



# SOA Standards Landscape and Value

---

Navigating the SOA Standards Landscape Around  
Architecture

aka: 'SOA Harmonization'

Heather Kreger, IBM, Editor and Presenter

Jeff Estefan, NASA/Jet Propulsion Laboratory, Editor

July 21, 2009



# Agenda

---

- Goals
- Types of standards positioned
- Overview of and Guidance on Standards
- Positioning of standards
- SOA and SOA Governance Core concepts
- Conclusion



# Goals: SOA Harmonization Group: So many questions

---

*Problem – There are so many standards on SOA. What are they all for and which ones do I use?*

- Questions we were all being asked:
  - What standards are out there?
  - How are these standards meant to be used?
  - How do these specifications relate to each other?
  - Are these standards in conflict?
  - Which ones are best for my situation?
  - Should I wait till the dust settles?

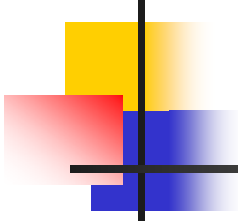
*Solution – A joint whitepaper answering these questions*

- Goal: Readers of these standards should get the same fundamental understanding of SOA ... Regardless of which standard they start with.

# Goals: SOA Harmonization Group: Answering the questions

- The Open Group, OASIS, and OMG Joint whitepaper
  - The Open Group SOA WorkGroup
  - OASIS SOA Reference Model TC
  - OMG SoaML, SOA Governance RFP
- Scope: Architectural Standards:
  - Reference Models,
  - Reference Architectures
  - Ontologies
  - Governance
  - Maturity Models
  - Modelling Languages
- Out of Scope: SOA implementation, infrastructure, Business Architecture, information modelling standards





# Developers of this Whitepaper

## The Open Group, OASIS, OMG

---

### The Open Group

- Ali Arsanjani, IBM
- Anthony Carrato, IBM
- Carleen Christner, HP
- Eric Dabbaghchi, MITRE
- Jorge Diaz, IBM
- Ahmed Fattah, IBM
- Leonard Fehskens, The Open Group
- Mats Gejnevall, Capgemini
- Chris Greenslade, CLARS Ltd.
- Chris Harding, The Open Group
- Ed Harrington, Model Driven Solutions (and OMG)
- Allen Jones, Boeing
- Heather Kreger, IBM (and OASIS), Editor
- Nikhil Kumar, Applied Technology Solutions
- Robert Laird, IBM
- Milena Litoiu, CGI
- Sinan Madenli, CGI
- Bruce Miner, Direct Energy

### OASIS

- Bob Ellinger, Northrop Grumman
- Jeff Estefan, NASA/Jet Propulsion Laboratory, Editor
- Ken Laskey, MITRE
- Francis McCabe
- Duane Nickull, Adobe

### OMG

- Jim Amsden, IBM
- James Odell, CSC (and OASIS)
- Harsh Sharma, Metlife



# Goals of this joint paper

---

- Convey the same fundamental concept of SOA regardless of starting point
- Help navigate the myriad of overlapping standards
- Differentiate and select appropriate specifications to meet needs
- Outline the agreement on core SOA and SOA governance concepts
- Establish collaboration between the standards bodies
- Encourage consistency across the standards addressing the various aspects of SOA
- Establish relative positioning evolve standards to reduce overlaps and gaps

