	UOM-ASR Perform Service Availability Inquiry Use Case (Figure 12)	TEXT	Updated LOC 1 and LOC 2 to match existing references.	
NOTES:					

Table of Contents

SECTION	PAGE
TABLE OF CONTENTS	1
TABLE OF FIGURES	2
1 INTRODUCTION TO UOM	4
2 UML	6
2.1 INTRODUCTION.....	6
3 UOM-ASR	6
3.1 UOM-ASR BUSINESS REQUIREMENTS PROCESS.....	8
4 UOM-ASR HIGH LEVEL PROCESS OVERVIEW	9
4.1 UOM-ASR FUNCTIONAL STEPS	11
4.1.1 Description:.....	12
4.1.2 Process Steps (an example):.....	12
5 INTRODUCTION TO UOM-ASR PROCESS STEPS	14
5.1 UOM-ASR PRE-ORDERING ACTIVITIES	14
5.2 UOM-ASR SERVICE REQUEST PLACEMENT ACTIVITIES (SINGLE PROVIDER).....	15
5.3 UOM-ASR POST-CONFIRMATION NOTICE ACTIVITIES	16
5.3.1 Retrieve Service Request Information Activities	17
6 UOM-ASR USE CASES: HIGH LEVEL OVERVIEW	18
6.1 UOM-ASR ACTORS	18
6.2 HIGH LEVEL OVERVIEW OF THE UOM-ASR PROCESS USE CASES.....	19
7 UOM-ASR PRE-ORDERING USE CASES	20
7.1 LOCATION INQUIRY USE CASE	21
7.2 SERVICE AVAILABILITY INQUIRY USE CASE	22
7.3 CFA INQUIRY USE CASE	24
8 UOM-ASR SERVICE REQUEST PROCESS USE CASES	25
8.1 SERVICE REQUEST PLACEMENT/PRE-VALIDATION USE CASE.....	28
8.2 CLARIFICATION/NOTIFICATION REQUEST USE CASE.....	32
8.3 SERVICE REQUEST SUPPLEMENT USE CASE	33
8.4 CONFIRMATION NOTICE USE CASE	34
8.5 MEC EXCHANGE USE CASE.....	35
8.5.1 OEC Ready Inquiry Use Case.....	37
8.5.2 OEC Ready Response Use Case	38
8.5.3 OEC Information Inquiry Use Case.....	39
8.5.4 OEC Information Response Use Case	40
8.5.5 ASC-EC Confirmation Notification Use Case.....	41
8.6 MEC ERROR NOTIFICATION USE CASE.....	42
8.7 MEC CANCEL NOTIFICATION USE CASES.....	43
8.8 MEC DISCONNECT USE CASES	46
8.8.1 MEC Disconnect Receipt Inquiry Use Case.....	46
8.8.2 MEC Disconnect Receipt Response Use Case	47
9 UOM-ASR POST-CONFIRMATION USE CASES	48
9.1 JEOPARDY C/NR NOTIFICATION USE CASES	49
9.2 CUSTOMER RETRIEVE SERVICE REQUEST INFORMATION USE CASE.....	51

9.3	COMPLETION NOTIFICATION USE CASE	52
9.4	DESIGN LAYOUT REPORT NOTIFICATION USE CASE	53
APPENDIX A: UML INTRODUCTION		54
A.1	SCOPE	54
A.2	USE CASE(S).....	54
A.3	ACTORS	54
A.4	USE CASE	55
A.4.1	<i>Level of Detail</i>	55
A.5	USE CASE DIAGRAMS	55
A.6	USE CASE TECHNIQUES.....	58
A.6.1	<i>Identify all actors</i>	58
A.6.2	<i>Identify all use cases</i>	58
A.6.3	<i>Create use case diagram</i>	58
A.6.4	<i>Document all primary use cases using the use case template</i>	58
A.6.5	<i>Document the use case scenarios</i>	59
A.6.6	<i>Verify all use cases with users</i>	59
A.7	TIPS FOR ACTORS	59
A.8	TIPS FOR PRIMARY USE CASES	59
A.9	TIPS FOR USE CASE SCENARIOS	60
A.10	TIPS FOR USE CASE RELATIONSHIPS.....	60
A.11	SEQUENCE DIAGRAMS	60
A.12	STATE DIAGRAMS	61
A.13	ACTIVITY DIAGRAMS	62
A.13.1	<i>Uses for Activity Diagrams</i>	63
A.13.2	<i>Activity Diagram Technique</i>	63
APPENDIX B: UOM-ASR DATA DICTIONARY		66
APPENDIX B.1: UOM VALIDATION AND TRANSPORT DATA DICTIONARY		103
APPENDIX C: UOM-ASR FUNCTIONAL DATA MATRIX		104
APPENDIX D: UOM-ASR FATAL ERROR FUNCTIONAL DATA MATRIX		123
APPENDIX E: UNIFIED ORDERING - ASR SERVICE PACKAGES		125
10	BIBLIOGRAPHY	135

