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Part 2: Unified Architecture Framework Profile (UAFP)

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Contents

Page

FOREWORD ..... **X**

PREFACE ..... **XI**

1 SCOPE **1**

1.1 INTRODUCTION 1
1.1.1 Overview *1*

2 ADDITIONAL INFORMATION **1**

2.1 LANGUAGE ARCHITECTURE 1
2.2 CORE PRINCIPLES 1
2.3 REPRESENTING STEREOTYPE CONSTRAINTS 2
2.3.1 Metaconstraint dependency *2*
2.3.2 Metarelationship dependency *3*
2.3.3 Stereotyped relationship dependency *4*

3 UAF STEREOTYPES **5**

3.1 UAF 5
3.1.1 UAF::Dictionary *5*
3.1.2 UAF::Parameters *6*
3.1.3 UAF::Metadata *19*
3.1.4 UAF::Strategic *31*
3.1.5 UAF::Operational *43*
3.1.6 UAF::Services *61*
3.1.7 UAF::Personnel *69*
3.1.8 UAF::Resources *76*
3.1.9 UAF::Security *99*
3.1.10 UAF::Projects *113*
3.1.11 UAF::Standards *122*
3.1.12 UAF::Actual Resources *125*
3.1.13 UAF::Summary and Overview *134*

4 UAF VIEW SPECIFICATIONS **141**

4.1 VIEW SPECIFICATIONS 141
4.1.1 View Specifications::Strategic *141*
4.1.2 View Specifications::Operational *147*
4.1.3 View Specifications::Services *155*
4.1.4 View Specifications::Personnel *162*
4.1.5 View Specifications::Resources *174*
4.1.6 View Specifications::Security *182*
4.1.7 View Specifications::Projects *189*
4.1.8 View Specifications::Standards *194*
4.1.9 View Specifications::Actual Resources *197*
4.1.10 View Specifications::Dictionary *199*
4.1.11 View Specifications::Requirements *200*
4.1.12 View Specifications::Sumary & Overview *201*
4.1.13 View Specifications::Information *202*
4.1.14 View Specifications::Parameters *203*

5 MEASUREMENT LIBRARY **207**

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TABLE OF FIGURES

Figure 2:1 – MapsToCapability Stereotype 2
Figure 2:2 – Connector Extension 2
Figure 2:3 – Capabilities Generalization 3
Figure 2:4 – Visualizing «metarelationship» 3
Figure 2:5 – Use of the AchievedEffect «stereotyped relationship» dependency 4
Figure 3:1 - Alias 5
Figure 3:2 - Definition 6
Figure 3:3 - SameAs 6
Figure 3:4 - ActualCondition 7
Figure 3:5 - ActualEnvironment 7
Figure 3:6 - ActualLocation 8
Figure 3:7 - ActualMeasurement 9
Figure 3:8 - ActualMeasurementSet 10
Figure 3:9 - ActualPropertySet 10
Figure 3:10 - Condition 11
Figure 3:11 - Environment 11
Figure 3:12 - EnvironmentProperty 12
Figure 3:13 - GeoPoliticalExtentType 13
Figure 3:14 - Location 14
Figure 3:15 - LocationHolder 15
Figure 3:16 - MeasurableElement 17
Figure 3:17 - Measurement 18
Figure 3:18 - MeasurementSet 18
Figure 3:19 - PropertySet 19
Figure 3:20 - ActualState 20
Figure 3:21 - ISO8601DateTime 20
Figure 3:22 - Exchange 21
Figure 3:23 - Resource 21
Figure 3:24 - Activity 22
Figure 3:25 - CapableElement 22
Figure 3:26 - IsCapableToPerform 23
Figure 3:27 - PerformsInContext 24
Figure 3:28 - ArchitectureMetadata 25
Figure 3:29 - DataModel 25
Figure 3:30 - Information 26
Figure 3:31 - Metadata 27
Figure 3:32 - Rule 28
Figure 3:33 - ArchitecturalReference 29
Figure 3:34 - Implements 30
Figure 3:35 - ActualEnterprisePhase 32
Figure 3:36 - Capability 33
Figure 3:37 - EnterpriseGoal 33
Figure 3:38 - EnterprisePhase 34
Figure 3:39 - EnterpriseVision 35
Figure 3:40 - VisionStatement 35
Figure 3:41 - WholeLifeEnterprise 36
Figure 3:42 - CapabilityRole 36
Figure 3:43 - StructuralPart 37
Figure 3:44 - TemporalPart 37