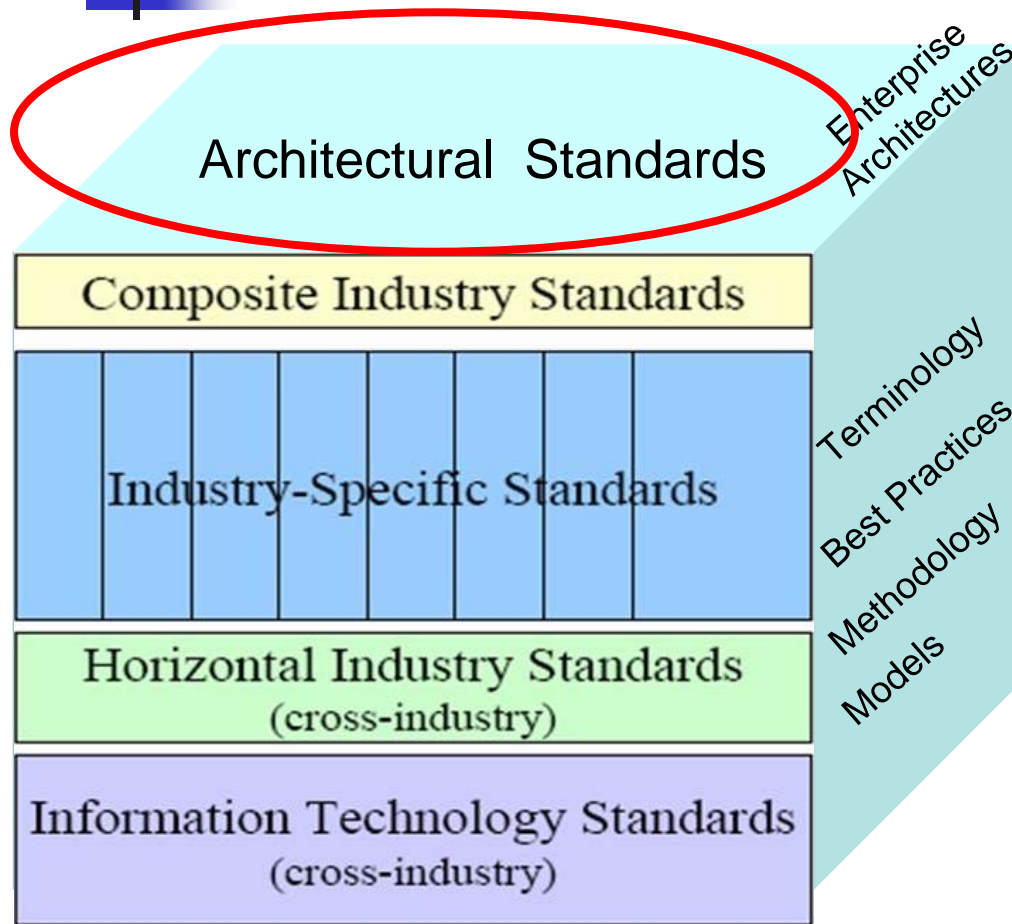


# Some non-goals, ideas for future collaboration

---

- Complete picture of the SOA open standards landscape
  - Limited to core SOA concepts and architecture being proposed by these open standards organizations
- An ontology of architectures
  - The term architecture is used informally, consistent with the referenced standards
- Define SOA, its value proposition, or usage scenarios
  - The relative positioning of a set of standards offered by the three organizations
- The domain of applicability of SOA for business and/or IT
  - How the referenced standards achieve SOA goals, whatever they are
- Resolution or actions to resolve overlaps and inconsistencies between the standards
  - Collaboration to evolve standards that may be more aligned and complimentary
- information as a service, data-driven approaches to service identification, or business processes for identifying, implementing or using services
  - Topics for follow-on work
- Issues or alignment, integration and interchange opportunities around how the standards are expressed
  - Topics for follow-on work

# Our Target: Architectural Standards



## Architectural standards:

- Address customer architecture and deployment considerations
- Directed toward IT architects
- Oriented toward consistency rather than interoperability

## Infrastructure Standards:

- Normative
- Product driven
- Conformance
- Interoperability focused





# The Value of Standards for SOA

---

- Vendor neutral
- Common foundation of understanding
  - no mapping vendor terminology
- Best Practices from multiple vendors
- Reduces risk
  - knowledge more mature/validated
  - more vendor options

