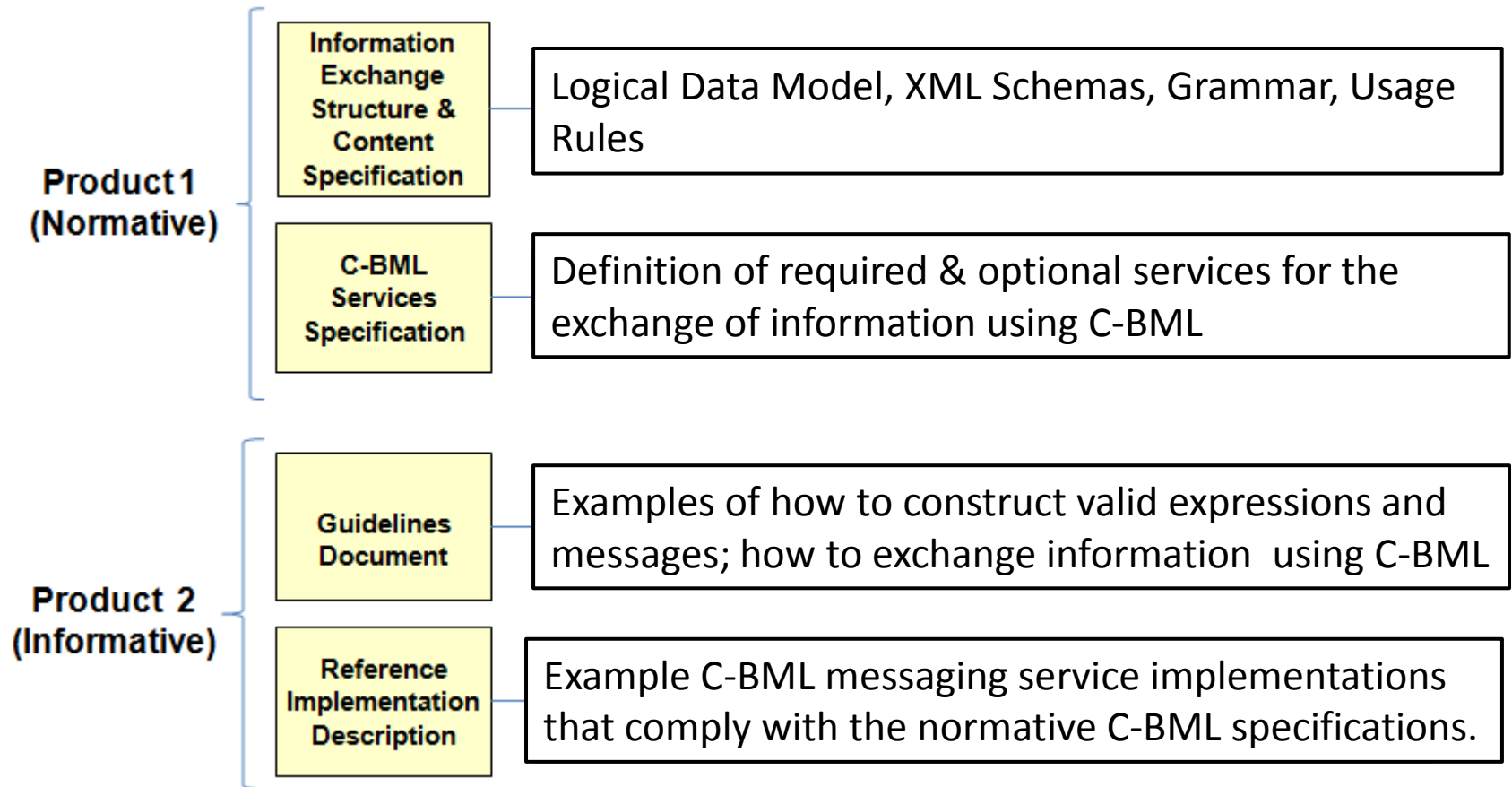


C-BML Phase 2 Standard Development Framework

C-BML Standard Development Framework*

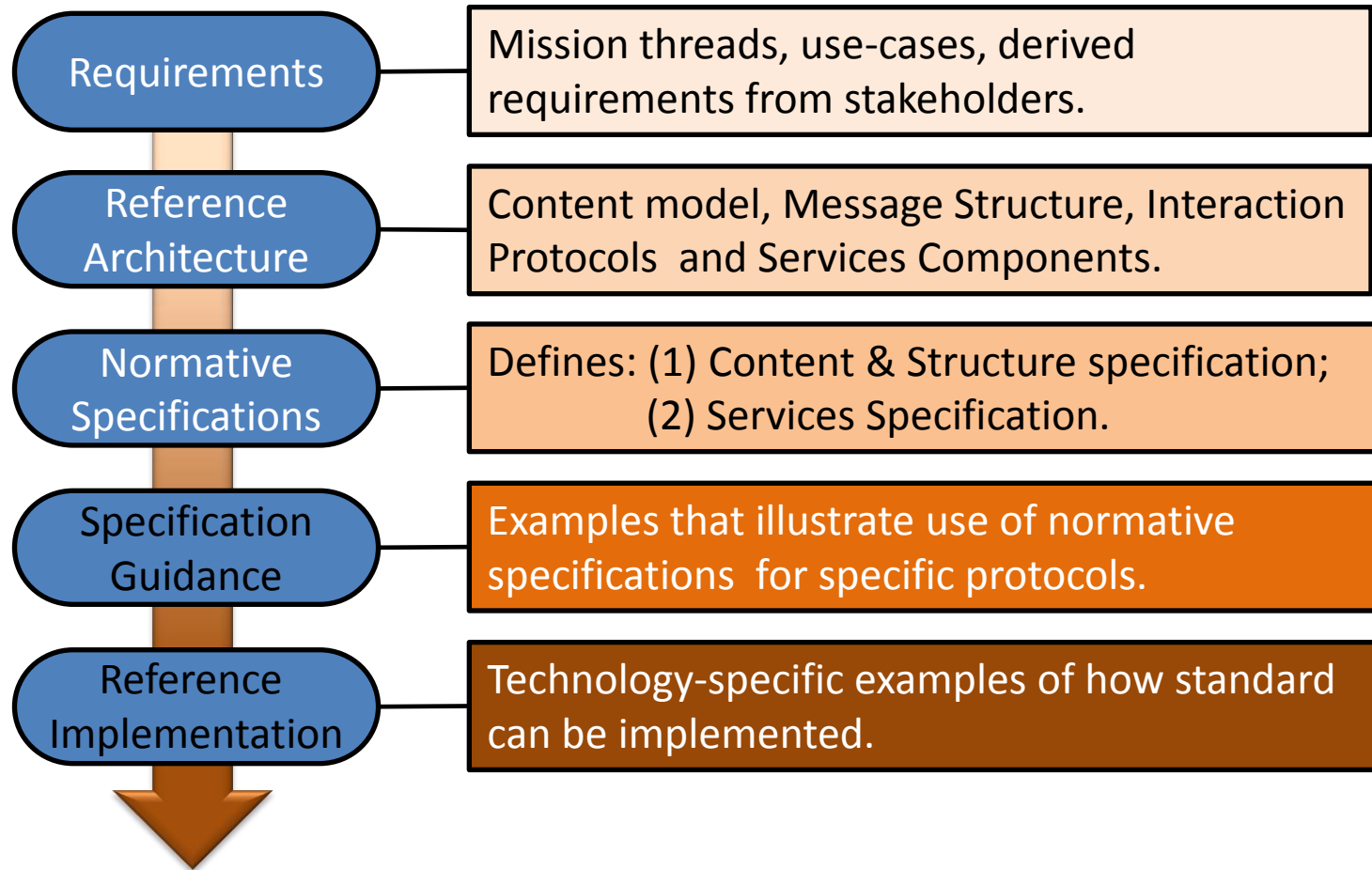
C-BML Standard Products



A Standard Development Framework is required to build these products

C-BML Standard Development Framework*

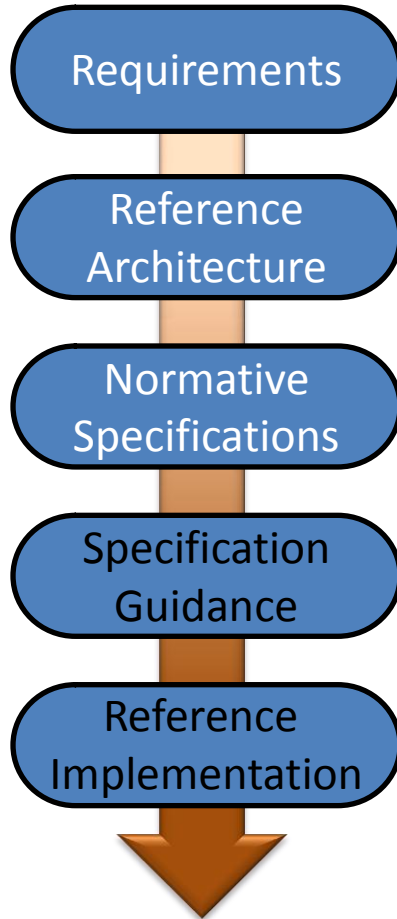
Overview



*This work is based in part on the US Joint Intelligence Community/DoD Content Discovery and Retrieval (IC/DoD CDR) Model
http://metadata.dod.mil/mdr/documents/DoDMWG/2010/04/2010-04-13_CDRIPT.ppt

