



# Service Oriented Architecture SIG

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## OMG EDA Standards Review

Presented by

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# EDA/CEP is Hard Enough without Standards

What you need is a  
Complex Event  
Processing solution  
with fully Immutable  
Event Objects and  
Distributed Tuple  
Management



CEP Evangelist

I wonder where  
I can get an  
“Easy” Event  
Processor



CIO



# The Object Management Group (OMG)

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- ❑ OMG has been an international, open membership, not-for-profit computer industry consortium since 1989. Any organization may join OMG and participate in our standards-setting process. Our one-organization-one-vote policy ensures that every organization, large and small, has a effective voice in our process.
- ❑ OMG's modeling standards, including the Unified Modeling Language™ (UML®) and Model Driven Architecture® (MDA®), enable powerful visual design, execution and maintenance of software and other processes, including IT Systems Modeling and Business Process Management.
- ❑ OMG's middleware standards and profiles are based on the Common Object Request Broker Architecture (CORBA®) and support a wide variety of industries.
- ❑ Dozens of standards organizations and other consortia maintain liaison relationships with OMG including OASIS, Open Group, and the ISO. The OMG is an ISO PAS submitter, able to submit our specifications directly into ISO's fast-track adoption process. OMG's UML, MOF™ and Interface Definition Language (IDL™) standards are already ISO standards and ITU-T recommendation.

The SOA SIG provides a forum for discussion of SOA definition, methodologies, models, and both business and technical implications

*Primary goals of the SIG are:*

- ❑ To support an MDA approach to SOA that links architectural, business and technology views of Services, including Business Process Management (BPM) and Event-Driven Architecture (EDA)
- ❑ Identify and foster development of OMG modeling standards for SOA that integrate with and complement standards developed by other organizations such as W3C, Open Group and OASIS
- ❑ To improve awareness and understanding of SOA by OMG members
- ❑ To coordinate SOA related efforts within OMG
- ❑ Information regarding group can be found at <http://www.omg.com/soa>

## EDA Subgroup

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Although interest in EDA is beginning to emerge, its relationship with SOA remains ambiguous at best. EDA has been perceived by some as a part/subset of SOA as well as complementary to SOA. The OMG SOA SIG has established a subgroup to:

- ❑ Promote the understanding of EDA and its relationship with SOA and BPM
- ❑ Develop a harmonized EDA/CEP ontology and its relationship with Services and Business Processes
- ❑ Recommend and promote development and/or enhancement of standards to enable modeling of Events and their relationship with Services and Business Processes
- ❑ Liaison with other OMG Groups to ensure their development of standards addresses the EDA aspects as appropriate
- ❑ Liaison with other standards bodies, vendors, analyst groups and end-user communities to reuse their work as appropriate as well as educate them about the work being done by OMG

### UML v2.0

- State and Timing diagrams
- Agent UML

Persistent State Service Specification

CORBA Event Service Specification

SysML

Data Distribution Service

Business Process Modeling Notation (BPMN)

UML Profile for Enterprise Distributed Object Computing (EDOC)

Notification Services Specification

- ❑ As a first step towards its stated goals, EDA Subgroup has developed a RFI (Request for Information) to gather information from a broad spectrum of potentially interested parties.
  
- ❑ The information requested by this RFI is divided into the following categories:
  - Event and EDA Definitions
  - Existing Research and Standards work regarding EDA/CEP
  - EDA / CEP Modeling Standards and Requirements
  - Event Driven Architecture Implementation
  - Relationships between EDA and SOA
  - Relationships between EDA and BPM
  
- ❑ The current RFI can be obtained at:
  - <http://www.omg.org/cgi-bin/doc?soa/06-09-02>

- ❑ Improved EDA/CEP modeling
  - Enhancements to UML/MDA
- ❑ Extend the Reusable Asset Specification (RAS) to support EDA/CEP
- ❑ Event definition and Metamodel
- ❑ Event Ontology using ODM
- ❑ Causality relationship Metamodel
- ❑ Events traceability to Services, causality in execution and governance
- ❑ Integration of EDA into Agent standards



# UML v2.0 State Definitions

## ❑ State

- A state is a condition during the life of an object during which it satisfies some condition, performs some activity, or waits for some external event

## ❑ Event

- An event is the specification of a significant occurrence. For a state machine, an event is the occurrence of a stimulus that can trigger a state transition

## ❑ Transition

- A transition is a relationship between two states indicating that an object in the first state will, when a specified set of events and conditions are satisfied, perform certain actions and enter the second state. A transition has:
  - Transition Components
    - A source state
    - An event trigger
    - An action
    - A target state

## ❑ Action

- An action is an executable, atomic (with reference to the state machine) computation.
  - Actions may include
    - operations, the creation or destruction of other objects, or the sending of signals to other objects (events).

## ❑ Substates

- A substate is a state that is nested in another state. A state that has substates is called a composite state. A state that has no substates is called a simple state. Substates may be nested to any level.