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Figure 3:45 - ActualEnduringTask....38
Figure 3:46 - CapabilityForTask....38
Figure 3:47 - EnduringTask....39
Figure 3:48 - AchievedEffect....39
Figure 3:49 - Achiever....40
Figure 3:50 - DesiredEffect....40
Figure 3:51 - Desirer....41
Figure 3:52 - Exhibits....41
Figure 3:53 - MapsToCapability....42
Figure 3:54 - OrganizationInEnterprise....42
Figure 3:55 - ArbitraryConnector....43
Figure 3:56 - ConceptItem....44
Figure 3:57 - ConceptRole....44
Figure 3:58 - HighLevelOperationalConcept....45
Figure 3:59 - KnownResource....45
Figure 3:60 - OperationalAgent....46
Figure 3:61 - OperationalArchitecture....47
Figure 3:62 - OperationalMethod....47
Figure 3:63 - OperationalParameter....48
Figure 3:64 - OperationalPerformer....48
Figure 3:65 - OperationalPort....49
Figure 3:66 - OperationalRole....50
Figure 3:67 - ProblemDomain....50
Figure 3:68 - OperationalConnector....51
Figure 3:69 - OperationalExchange....52
Figure 3:70 - OperationalExchangeItem....53
Figure 3:71 - OperationalInterface....54
Figure 3:72 - OperationalSignal....54
Figure 3:73 - OperationalSignalProperty....55
Figure 3:74 - OperationalActivity....55
Figure 3:75 - OperationalActivityAction....56
Figure 3:76 - OperationalActivityEdge....56
Figure 3:77 - OperationalControlFlow....57
Figure 3:78 - OperationalObjectFlow....57
Figure 3:79 - StandardOperationalActivity....58
Figure 3:80 - OperationalStateDescription....58
Figure 3:81 - OperationalMessage....59
Figure 3:82 - InformationElement....59
Figure 3:83 - OperationalConstraint....60
Figure 3:84 - SubjectOfOperationalConstraint....60
Figure 3:85 - ServiceSpecification....61
Figure 3:86 - ServiceMethod....62
Figure 3:87 - ServiceParameter....62
Figure 3:88 - ServicePort....63
Figure 3:89 - ServiceSpecificationRole....64
Figure 3:90 - ServiceConnector....65
Figure 3:91 - ServiceInterface....65
Figure 3:92 - ServiceFunction....66
Figure 3:93 - ServiceFunctionAction....66
Figure 3:94 - ServiceStateDescription....67

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Figure 3:95 - ServiceMessage 67
Figure 3:96 - ServicePolicy 68
Figure 3:97 - Consumes 68
Figure 3:98 - Organization 69
Figure 3:99 - OrganizationalResource 70
Figure 3:100 - Person 70
Figure 3:101 - Post 71
Figure 3:102 - Responsibility 71
Figure 3:103 - Command 72
Figure 3:104 - Control 72
Figure 3:105 - CompetenceToConduct 73
Figure 3:106 - Competence 74
Figure 3:107 - CompetenceForRole 74
Figure 3:108 - RequiresCompetence 75
Figure 3:109 - ResponsibleFor 76
Figure 3:110 - CapabilityConfiguration 77
Figure 3:111 - NaturalResource 77
Figure 3:112 - PhysicalResource 78
Figure 3:113 - ResourceArchitecture 78
Figure 3:114 - ResourceArtifact 79
Figure 3:115 - ResourcePerformer 79
Figure 3:116 - Software 80
Figure 3:117 - System 80
Figure 3:118 - ResourceMethod 81
Figure 3:119 - ResourceParameter 81
Figure 3:120 - ResourcePort 82
Figure 3:121 - ResourceRole 83
Figure 3:122 - ResourceConnector 85
Figure 3:123 - ResourceExchange 86
Figure 3:124 - ResourceExchangeItem 87
Figure 3:125 - ResourceInterface 88
Figure 3:126 - ResourceSignal 88
Figure 3:127 - ResourceSignalProperty 89
Figure 3:128 - Function 89
Figure 3:129 - FunctionAction 90
Figure 3:130 - FunctionControlFlow 91
Figure 3:131 - FunctionEdge 91
Figure 3:132 - FunctionObjectFlow 92
Figure 3:133 - ResourceStateDescription 92
Figure 3:134 - ResourceMessage 93
Figure 3:135 - DataElement 93
Figure 3:136 - ResourceConstraint 94
Figure 3:137 - SubjectOfResourceConstraint 94
Figure 3:138 - Forecast 95
Figure 3:139 - SubjectOfForecast 95
Figure 3:140 - Technology 96
Figure 3:141 - VersionedElement 96
Figure 3:142 - VersionOfConfiguration 97
Figure 3:143 - VersionSuccession 97
Figure 3:144 - WholeLifeConfiguration 98