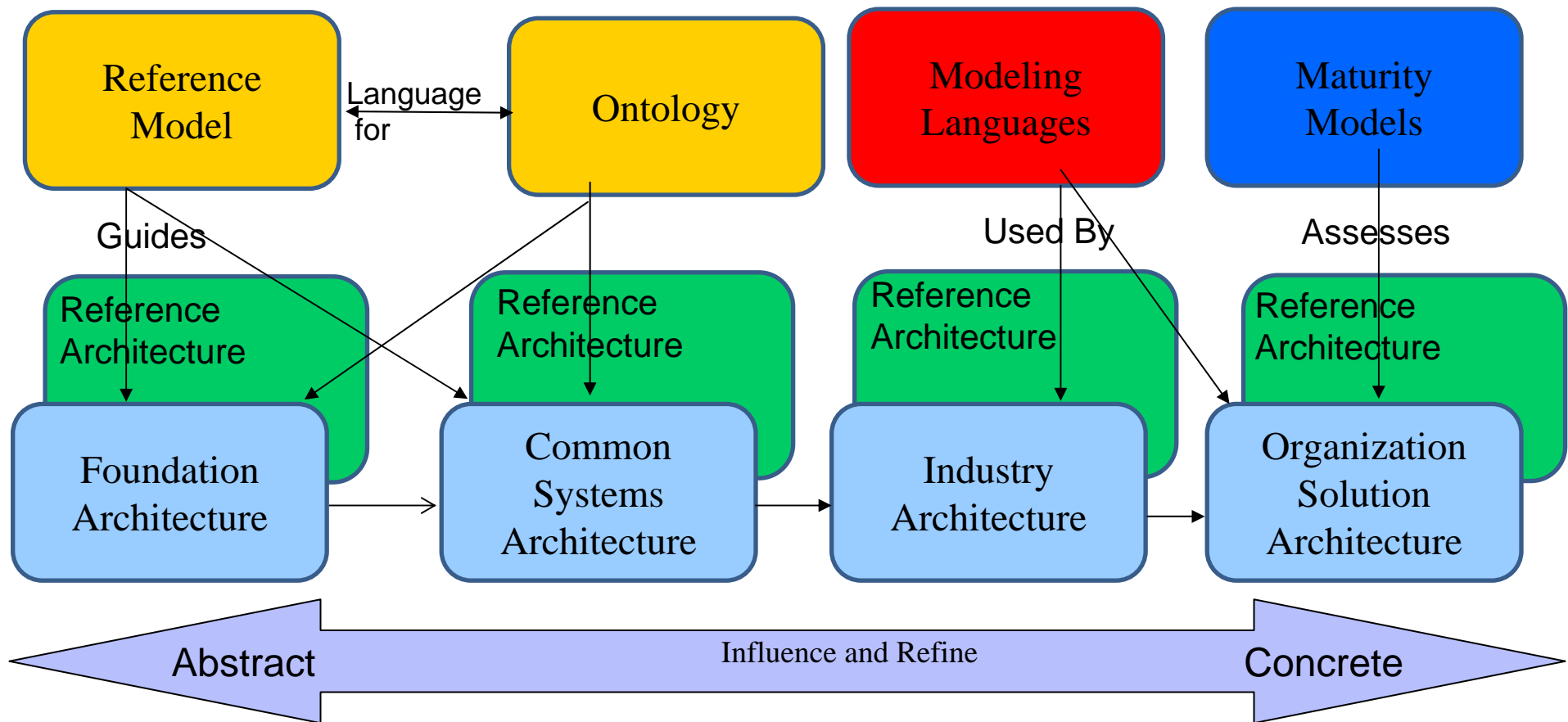


# Nomenclature

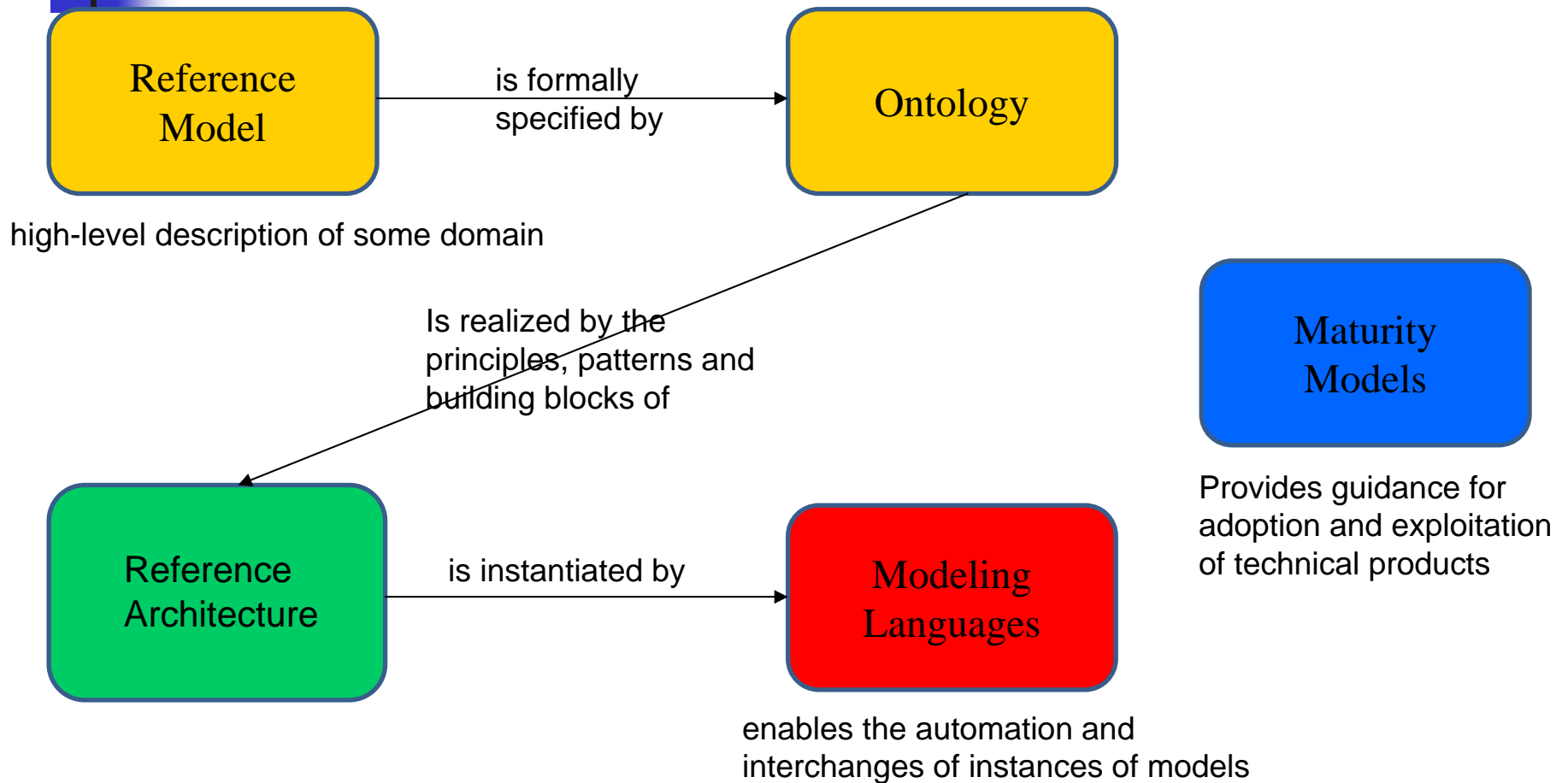
---

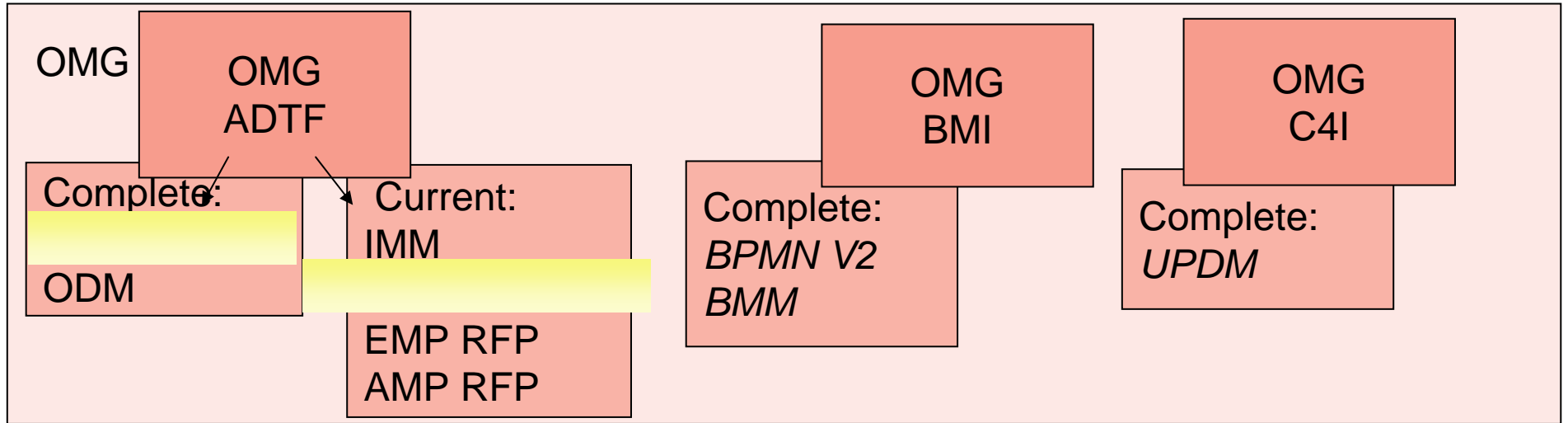
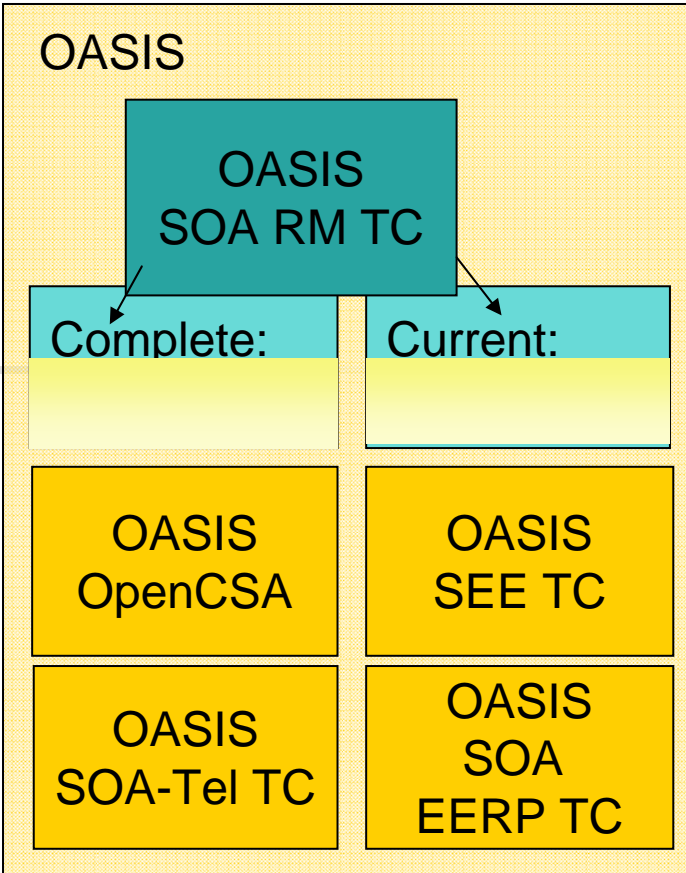
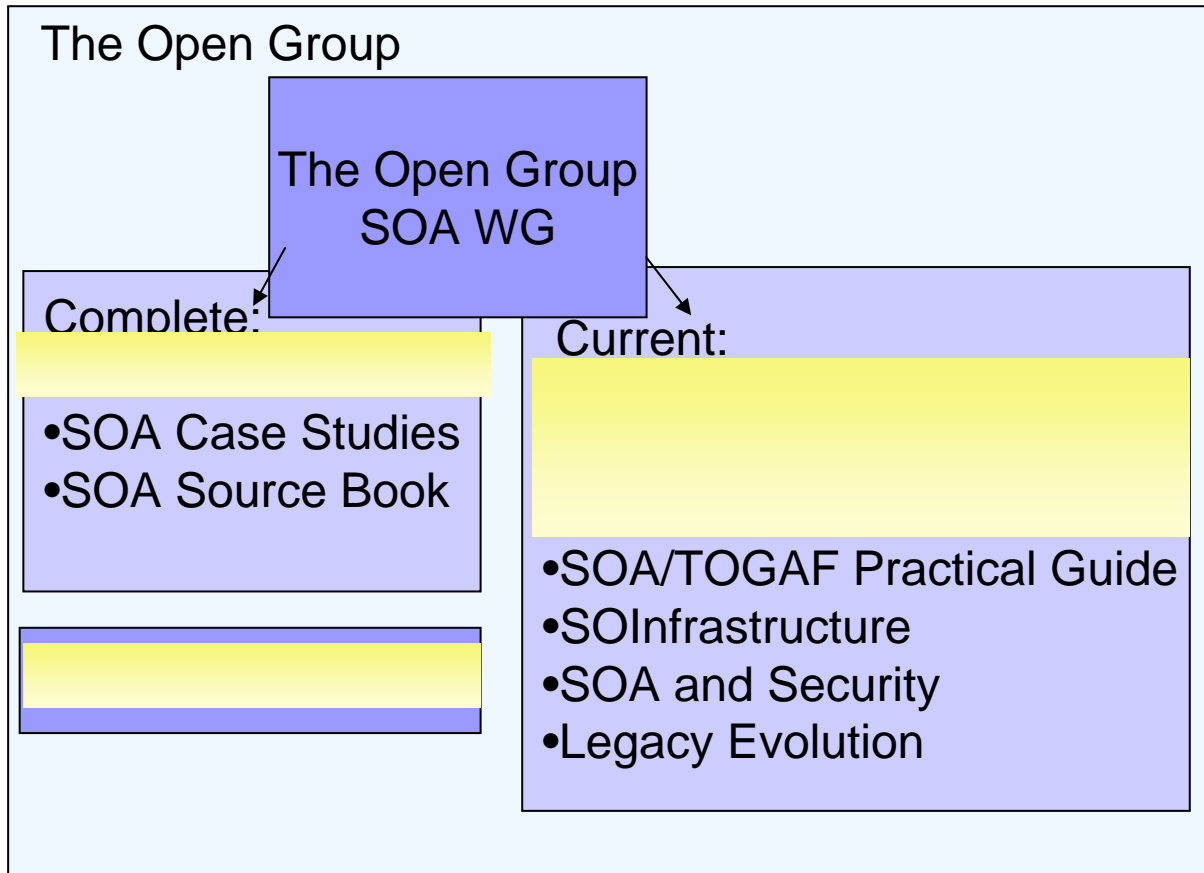
- **Reference Models** – an abstract framework for understanding significant relationships among the entities of some environment
- **Ontologies** – an explicit formal specification of the terms in the domain and relations among them
- **Reference Architectures** – models the abstract architectural elements in the domain independent of the technologies, protocols, and products that are used to implement the domain, providing a template, based on the generalization of a set of past successful solutions.
- **Maturity Models** – Represents a means of and scale for both evaluating and assessing the current state of maturity
- **Modeling Languages** – Include a metamodel and notation that may be used to provide a standard means of representing artifacts in tools and in communicating information between tools and automated environments
- **Concrete/Solution Architectures** – An instantiation of a reference architecture