Table of Figures

FIGURE 1 – UOM-ASR PROCESS AND DOCUMENT DEVELOPMENT	5
FIGURE 2 – ACCESS ORDERING RELATIONSHIPS AND DELIVERABLES.....	7
FIGURE 3 – UOM-ASR LOGICAL STAGES.....	9
FIGURE 4 – UOM-ASR BUSINESS FUNCTIONS	11
FIGURE 5 – UOM-ASR PRE-ORDERING ACTIVITIES.....	14
FIGURE 6 – UOM-ASR SERVICE REQUEST PLACEMENT ACTIVITIES	15
FIGURE 7 – UOM-ASR POST- CONFIRMATION ACTIVITIES	16
FIGURE 8 – UOM-ASR CUSTOMER RETRIEVE SERVICE REQUEST INFORMATION ACTIVITIES	17
FIGURE 9 – UOM-ASR PROCESS BUSINESS REQUIREMENT USE CASES.....	19
FIGURE 10 – UOM-ASR PRE-ORDERING BUSINESS REQUIREMENT USE CASES.....	20
FIGURE 11 – UOM-ASR PERFORM LOCATION INQUIRY USE CASE	21
FIGURE 12 – UOM-ASR PERFORM SERVICE AVAILABILITY INQUIRY USE CASE.....	23
FIGURE 13 – UOM-ASR PERFORM CFA INQUIRY USE CASE	24
FIGURE 14 – UOM-ASR SERVICE REQUEST PROCESS BUSINESS REQUIREMENT USE CASES.....	27
FIGURE 15 – UOM-ASR PERFORM SERVICE REQUEST PLACEMENT/PRE-VALIDATION USE CASE	29
FIGURE 16 – UOM-ASR PERFORM FATAL ERROR PROCESSING USE CASE.....	30