C-BML Standard Development Framework

Overview

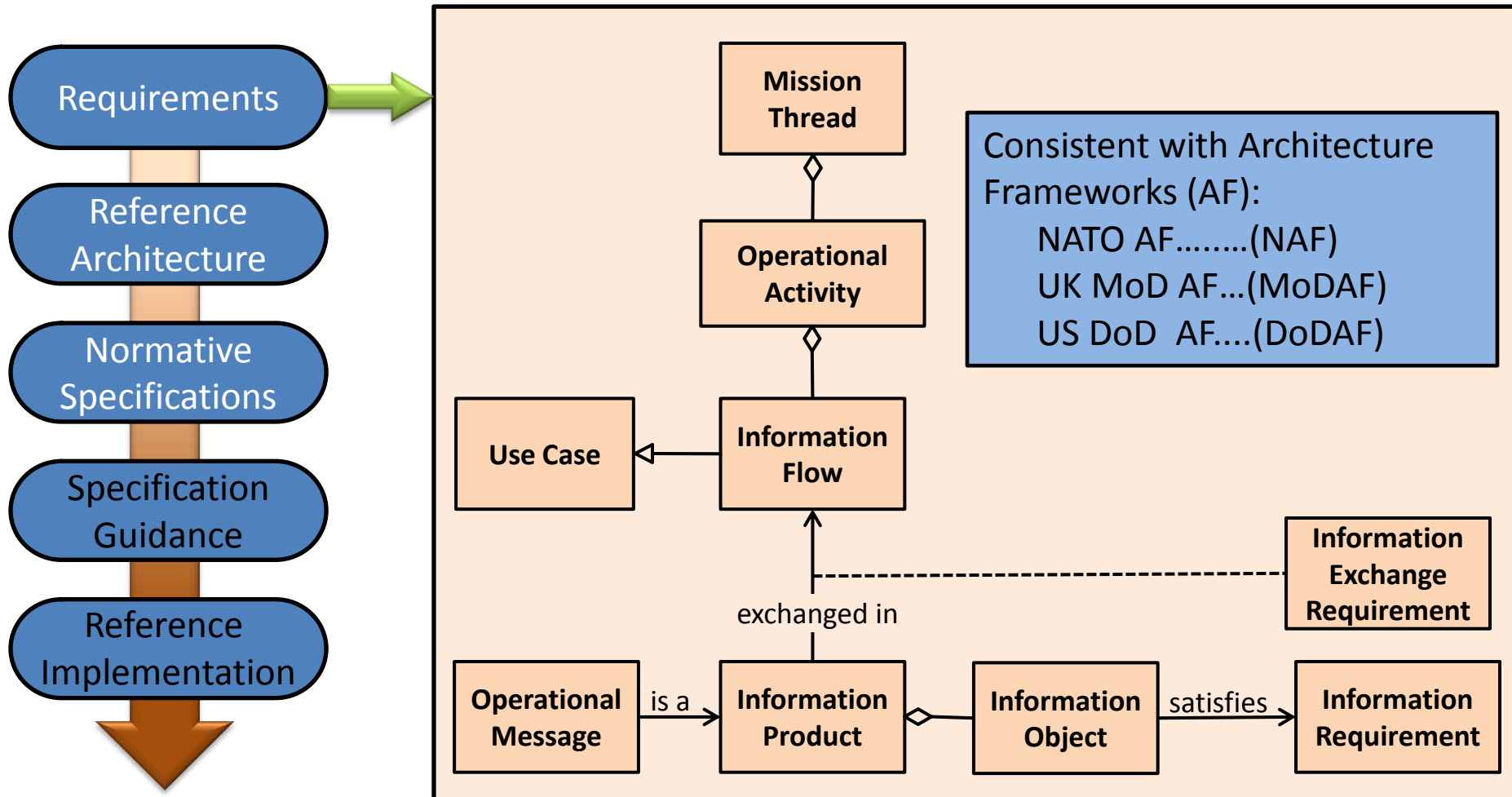


The C-BML SDF

- Defines a comprehensive model for requirements, domain-specific information products, information exchange interactions and service components.
- Separates normative and guidance documents.
- Provides a set of examples and usage guidance documents for technology-independent and technology-specific utilization.