# Types of Architectural Standards

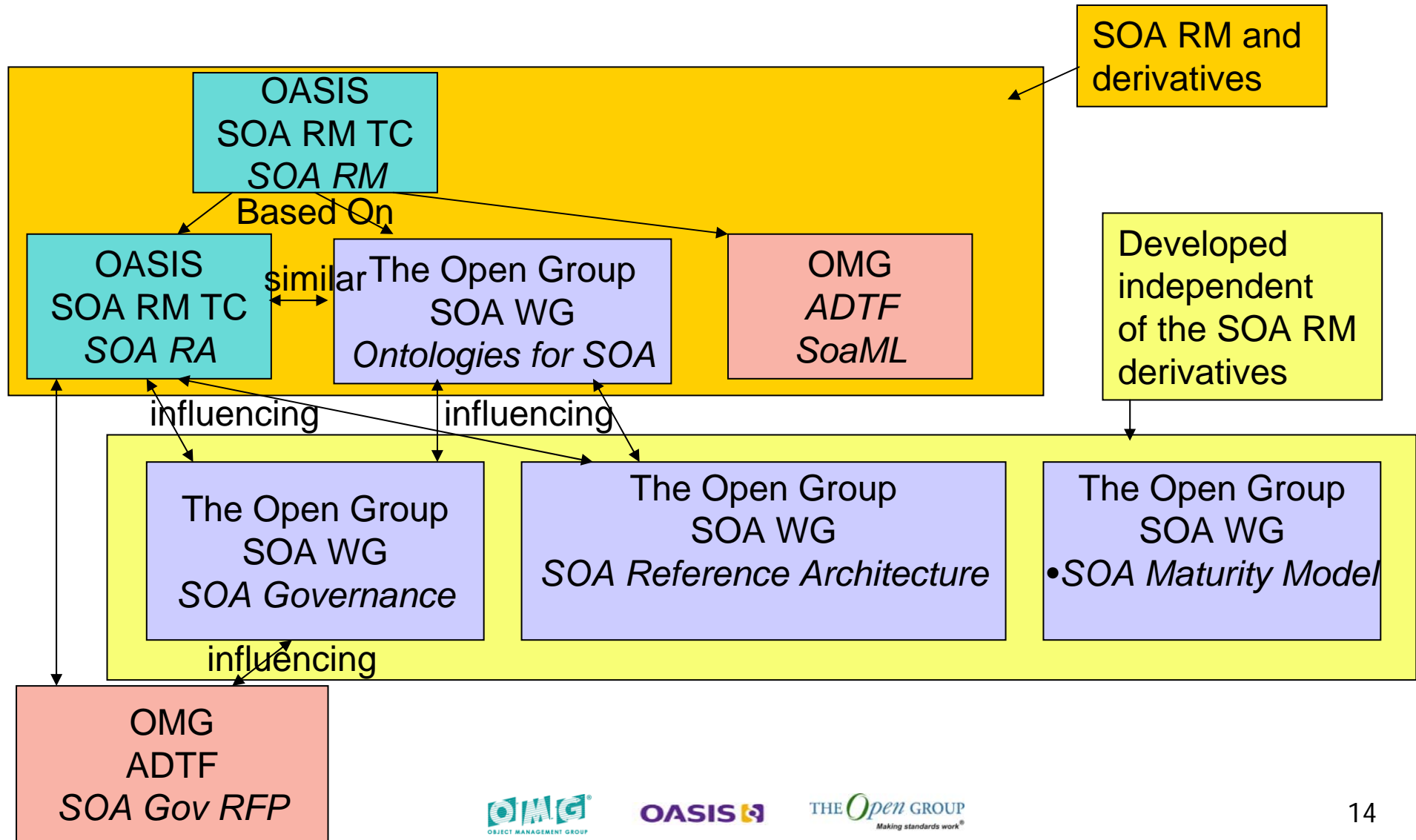


# Conceptual Relationship Between Standards





# Derivation of Specifications





# Summary of Architecture Standards Concept Standards

---

- OASIS SOA Reference Model (SOA RM)
  - For: Understanding Core SOA concepts
  - Vocabulary and common understanding and 'essence' of SOA
  - Establishes foundation for other to follow on SOA standards
  - <http://docs.oasis-open.org/soa-rm/v1.0/soa-rm.pdf>
- The Open Group Ontology
  - For: Formalizing and understanding Core SOA concepts
  - Formalizes and refines OASIS SOA RM
  - Extends model with concepts for architecture, governance
  - OWL representation to facilitate tools and automation
  - <http://www.opengroup.org/projects/soa-ontology/uploads/40/16940/soa-ontology-200-draft.pdf>



# Summary of Architecture Standards

## Reference Architecture Standards

---

- OASIS SOA Reference Architecture for Foundation SOA
  - For: Understanding elements of SOA, Considerations for cross ownership boundaries, Completeness of SOA architectures and implementations, SOA governance
  - View-based abstract reference architecture foundation that models SOA from an ecosystem/paradigm perspective
  - Views: Service Ecosystem, Realizing SOA, Owning SOA
  - <http://docs.oasis-open.org/soa-rm/soa-ra/v1.0/soa-ra-pr-01.pdf>
- The Open Group SOA Reference Architecture
  - For: Understanding elements of SOA, Deployment of SOA in enterprise, Basis for an industry or organizational reference architecture, Implication of architectural decisions, Positioning of vendor products in SOA context
  - intended to support the understanding, design, and implementation of common system, industry, enterprise, and solution architectures leveraging principles of SOA
  - Layered architecture using consumer and provider perspectives with cross cutting concerns and architectural building blocks.
  - <http://www.opengroup.org/projects/soa-ref-arch/uploads/40/19713/soa-ra-public-050609.pdf>





# Summary of Architecture Standards

## SOA Governance Standards

---

- The Open Group Governance Framework
  - For: understanding SOA governance in organizations
  - SOA Governance concepts and method for customizing an organization specific governance regimen from the governance framework
  - SOA Governance reference model and vitality method
  - [http://www.opengroup.org/projects/soa-governance/uploads/40/19263/SOA\\_Governance\\_Architecture\\_v2.4.pdf](http://www.opengroup.org/projects/soa-governance/uploads/40/19263/SOA_Governance_Architecture_v2.4.pdf)
- OASIS SOA Reference Architecture for Foundation SOA – Governance
  - For: understanding SOA governance across ownership boundaries where there is no single authoritative entity
  - General Governance and SOA Governance concepts
  - <http://docs.oasis-open.org/soa-rm/soa-ra/v1.0/soa-ra-pr-01.pdf>