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Figure 3:145 - ProtocolImplementation 99
Figure 3:146 - Asset 100
Figure 3:147 - OperationalAsset 100
Figure 3:148 - OperationalMitigation 101
Figure 3:149 - ResourceAsset 101
Figure 3:150 - ResourceMitigation 102
Figure 3:151 - SecurityEnclave 102
Figure 3:152 - AssetRole 103
Figure 3:153 - DataRole 103
Figure 3:154 - InformationRole 104
Figure 3:155 - EnhancedSecurityControl 104
Figure 3:156 - Enhances 105
Figure 3:157 - Protects 105
Figure 3:158 - ProtectsInContext 106
Figure 3:159 - SecurityProcess 106
Figure 3:160 - SecurityProcessAction 107
Figure 3:161 - ActualRisk 107
Figure 3:162 - Risk 108
Figure 3:163 - SecurityConstraint 108
Figure 3:164 - SecurityControl 109
Figure 3:165 - SecurityControlFamily 110
Figure 3:166 - SubjectOfSecurityConstraint 110
Figure 3:167 - Affects 111
Figure 3:168 - AffectsInContext 111
Figure 3:169 - Mitigates 112
Figure 3:170 - OwnsRisk 112
Figure 3:171 - OwnsRiskInContext 113
Figure 3:172 - Project 114
Figure 3:173 - ProjectMilestone 115
Figure 3:174 - ProjectMilestoneRole 115
Figure 3:175 - ProjectRole 116
Figure 3:176 - ProjectStatus 116
Figure 3:177 - ProjectTheme 117
Figure 3:178 - StatusIndicators 117
Figure 3:179 - MilestoneDependency 118
Figure 3:180 - ProjectSequence 118
Figure 3:181 - ProjectActivity 119
Figure 3:182 - ProjectActivityAction 119
Figure 3:183 - ActualProject 120
Figure 3:184 - ActualProjectMilestone 121
Figure 3:185 - ActualProjectMilestoneRole 121
Figure 3:186 - ActualProjectRole 122
Figure 3:187 - Protocol 123
Figure 3:188 - ProtocolStack 123
Figure 3:189 - Standard 124
Figure 3:190 - ProtocolLayer 124
Figure 3:191 - ActualOrganization 125
Figure 3:192 - ActualOrganizationalResource 126
Figure 3:193 - ActualPerson 126
Figure 3:194 - ActualPost 127