FIGURE 17 – UOM-ASR PERFORM NON-FATAL ERROR PROCESSING USE CASE	31
FIGURE 18 – UOM-ASR PERFORM CLARIFICATION/NOTIFICATION REQUEST USE CASE	32
FIGURE 19 – UOM-ASR PERFORM SERVICE REQUEST SUPPLEMENT USE CASE	33
FIGURE 20 – UOM-ASR PERFORM CONFIRMATION NOTICE USE CASE	34
FIGURE 21 – UOM-ASR PERFORM MEC EXCHANGE USE CASE.....	35
FIGURE 22 – UOM-ASR PERFORM OEC READY INQUIRY USE CASE	37
FIGURE 23 – UOM-ASR PERFORM OEC READY RESPONSE USE CASE.....	38
FIGURE 24 – UOM-ASR PERFORM OEC INFORMATION INQUIRY USE CASE	39
FIGURE 25 – UOM-ASR PERFORM OEC INFORMATION RESPONSE USE CASE.....	40
FIGURE 26 – UOM-ASR PERFORM ASC-EC CONFIRMATION NOTIFICATION USE CASE	41
FIGURE 27 – UOM-ASR PERFORM MEC ERROR NOTIFICATION USE CASE.....	42
FIGURE 28 – UOM-ASR PERFORM MEC CANCEL NOTIFICATION USE CASE (CUSTOMER INITIATED)	43
FIGURE 29 – UOM-ASR PERFORM MEC CANCEL NOTIFICATION USE CASE (ASC-EC INITIATED).....	44
FIGURE 30 – UOM-ASR PERFORM MEC CANCEL NOTIFICATION USE CASE (OEC INITIATED)	45
FIGURE 31 – UOM-ASR PERFORM MEC DISCONNECT RECEIPT INQUIRY USE CASE.....	46
FIGURE 32 – UOM-ASR PERFORM MEC DISCONNECT RECEIPT RESPONSE USE CASE	47
FIGURE 33 – UOM-ASR POST-CONFIRMATION BUSINESS REQUIREMENTS USE CASE	48
FIGURE 34 – UOM-ASR PERFORM JEOPARDY C/NR NOTIFICATION USE CASE	49
FIGURE 35 – UOM-ASR PERFORM JEOPARDY C/NR NOTIFICATION CLEAR USE CASE	50
FIGURE 36 – UOM-ASR PERFORM CUSTOMER RETRIEVE SERVICE REQUEST INFORMATION USE CASE.....	51
FIGURE 37 – UOM-ASR PERFORM COMPLETION USE CASE.....	52
FIGURE 38 – UOM-ASR – DESIGN LAYOUT REPORT NOTIFICATION USE CASE.....	53
FIGURE 39 – USE CASE DIAGRAM	56
FIGURE 40 – USE CASE EXAMPLE	57
FIGURE 41 – SEQUENCE DIAGRAM.....	61
FIGURE 42 – STATE DIAGRAM.....	62
FIGURE 43 – ACTIVITY DIAGRAM – NO BRANCHING	63
FIGURE 44 – ACTIVITY DIAGRAM – WITH BRANCHING.....	64
FIGURE 45 – ACTIVITY DIAGRAM – WITH DECISION BOX.....	64
FIGURE 46 – ACTIVITY DIAGRAM – CONCURRENT PATHS	65

1 Introduction to UOM

The intent of Unified Ordering Model (UOM) is to develop a complete set of system documentation using an end-to-end structured methodology. The scope of UOM encompasses business requirements, analysis, design and implementation. Logically, these components are defined within the UOM in four volumes.

UOM-ASR Volume I

Provides an explanation of the business requirements and a conceptual overview of the solution. This conceptual overview is high-level. It defines “what” the user initially sees as the problem and “how” the user sees the business solution.

UOM Volume II

Analysis may be seen as using the requirements and developing a more detailed understanding of the scope. In effect, this step defines “what” the proposed technical resolution needs to support. It is a logical view of the proposed solution, which meets the business need, and it is not based on any particular software protocol.

UOM Volume III

The logical view of the proposed resolution (model), created in the *Analysis Phase*, is translated into the language appropriate for the selected implementation technology. Design focuses on “how” the implementation shall resolve the business requirements. It may be necessary to repeat the *Design Phase* if more than one implementation technology is selected.

UOM Volume IV

Resolves any outstanding implementation specifications that must be addressed before the system specifications can be realized using the selected implementation technology. As with the *Design Phase*, the *Implementation Phase* may also have to be repeated in order to provide support for multiple technologies.