# Summary of Architecture Standards

## Maturity Models, Modeling languages

---

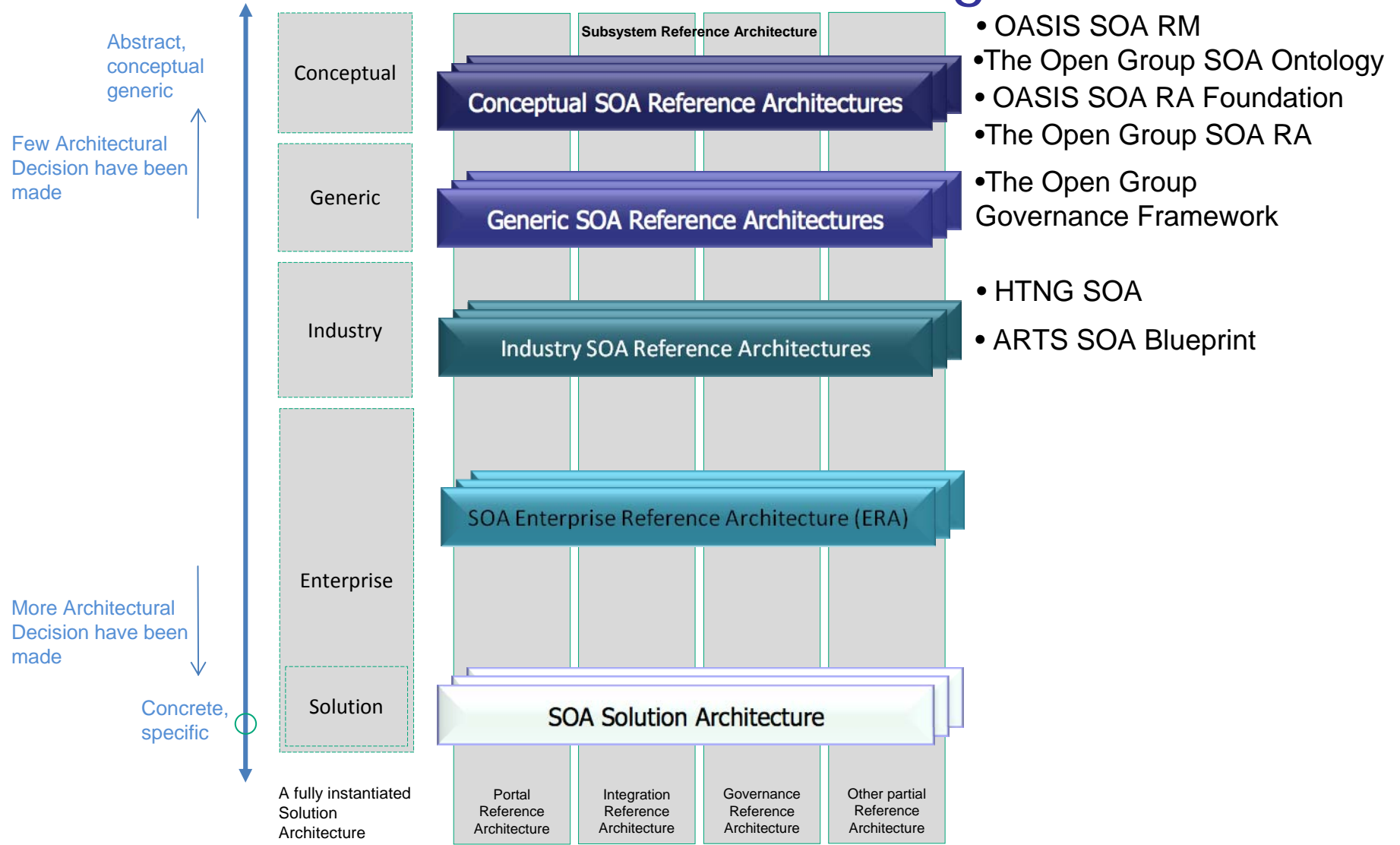
### Maturity Models

- The Open Group Service Integration Maturity Model (OSIMM)
  - For: Understanding the level of SOA maturity in an organization
  - Means to assess an organization's maturity within a broad SOA spectrum
  - Process to create a roadmap for incremental adoption
  - [http://www.opengroup.org/projects/osimm/uploads/40/19756/OSIMM\\_v2.1\\_6-04-09\\_Review.doc](http://www.opengroup.org/projects/osimm/uploads/40/19756/OSIMM_v2.1_6-04-09_Review.doc)

### Modeling Languages

- OMG SoaML
  - For: Understanding representing SOA artifacts in UML
  - Supports services modeling extensions to UML
  - Metamodel and UML profile
  - <http://www.omg.org/cgi-bin/doc?ad/08-11-01>