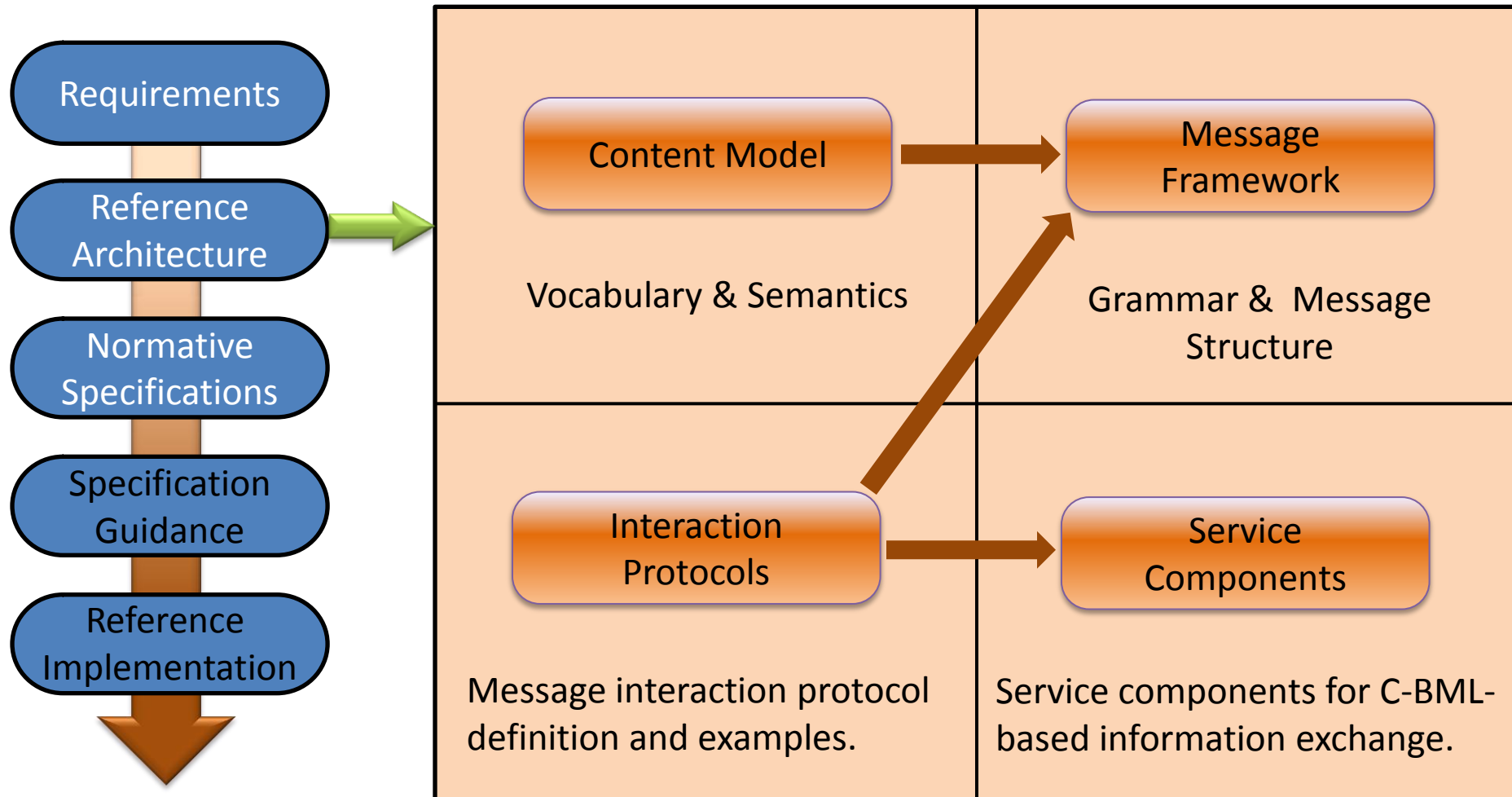
C-BML Standard Development Framework

Requirements



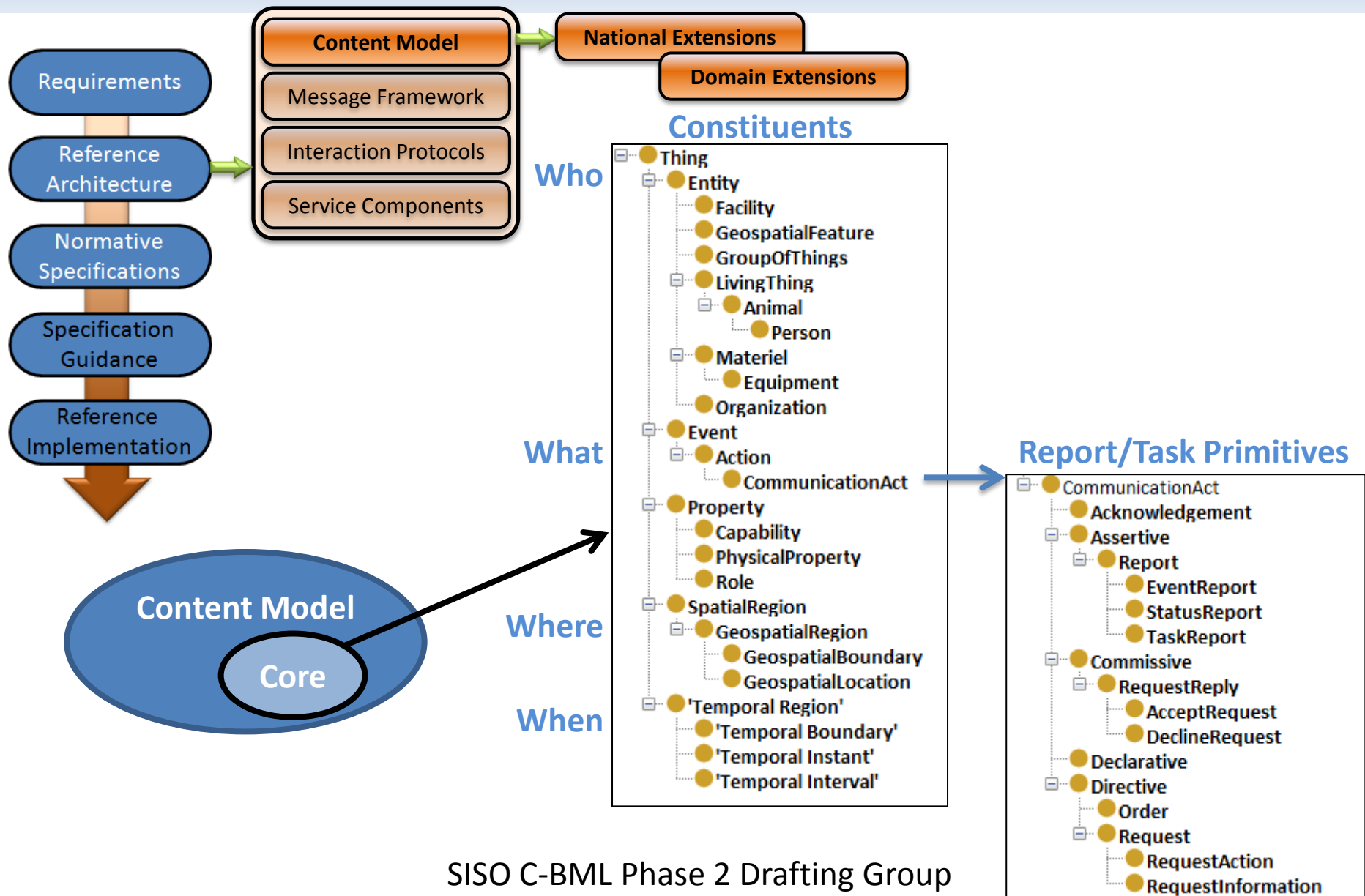
C-BML Standard Development Framework

Reference Architecture Overview



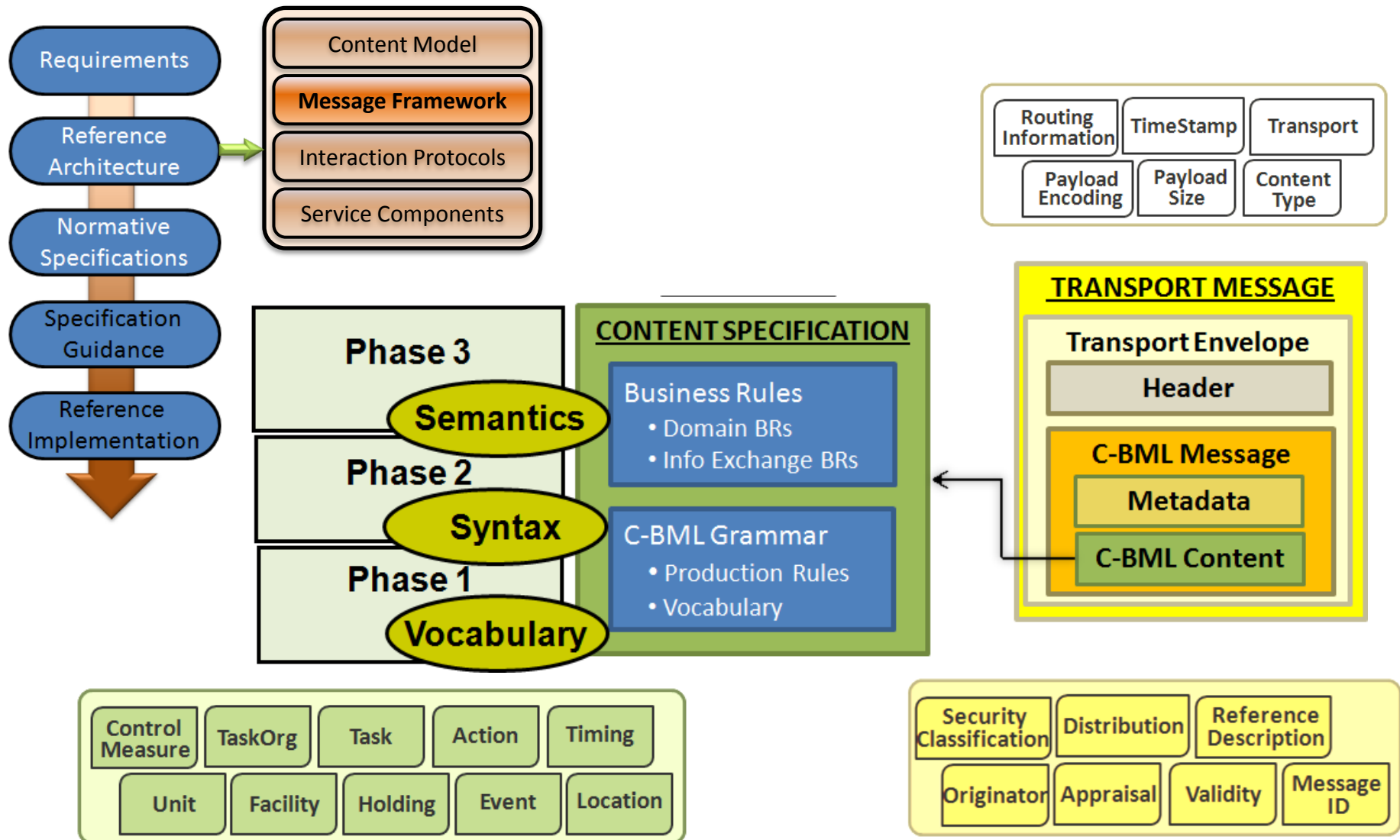
C-BML Standard Development Framework

Reference Architecture – Content Model



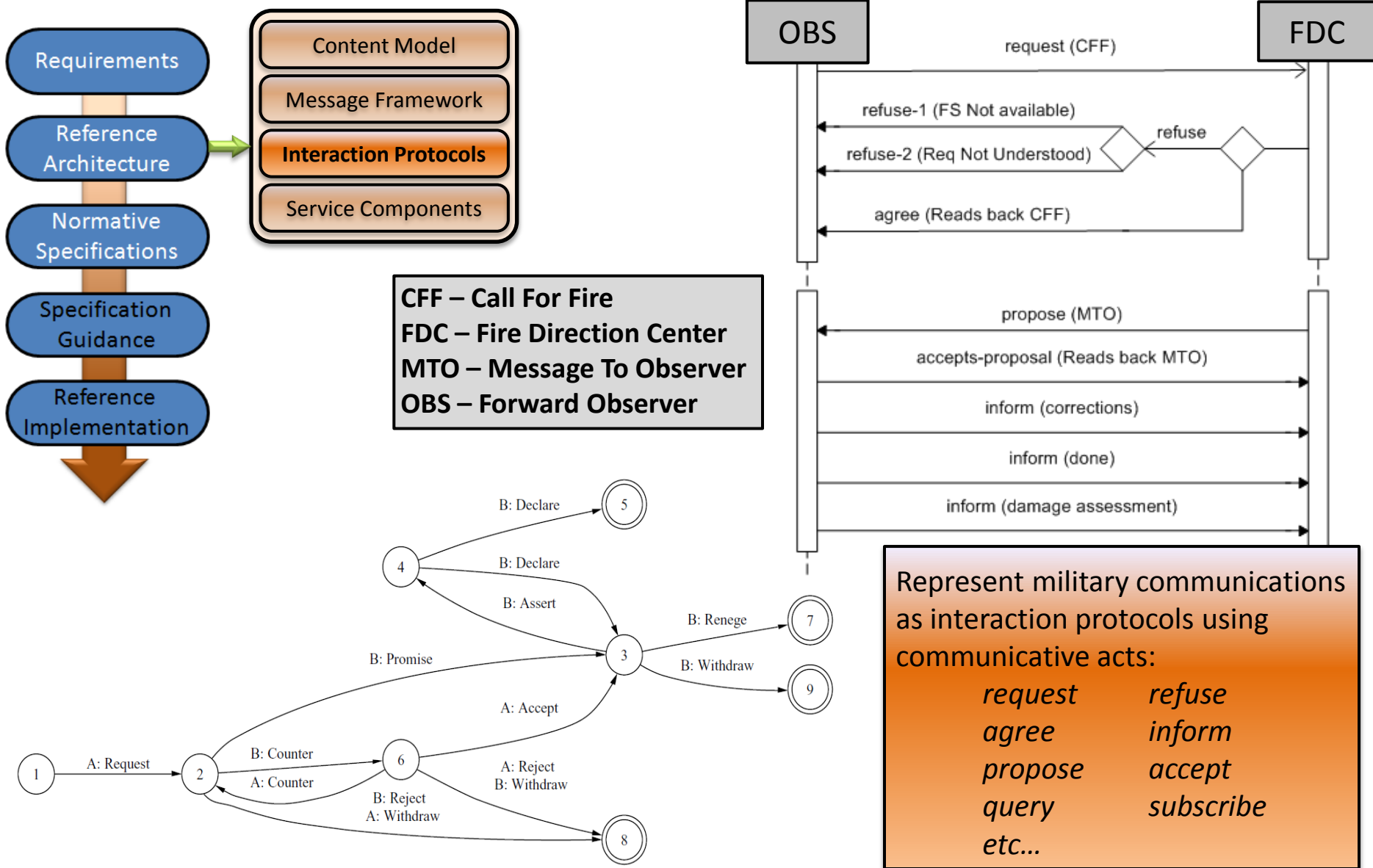
C-BML Standard Development Framework

Reference Architecture – Message Framework