UOM Process and Document Development

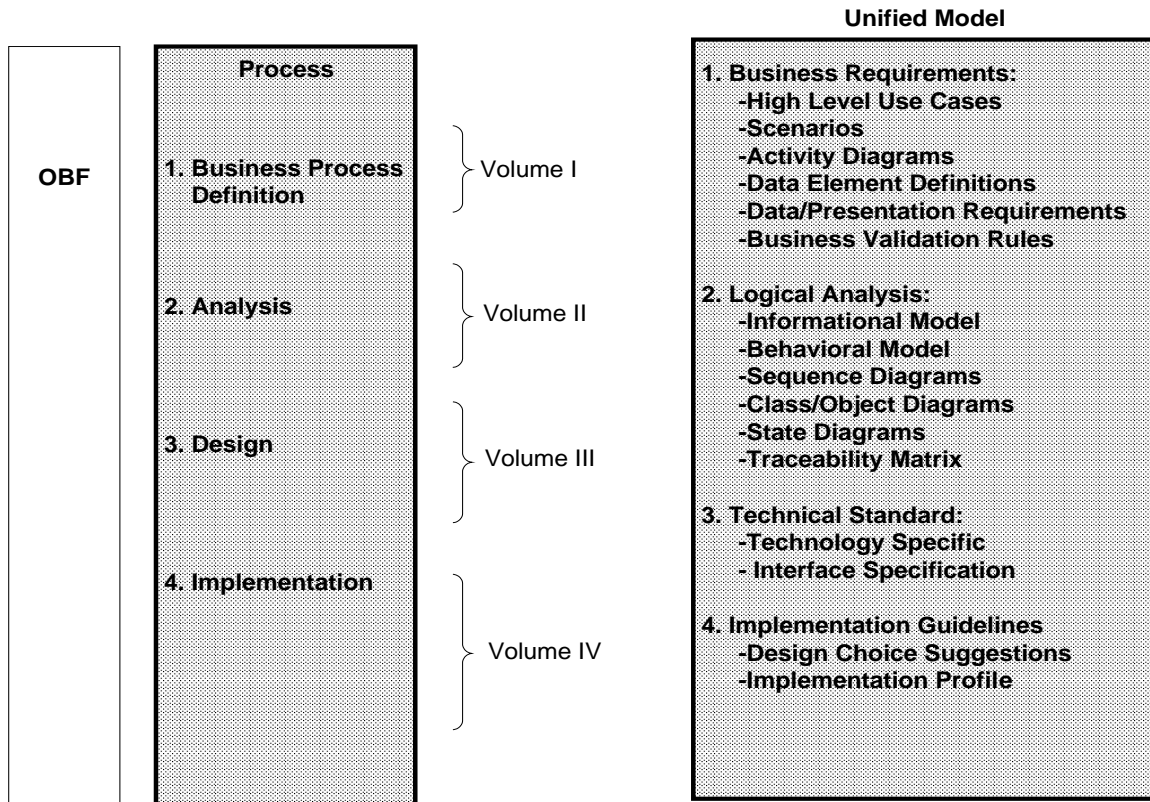


Figure 1 – UOM-ASR Process and Document Development

2 UML

2.1 Introduction

By definition a model is an abstraction. The Unified Modeling Language (UML) is the “visual” notation used within UOM Volume I. The UML supports several constructs that provide a consistent notation used to describe the UOM. The use of UML is for descriptive purposes. In some instances this Volume may not strictly adhere to existing UML specifications.

The UML is graphical in nature and is sometimes referred to as a visual specification language. The use of graphics helps in a.) abstracting design features and b.) showing the relationships between design elements.

The UML should be used to document all the relevant relationships that are important in describing this abstract view.

The constructs used in Volume I are:

- Use Cases that define the user's view of the system
- Activity Diagrams that can be used to describe process flows

3 UOM-ASR

The purpose of this document is to clearly define the business requirements for the electronic ordering of Access Service Requests (ASRs), including the exchange of data between providers in support of jointly provided (Meet Point) services, and the transmitting of Design Layout Report (DLR) information. As such, this document is referred to as UOM-ASR. It is the first volume, in the set of four, defined within the UOM process.

The UOM-ASR Volume I does not convey licensing right to non-COMMON LANGUAGE®¹ licensees to use the COMMON LANGUAGE code sets identified throughout the UOM-ASR Volume I document in their internal operations. Where COMMON LANGUAGE is provided, its intended use by non-COMMON LANGUAGE licensees is limited. Allowable uses will be specified by the COMMON LANGUAGE licensee, per their COMMON LANGUAGE contract.

The UOM-ASR draws its requirements from Access Service Request Ordering Guidelines (ASOG), Multiple Exchange Carriers Ordering and Design (MECOD), and Design Layout Report (DLR) documents. The ASOG, MECOD and DLR documents are developed and maintained by the Ordering Solutions Committee - Access Service Ordering Subcommittee within the Ordering and Billing Forum (OBF).

In effect, the UOM-ASR ties these requirement documents together, to clearly define the process necessary for ordering ASR services, exchanging information between providers when services are jointly provided, and transmitting DLR information via a mechanized process.

The UOM-ASR is able to tie these sets of requirements together through the use of the Unified Modeling Language (UML). The UML is a widely accepted methodology for defining requirements.

¹ COMMON LANGUAGE is a registered trademark and CLEI, CLLI, CLFI and CLCI are trademarks of Telcordia Technologies.