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Figure 3:195 - ActualResource 127
Figure 3:196 - ActualResponsibility 128
Figure 3:197 - ActualResponsibleResource 129
Figure 3:198 - FieldedCapability 129
Figure 3:199 - ActualOrganizationRole 130
Figure 3:200 - ActualResourceRole 130
Figure 3:201 - ActualResourceRelationship 131
Figure 3:202 - FillsPost 131
Figure 3:203 - ActualService 132
Figure 3:204 - ProvidedServiceLevel 133
Figure 3:205 - ProvidesCompetence 133
Figure 3:206 - RequiredServiceLevel 133
Figure 3:207 - OwnsProcess 134
Figure 3:208 - ArchitecturalDescription 135
Figure 3:209 - Architecture 136
Figure 3:210 - Concern 136
Figure 3:211 - Stakeholder 137
Figure 3:212 - UAFElement 138
Figure 3:213 - View 139
Figure 3:214 - Viewpoint 139
Figure 4:1 - Strategic Taxonomy 141
Figure 4:2 - Strategic Structure 142
Figure 4:3 - Strategic Connectivity 142
Figure 4:4 - Strategic States 143
Figure 4:5 - Strategic Constraints 144
Figure 4:6 - Strategic Roadmap: Deployment 145
Figure 4:7 - Strategic Roadmap: Phasing 146
Figure 4:8 - Strategic Traceability 147
Figure 4:9 - Operational Taxonomy 148
Figure 4:10 - Operational Structure 149
Figure 4:11 - Operational Connectivity 150
Figure 4:12 - Operational Processes 151
Figure 4:13 - Operational States 152
Figure 4:14 - Operational Interaction Scenarios 153
Figure 4:15 - Operational Constraints 154
Figure 4:16 - Operational Traceability 155
Figure 4:17 - Services Taxonomy 156
Figure 4:18 - Services Structure 157
Figure 4:19 - Services Connectivity 158
Figure 4:20 - Services Processes 159
Figure 4:21 - Services States 159
Figure 4:22 - Services Interaction Scenarios 160
Figure 4:23 - Services Constraints 160
Figure 4:24 - Services Roadmap 161
Figure 4:25 - Services Traceability 162
Figure 4:26 - Personnel Taxonomy 162
Figure 4:27 - Personnel Sructure 163
Figure 4:28 - Personnel Connectivity 164
Figure 4:29 - Personnel Processes 165
Figure 4:30 - Personnel States 166

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Figure 4:31 - Personnel Interaction Scenarios 167
Figure 4:32 - Personnel Constraints: Competence 168
Figure 4:33 - Personnel Constraints: Drivers 169
Figure 4:34 - Personnel Constraints: Performance 170
Figure 4:35 - Personnel Roadmap: Availability 171
Figure 4:36 - Personnel Roadmap: Evolution 172
Figure 4:37 - Personnel Roadmap: Forecast 173
Figure 4:38 - Personnel Traceability 173
Figure 4:39 - Resources Taxonomy 174
Figure 4:40 - Resources Structure 175
Figure 4:41 - Resources Connectivity 176
Figure 4:42 - Resources Processes 177
Figure 4:43 - Resources States 178
Figure 4:44 - Resources Interaction Scenarios 178
Figure 4:45 - Resources Constraints 179
Figure 4:46 - Resources Roadmap: Evolution 180
Figure 4:47 - Resources Roadmap: Forecast 181
Figure 4:48 - Resources Traceability 182
Figure 4:49 - Security Taxonomy 183
Figure 4:50 - Security Structure 184
Figure 4:51 - Security Connectivity 185
Figure 4:52 - Security Processes 186
Figure 4:53 - Security Constraints 187
Figure 4:54 - Security Traceability 188
Figure 4:55 - Project Taxonomy 189
Figure 4:56 - Project Structure 190
Figure 4:57 - Project Connectivity 191
Figure 4:58 - Project Processes 192
Figure 4:59 - Project Roadmap 193
Figure 4:60 - Project Traceability 194
Figure 4:61 - Standards Taxonomy 195
Figure 4:62 - Standards Structure 196
Figure 4:63 - Standards Roadmap 196
Figure 4:64 - Standards Traceability 197
Figure 4:65 - Actual Resources Structure 198
Figure 4:66 - Actual Resources Connectivity 199
Figure 4:67 - Actual Resources Traceability 199
Figure 4:68 - Dictionary 200
Figure 4:69 - Requirements 201
Figure 4:70 - Summary & Overview 201
Figure 4:71 - Information Model 202
Figure 4:72 - Parameters: Environment 203
Figure 4:73 - Parameters: Measurements 204

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Foreword

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This document was prepared by the Object Management Group (OMG) (as Unified Architecture Framework [UAF] Domain Metamodel, Version 1.1) and drafted in accordance with its editorial rules. It was adopted, under the JTC 1 PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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Preface

OMG

Founded in 1989, the Object Management Group, Inc. (OMG) is an open membership, not-for-profit computer industry standards consortium that produces and maintains computer industry specifications for interoperable, portable and reusable enterprise applications in distributed, heterogeneous environments. Membership includes Information Technology vendors, end users, government agencies and academia. OMG member companies write, adopt, and maintain its specifications following a mature, open process. OMG's specifications implement the Model Driven Architecture® (MDA®), maximizing ROI through a full-lifecycle approach to enterprise integration that covers multiple operating systems, programming languages, middleware and networking infrastructures, and software development environments. OMG's specifications include: UML® (Unified Modeling Language™); CORBA® (Common Object Request Broker Architecture); CWM™ (Common Warehouse Metamodel); and industry-specific standards for dozens of vertical markets. More information on the OMG is available at *https://www.omg.org/*.