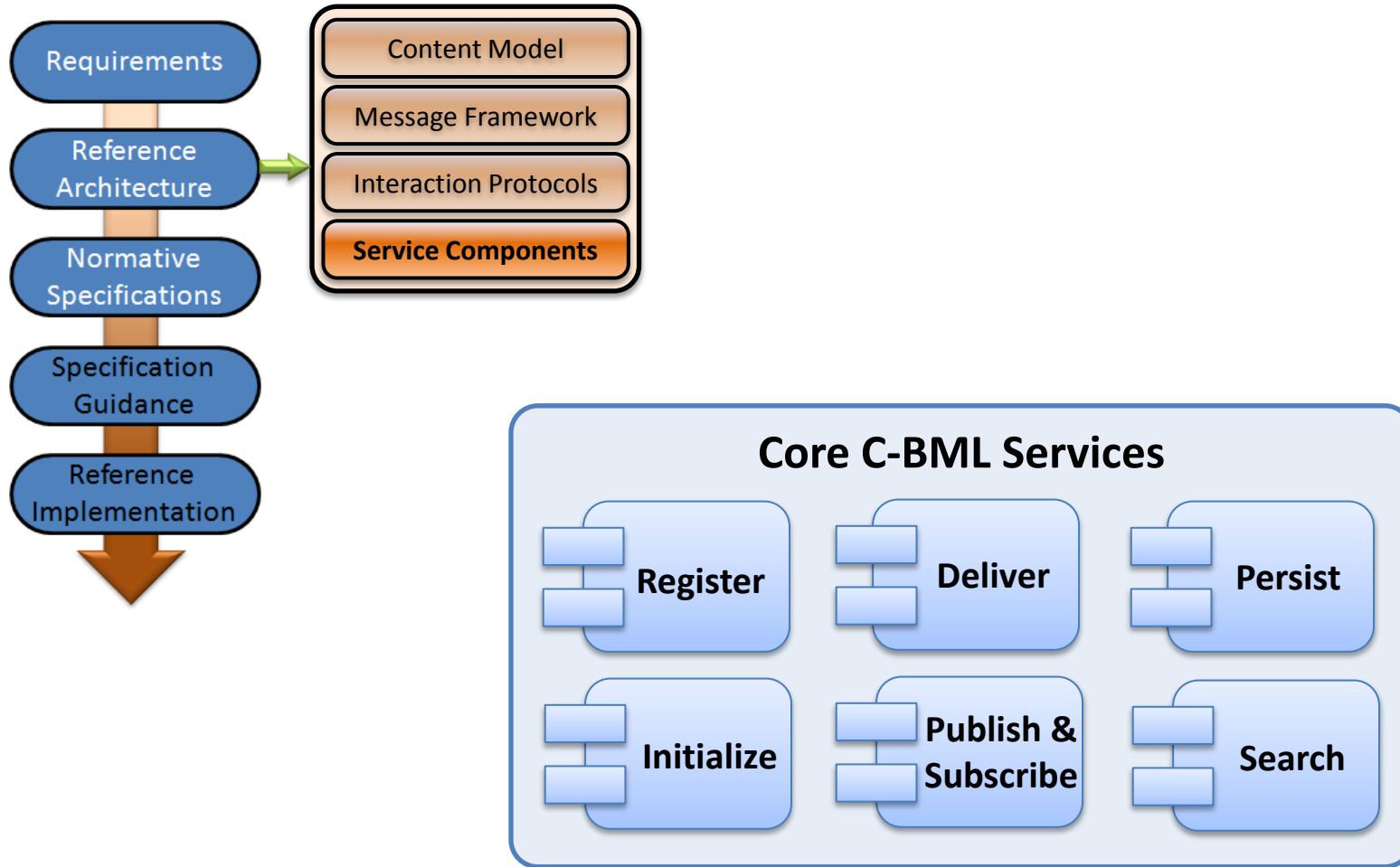
C-BML Standard Development Framework

Reference Architecture – Interaction Protocols



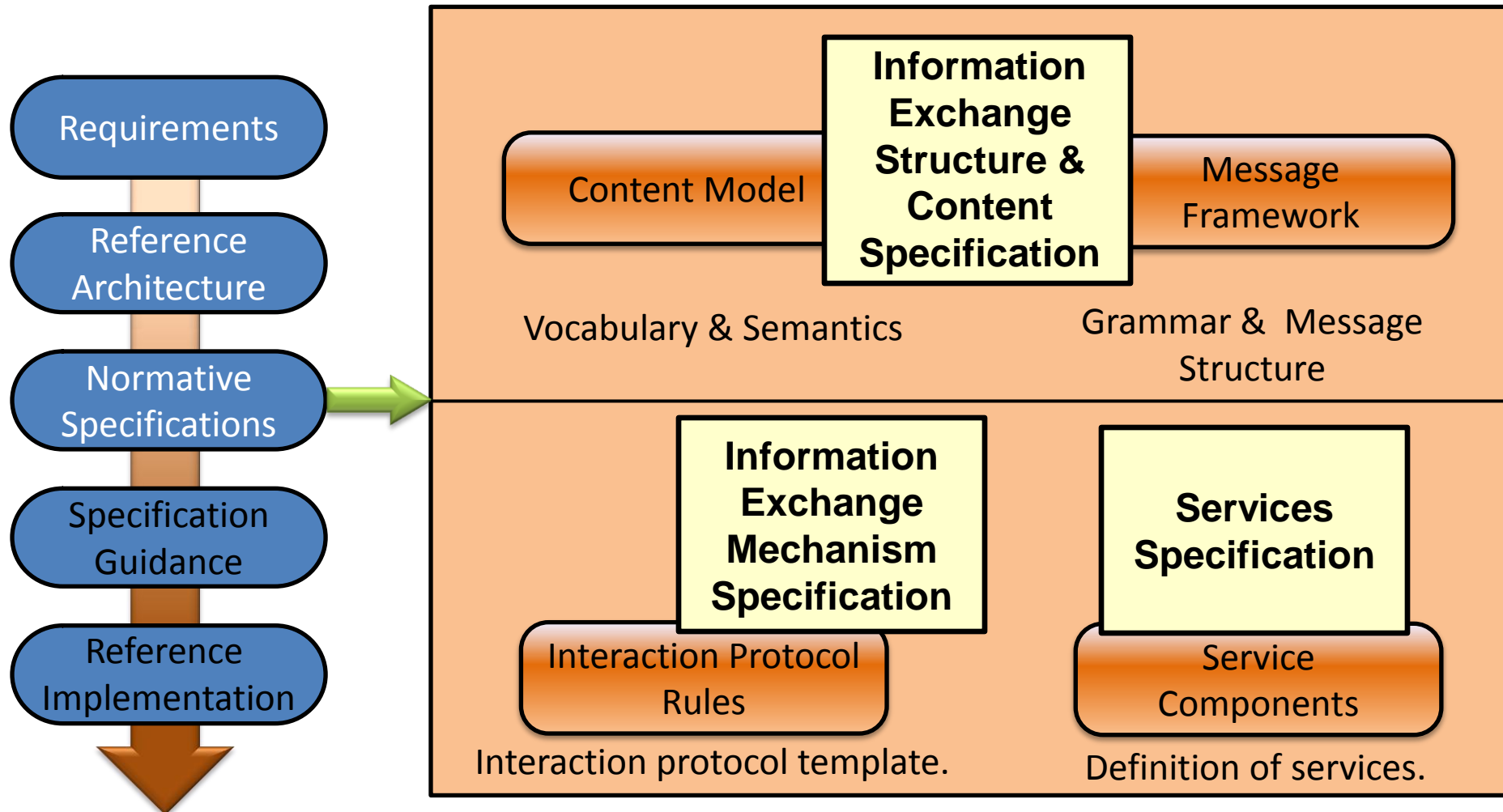
C-BML Standard Development Framework

Service Components



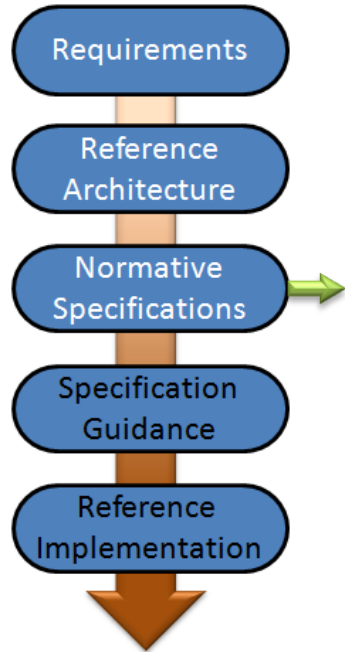
C-BML Standard Development Framework

Normative Specifications



C-BML Standard Development Framework

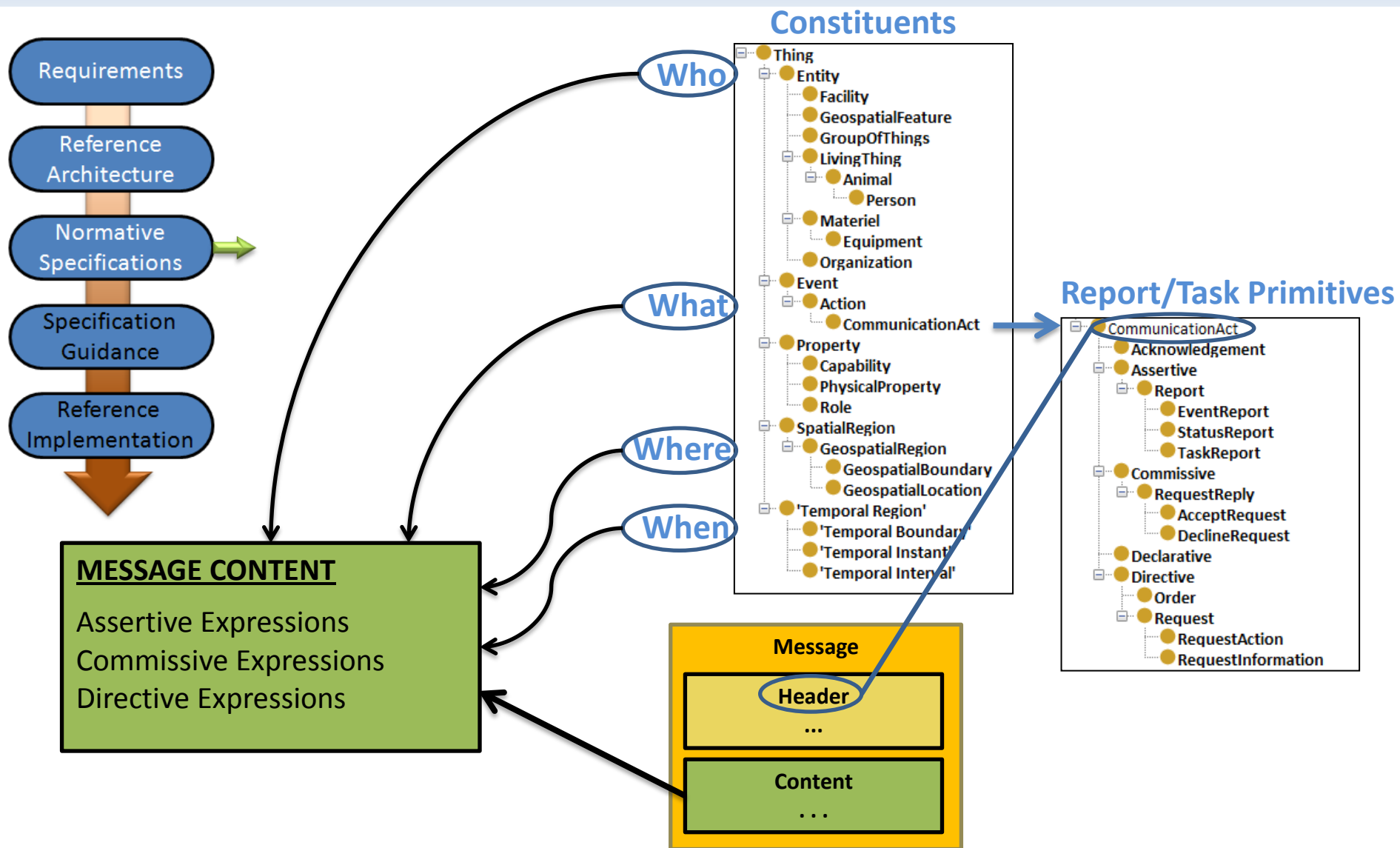
Information Exchange Structure & Content Specification



1. Defines the basic vocabulary or lexicon comprised primarily of simple types;
2. Defines a set of complex types or constituents;
3. Provides a set of production rules or grammar for combining simple types and constituents to form expressions;
4. Establishes the business rules that ensure that expressions are well-formed, with respect to domain considerations and information exchange requirements.