# Reference Architecture Continuum and Positioning

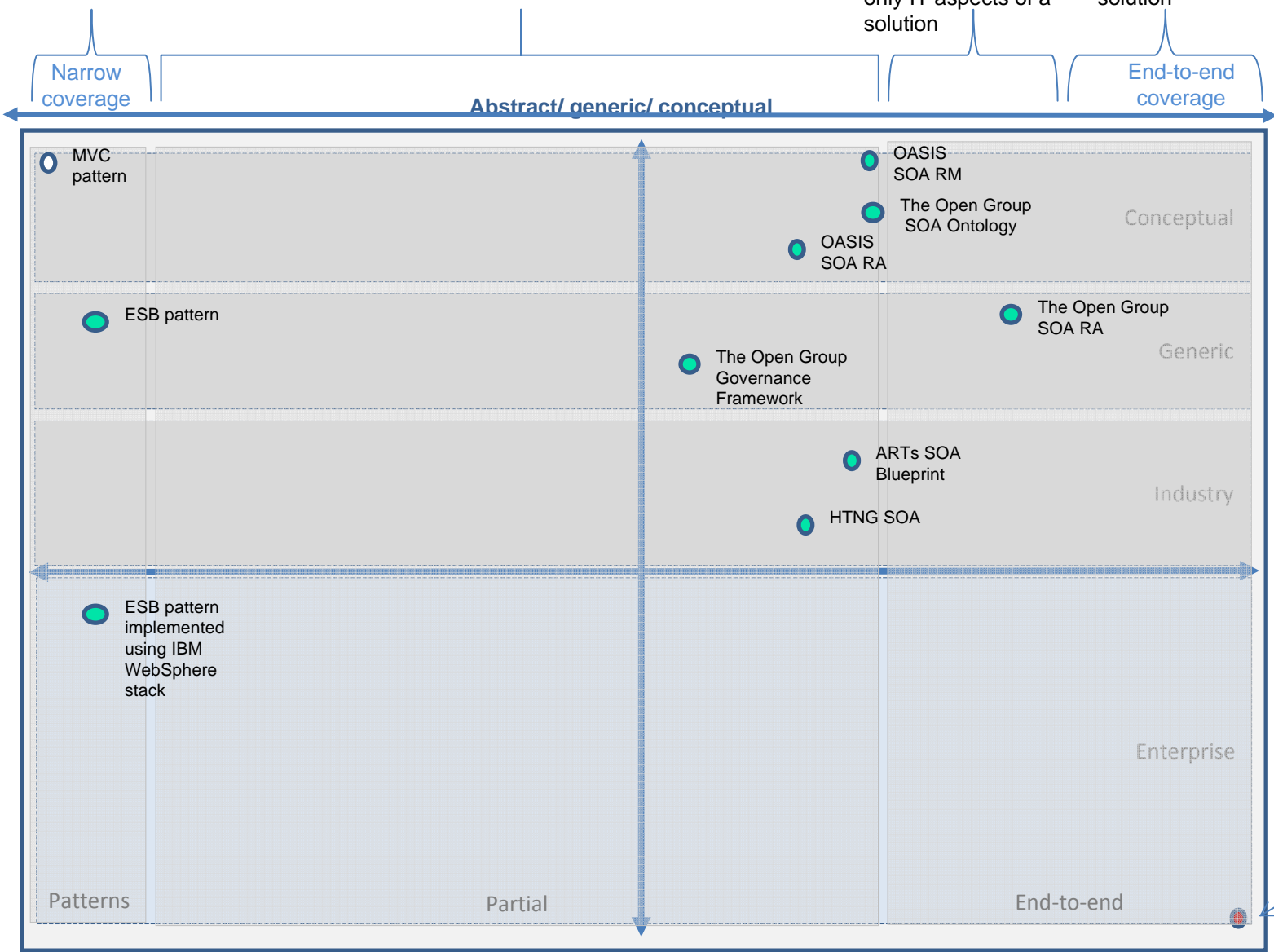


Architecture Pattern (MVC, for example)

Partial Reference Architecture covering specific subsystem such as presentation, integration or security

End-to-end Technical Reference Architecture covering only IT aspects of a solution

End-to-end Reference Architecture covering business and IT aspect of a solution



Narrow Architecture pattern

Comprehensive Full enterprise solution architecture



# SOA and SOA Governance Concepts

---

- SOA
  - Service
  - Visibility
  - Interaction
  - Effect
  - Service Description
  - Policies and Contracts
  - Execution Context
- SOA Governance
  - Governance Framework
  - Governance Reference Model
  - EA Governance
  - People
  - Technology
  - Guiding Principles
  - Roles
  - Governing Process
  - Governed Processes
  - Vitality



# Guidance and usage of technical products

---

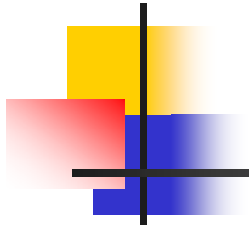
- Use **OASIS RM** for general understanding of SOA
- Use **TOG SOA Ontology** for more formal language and broader scope
- Use **OASIS SOA RA** for considering abstract components that will be included in SOA design especially when addressing considerations for cross-ownership boundaries
- Use **TOG SOA RA for** principles, patterns, building blocks and decisions for needed for SOA solutions
- Use **TOG SOA Governance** for guidance on the deployment of SOA governance in the enterprise
- Use **OSIMM** to understand what SOA features you are using and how to evolve your adoption of SOA
- Use **OMG SoaML** to create instances of services models that can be reused, integrated and possibly transformed into platform implementations
- OSIMM can provide guidance into which specifications are most relevant to you



# Conclusions and Questions

---

- Common concepts across so many specifications may be indications of SOA maturity
- Specifications can be complimentary
  - SoaML can be used with any of the Reference Architectures
- Pick the specification that's right for your needs
- Secondary goals
  - Establish collaboration between the standards bodies
  - Encourage consistency across the standards addressing the various aspects of SOA.
- Joint White Paper available at:
  - The Open Group: <http://www.opengroup.org/projects/soa/uploads/40/20044/W096.pdf>
  - OASIS: [http://www.oasis-open.org/committees/download.php/33412/W096\\_09-07.pdf](http://www.oasis-open.org/committees/download.php/33412/W096_09-07.pdf)
  - OMG: <http://www.omg.org/cgi-bin/doc?ad/2009-06-03>



# Thank You!