ENTERPRISE ARCHITECTURE

Model Your Organization with Enterprise Architecture

As organizations look into Service-Oriented Architecture (SOA) to make their infrastructure more agile, they increasingly employ models to get a better understanding of how all the parts of their agile enterprise work together. A complete collection of models describing aspects of an organization is commonly called an "Enterprise Architecture" or EA. About a quarter of all enterprise architectures are based on the Zachman Framework, which provides the fundamental concept, but no formalism. DoDAF, MODAF and their combination in UAF® provide a strong formal framework with a broad conceptual coverage and full Model Driven Architecture® (MDA®) integration. Regardless of the choice of framework, underlying models must be capable of representing all aspects of the EA in a consistent and integrated way, from requirements and business rules all the way to detailed specifications for implementation and operational behavior.

The OMG family of modeling languages and domain specific modeling specifications provide the EA with a powerful toolbox, implemented in a wide collection of tools. All OMG modeling specifications are rooted in MOF™, the Meta-Object Facility™ and provide the standard XML Metadata Interchange™ (XMI®) model-exchange format. More specific languages and models, including the Unified Modeling Language™ (UML®), are built on top of this platform, fully interoperable, and are the foundation of the OMG MDA.

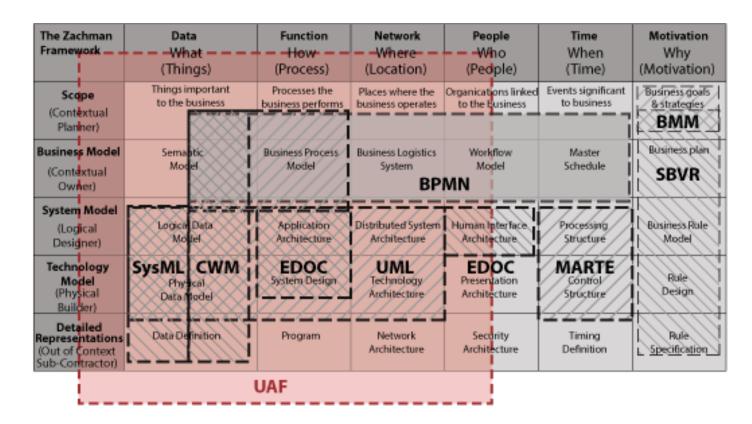## Populating the Zachman Framework with OMG Modeling Specifications

There is no one-size-fits-all template for EAs. However, the Zachman Framework is widely acknowledged to encompass all the concepts necessary to describe an organization. OMG specifications provide modeling support for almost every cell in Zachman's classic two-dimensional architecture classification. This data sheet lists several relevant OMG specifications (continued on other side):

G1010618

- **Business Motivation Metamodel™ (BMM™) -** specifically designed for Implementing EA with documenting goals, strategy and business plans and for relating these goals and plans to associated rules and processes.
- **Business Process Modeling Notation™ (BPMN™)** - enables the capture of end-to-end business processes through a standard diagrammatic notation that is readily understandable by all business stakeholders from business analysts to system developers.
- **Enterprise Distributed Object Computing (EDOC™) –** comprised of four technology independent UML models used to model Collaboration, Composable Components, Events, and Business Process. They enable the modeling of concepts that, in the absence of EDOC, had to be specified programmatically in terms of the use of services such as events/ notifications, support for relationships and persistence.
- **Unified Modeling Language (UML) –** integrated family of 13 graphical modeling notations, designed to represent different aspects of software/system design during the development process including: system structure (classes, objects, components, deployment…) behavior (use cases, activities, and state machine diagrams), and interaction (sequencing, communication, timing, and Interaction overview).
- **Unified Architecture Framework® (UAF®) -** unified combination of the architecture frameworks from the U.S. Department of Defense Architecture Framework (DoDAF) and the British Ministry of Defence Architecture Framework (MODAF) is the most powerful Enterprise Architecture framework available. It provides fully integrated support from initial concepts all the way to organizational, operational and implementation details. It is widely supported by dozens of sophisticated tools. The UML profiling mechanism allows the creation of specialized UML-based languages for representing a wider range of enterprise concerns.
- **UML Profile for Modeling Real-Time and Embedded systems (MARTE)** - extends UML to model and manipulate time and temporal aspects of (primarily real-time) computer systems. It accommodates both hardware and software system aspects spanning development activities from specification through design, verification, code generation, etc.

109 Highland Ave, Needham, MA 02494 USA • Phone: +1 781-444-0404 • Fax: +1 781-444-0320;
Evening Star Building, Regis Group Office #358 • 1101 Pennsylvania Ave., Washington, D.C., 20004 USA • Phone: +1 703-231-6335

G1010618

- **Semantics of Business Vocabulary and Business Rules™ (SBVR™) -** provides an elegant way to represent business vocabulary, business facts and business rules as precise logic expressed in formal natural language from an organizational perspective as opposed to an IT perspective It is aligned with OMG Business Process Management specifications, such as Business Process Modelling Notation (BPMN). Standardizing vocabulary through SBVR enables bridging between business and IT disciplines.
- **Common Warehouse Metamodel (CWM™) -** provides a formal model of data for the enterprise. It enables the interchange of business intelligence metadata among data warehouse tools, platforms, and repositories. Using CWM, developers can generate specific data models, including relational tables, records or structures, OLAP, XML and multidimensional database designs. OMG is also working on the Information Management Metamodel (IMM™), an extensive revision to CWM.

The Zachman Framework	Data What (Things)	Function How (Process)	Network Where (Location)	People Who (People)	Time When (Time)	Motivation Why (Motivation)
Scope (Contextual Planner)	Things important to the business	Processes the business performs	Places where the business operates	Organizations linked to the business	Events significant to business	Business goals & strategies **BMM**
Business Model (Contextual Owner)	Semantic Model	Business Process Model	Business Logistics System	Workflow Model	Master Schedule	Business plan **SBVR**
System Model (Logical Designer)	Logical Data Model	Application Architecture	Distributed System Architecture	Human Interface Architecture	Processing Structure	Business Rule Model
Technology Model (Physical Builder)	**SysML CWM** Physical Data Model	**EDOC** System Design	**UML** Technology Architecture	**EDOC** Presentation Architecture	**MARTE** Control Structure	Rule Design
Detailed Representations (Out of Context Sub-Contractor)	Data Definition	Program	Network Architecture	Security Architecture	Timing Definition	Rule Specification

BPMN

UAF

About OMG

The Object Management Group® (OMG®) is an international, open membership, not-for-profit computer industry standards consortium with representation from government, industry and academia. OMG Task Forces develop enterprise integration standards for a wide range of technologies and an even wider range of industries. OMG modeling standards enable powerful visual design, execution and maintenance of software and other processes. Visit **www.omg.org** for more information.

For a listing of all OMG trademarks, visit https://www.omg.org/legal/tm_list.htm. All other trademarks are the property of their respective owners.

109 Highland Ave, Needham, MA 02494 USA • Phone: +1 781-444-0404 • Fax: +1 781-444-0320; Evening Star Building, Regis Group Office #358 • 1101 Pennsylvania Ave., Washington, D.C., 20004 USA • Phone: +1 703-231-6335

G1010618