C-BML Standard Development Framework

Information Exchange Structure & Content Specification

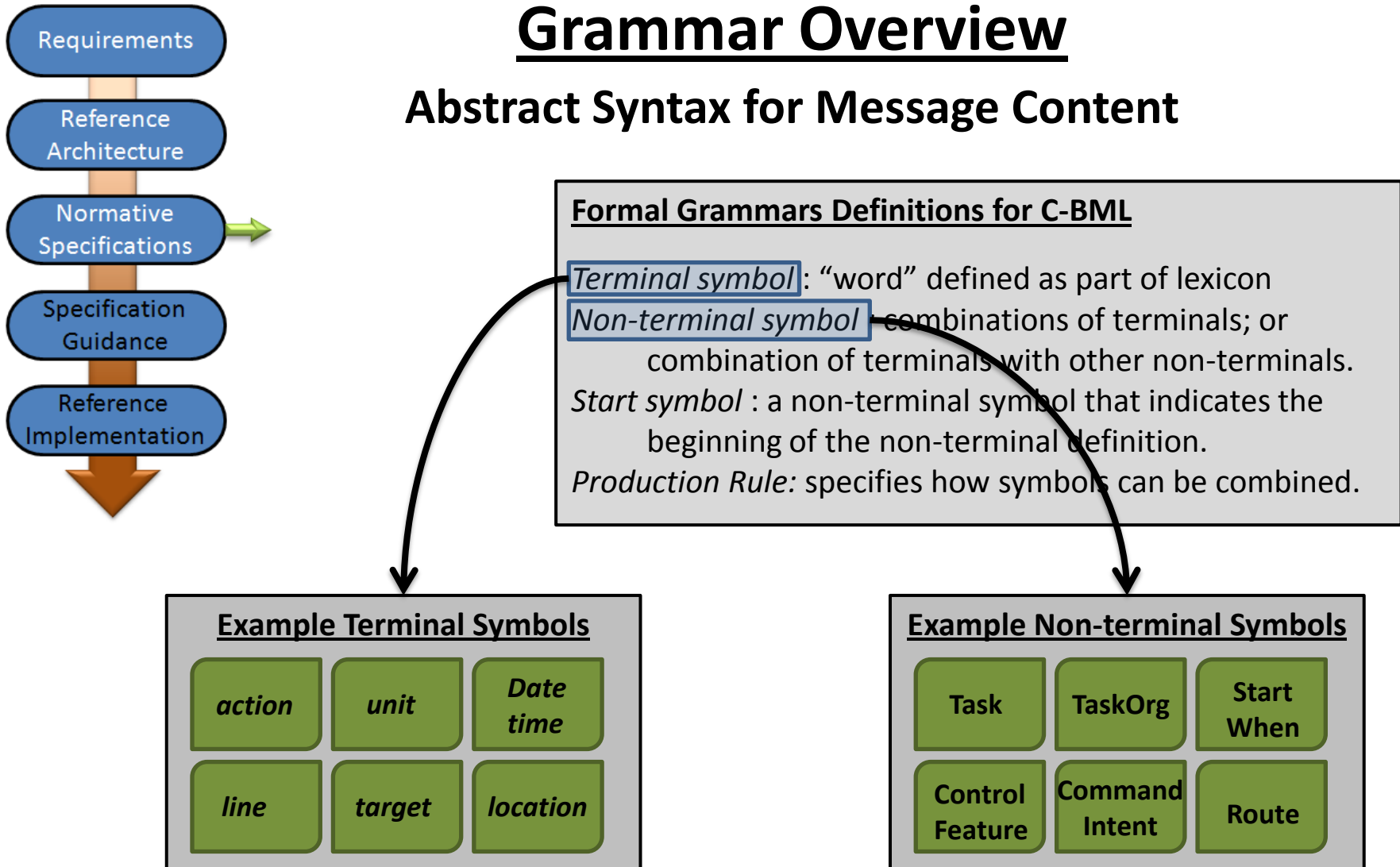


C-BML Standard Development Framework

Information Exchange Structure & Content Specification

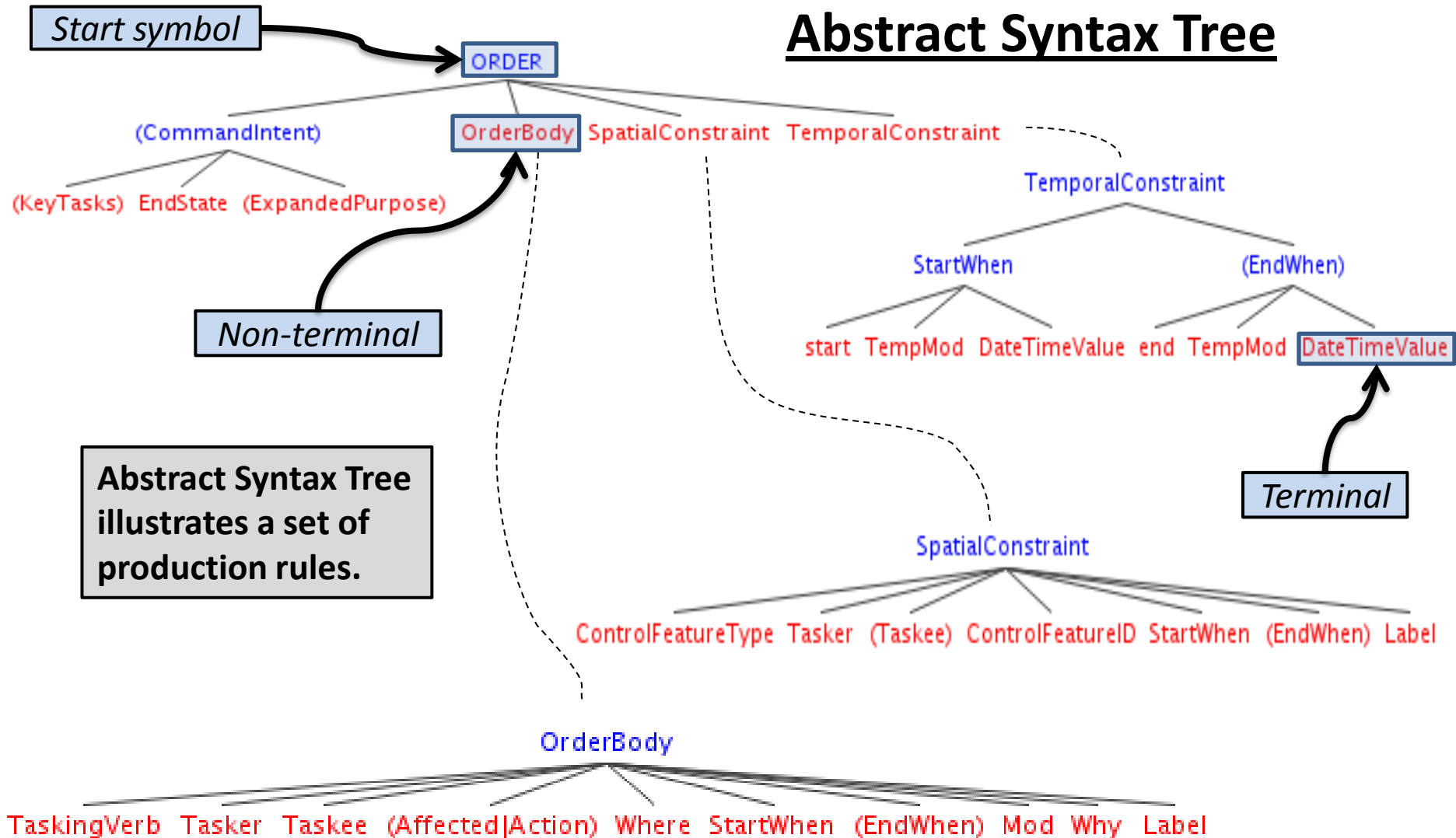
Grammar Overview

Abstract Syntax for Message Content



C-BML Standard Development Framework

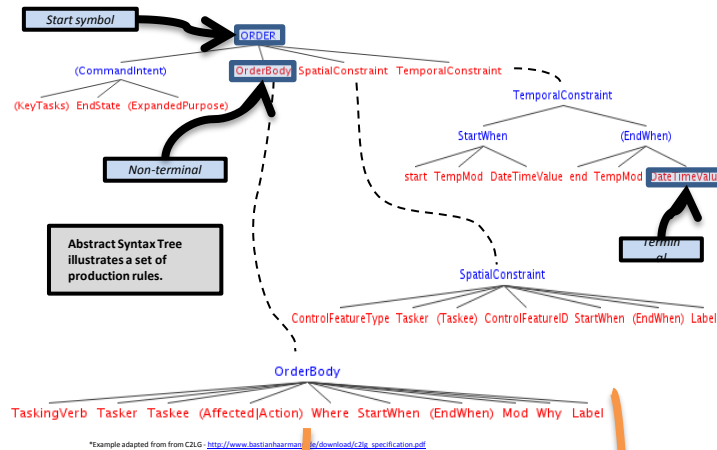
Information Exchange Structure & Content Specification



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Information Exchange Structure & Content Specification

Abstract Syntax Tree

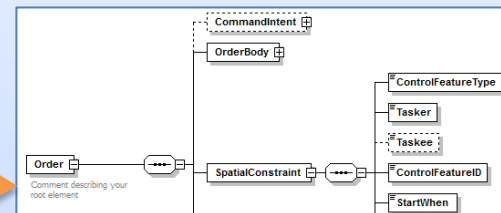


Concrete Syntax(es)

Semantically equivalent;