OMG Specifications

As noted, OMG specifications address middleware, modeling and vertical domain frameworks. All OMG Specifications are available from this URL: *https://www.omg.org/spec*

Specifications are organized by the following categories:

Business Modeling Specifications

Middleware Specifications

- CORBA/IIOP
- Data Distribution Services
- Specialized CORBA IDL/Language Mapping Specifications

Modeling and Metadata Specifications

- UML, MOF, CWM, XMI
- UML Profile Specifications

Platform Independent Model (PIM) - Platform Specific Model (PSM) - Interface Specifications

- CORBAServices
- CORBAFacilities
- OMG Domain Specifications
- CORBA Embedded Intelligence Specifications
- CORBA Security Specifications

All of OMG's formal specifications may be downloaded without charge from our website. (Products implementing OMG specifications are available from individual suppliers.) Copies of specifications, available in PostScript and PDF format, may be obtained from the Specifications Catalog cited above or by contacting the Object Management Group, Inc. at: OMG Headquarters 109 Highland Avenue, Needham, MA 02494 USA Tel: +1- 781-444-0404 Fax: +1-781-444-0320 Email: *pubs@omg.org*

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Information technology — Object Management Group Unified Architecture Framework (OMG UAF) —

Part 2: Unified Architecture Framework Profile (UAFP)

1 Scope

1.1 Introduction

1.1.1 Overview

This document is a normative supplement to the UAF DMM document (c4i/19-06-16).

This document specifies a UAF profile to enable practitioners to express architectural model elements and organize them in a set of domains, model kinds, and view specification (specified in the UAF DMM) that support the specific needs of end users in defense and commercial industry.

UAFP 1.1 defines a set of stereotypes and model elements and relationships to satisfy the requirements of the UPDM 3.0 RFP and the UAF DMM. The profile specification documents the language architecture in terms of UML profiling mechanism.

A number of UAFP stereotypes inherit from SysML stereotypes where reuse of SysML semantics is necessary. The reusable portions of the SysML specification are not included directly in the specification but are made explicit through the stereotype inheritance.

2 Additional Information

2.1 Language Architecture

The UAFP specification reuses a subset of UML 2.5.1 and SysML 1.5 and provides additional extensions needed to address requirements in the UPDM 3.0 RFP Mandatory Requirements. Those requirements form the basis for this document. This document describes the language architecture in terms of the UML 2.5.1 and SysML 1.5 parts that are reused and the defined UML 2.5.1 extensions; and specifies how to implement UAFP. This clause explains design principles and how they are applied to define the UAFP language architecture.

2.2 Core Principles

The fundamental design principles for UAFP are:

- **Requirements-driven**: UAFP is intended to satisfy the requirements of the UPDM 3.0 RFP Mandatory Requirements.
- **UAF Domain Metamodel (DMM) driven**: The DMM served as a foundation for profile development.
- **Reuse of existing specifications**: UAFP reuses UML/SysML wherever practical to satisfy the requirements of the UAFP 3.0 RFP and leverage features from both UML and SysML to provide a robust modeling capability. Consequently, UAFP is intended to be relatively easy to implement for vendors who support UML 2.x and SysML 1.x.
- **Compliance levels**: UAFP has a single compliance level based upon a combination of the reuse of UML and SysML elements. It is expected that the views that are created as result of this profile have frames that reflect the underlying SysML diagram type that is used as the basis for the view. It also expected that the graphical notation used to display elements within those views correspond to the standard SysML graphical notation of the SysML/UML metaclass that the stereotype extends.
- **Interoperability**: UAFP inherits the XMI interchange capability from UML. The UAFP specification reuses a subset of UML 2.5.1 and provides additional extensions needed to address requirements in the UPDM 3.0 RFP Mandatory Requirements.

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