Derived from abstract syntax

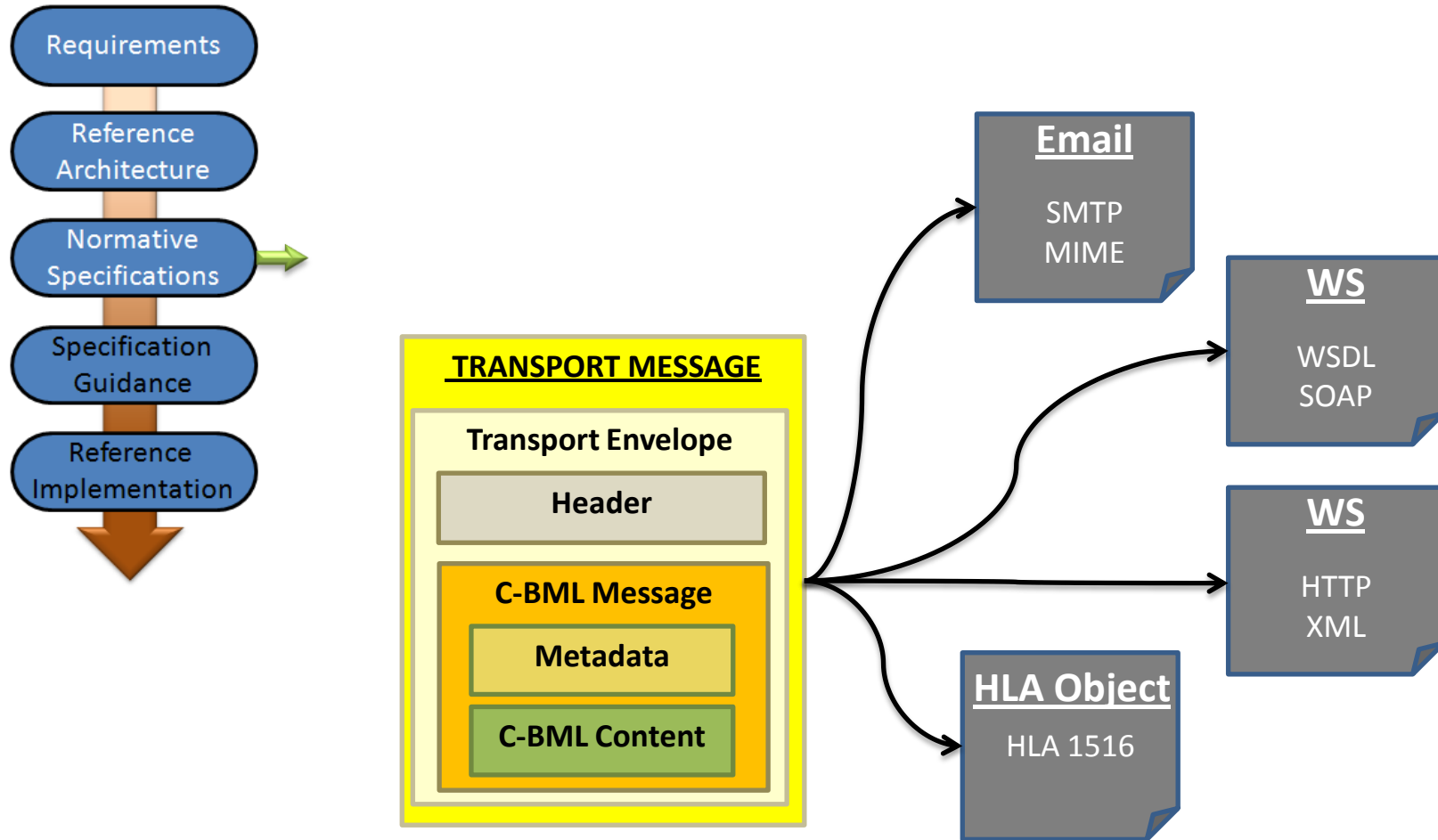
XML Schema



```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema>
  <xs:element name="Order">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="CommandIntent" minOccurs="0">
          ...
        </xs:element>
        <xs:element name="OrderBody">
          ...
        </xs:element>
        <xs:element name="SpatialConstraint">
          ...
        </xs:element>
        <xs:element name="TemporalConstraint">
          ...
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```


C-BML Standard Development Framework

Information Exchange Mechanism Specification



C-BML Standard Development Framework

Services Specification

Requirements

Reference
Architecture

Normative
Specifications



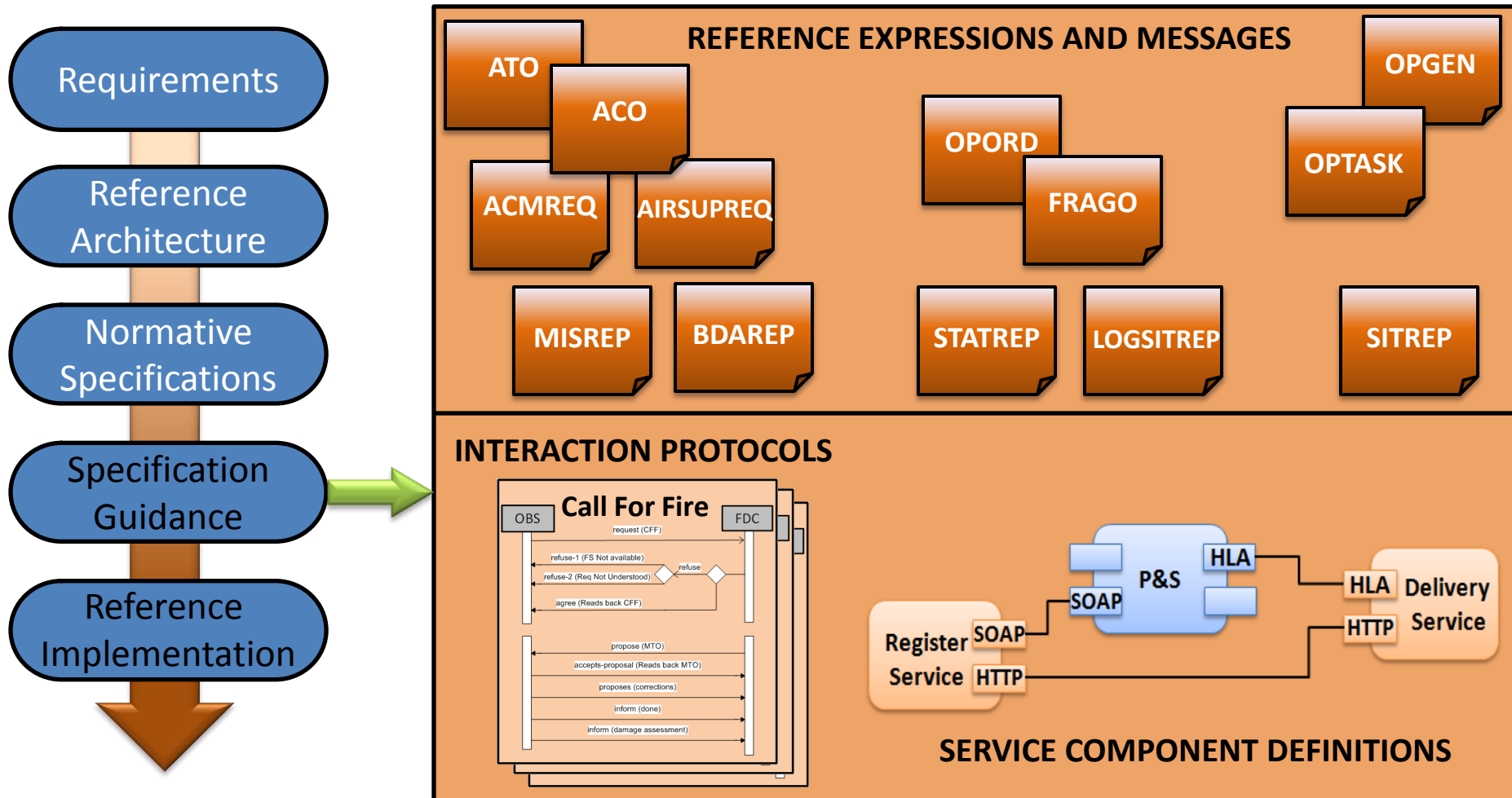
A service is specified by a **contract** between producers & consumers that defines the **policy** for exchanging **information products** comprised of elements in the **Logical Data Model**.

OASIS Reference Model for Service Oriented Architecture 1.0

1. A Service is a set of functionality provided by one entity for use of others.	6. A Service Description is comprised of three logical parts:	7. A security policy is a specialized type of Service Description policy noted above.
2. Services are conceptually autonomous (self sufficient) and opaque (independent of underlying technology) in nature.	Data Model - The logical expression of a set of information items associated with the consumption of a service or services;	8. Service Policy may mandate security requirements to be met, and <i>if they are not, interaction may be refused.</i>
3. There is no need to make architectural distinctions between <i>services consumed as part of a process</i> vs. <i>ones that are not.</i>	Policy - Assertions and obligations that service consumers and/or providers must adhere to or provide, and;	9. A null security policy is still logically considered a policy.
4. There is not always a one to one correlation between “on the wire” requests to invoke a service and service responses being consumed.	Contract (and/or offer thereof) - the syntactic, semantic and logical constraints governing on the use of a service.	10. A Service Description is advertised to consumers on a fabric to make it discoverable.
5. Each logical Service has <i>exactly one canonical Service Description.</i>		11. <i>Discovery does not constitute authorization</i> to execute against the service.

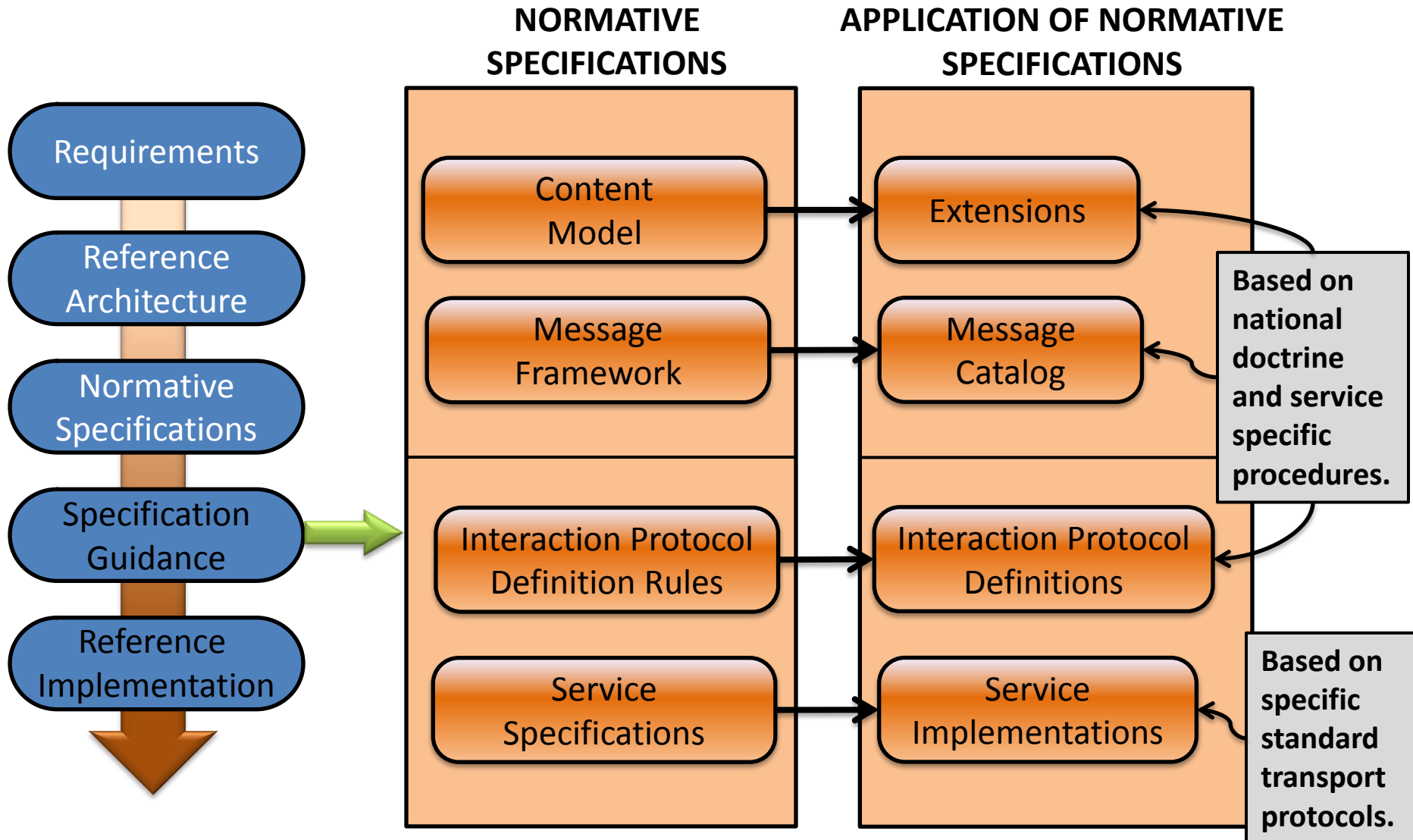
C-BML Standard Development Framework

Specification Guidance



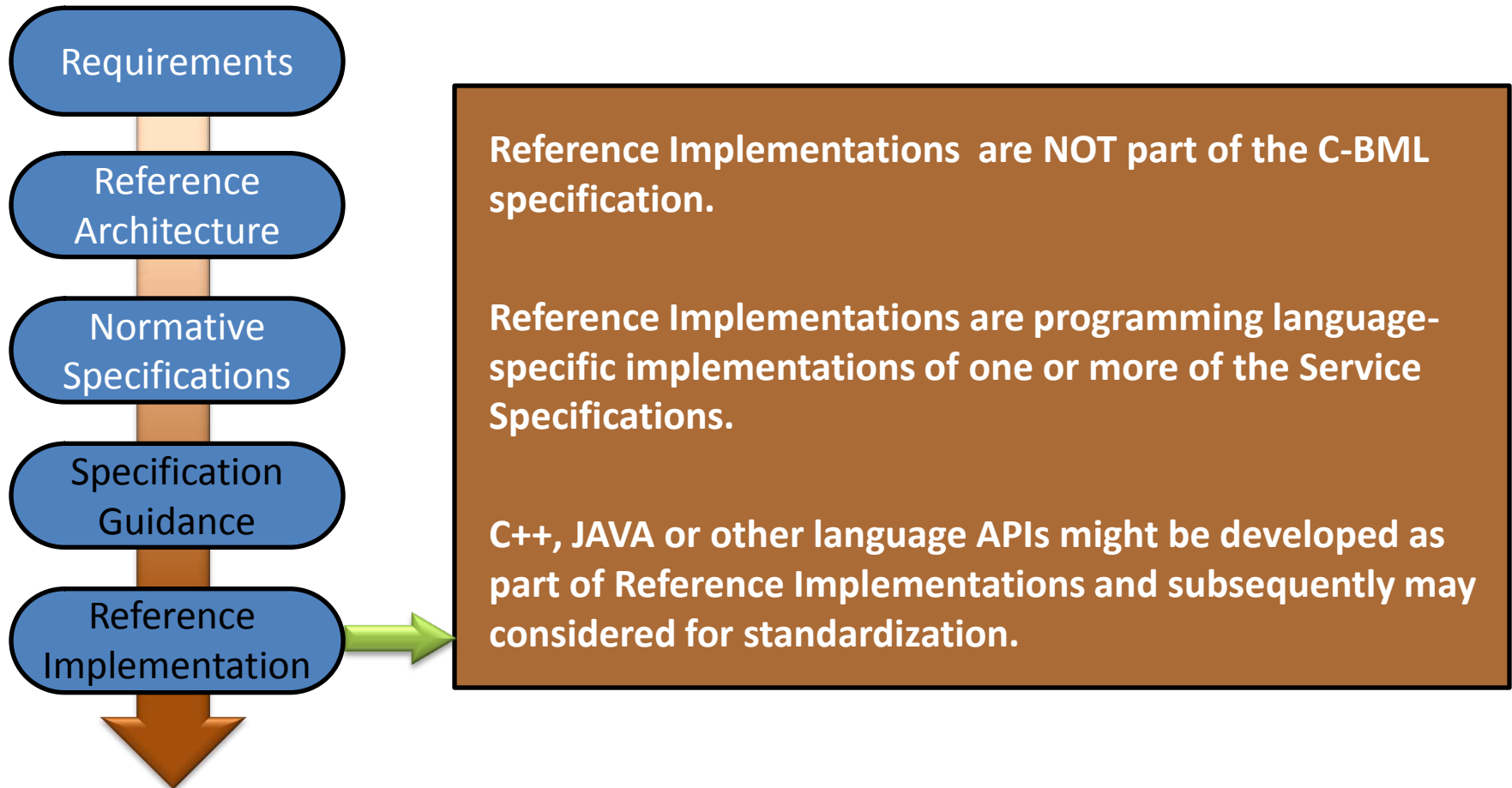
C-BML Standard Development Framework

Relationship between Normative & Guidance Specifications

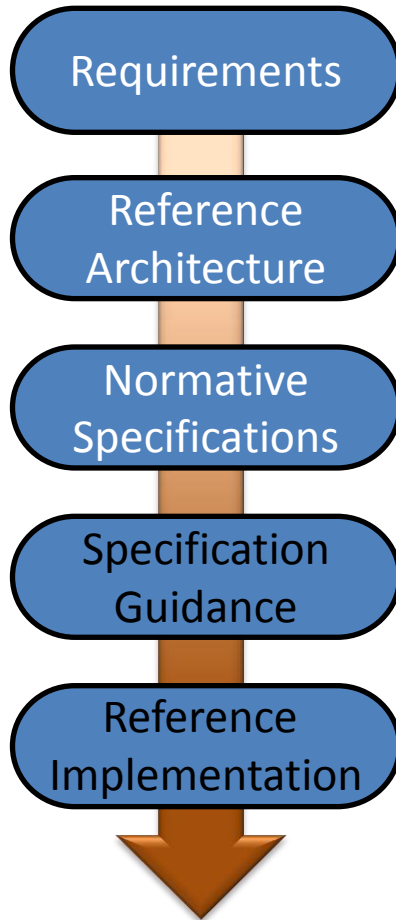


C-BML Standard Development Framework

Reference Implementation



C-BML Standard Development Framework



Questions ?