Request For Proposal

Information Models for Property and Casualty Insurance


Letters of Intent due: <09> <31>, <2007> (TBD)
Submissions due: <> <> <> (TBD)

Objective of this RFP

This RFP solicits proposals for information models to address the data management needs of the P&C Insurance Community. It is expected that submitters of these models utilize the OMG’s Model Driven Architecture principles (http://www.omg.org/mda/). The following is a summary of information models requested:

- Glossary of P&C Business Terms and accompanying metadata (source, version, format for example)

Use of already existing industry standards (ACORD for example) as a source of the Glossary is strongly encouraged.

- Reference model (Party, Party Role, Address, Products for example) that support the concepts described in the business glossary

- A Conceptual Data Model representing P&C business concepts with a target audience of business Subject Matter Experts, users, business analysts for example.
• A fully attributed Logical (ER) Data Model with appropriate identifiers, logical
data types and relationships as appropriate.

• A Relational database Model (a.k.a. Physical Data Model) derived from the
Logical Data Model to support development and interoperability of transactional
systems.

• A Dimensional Model (a.k.a. Star Schema that consists of ‘Fact’ Tables and
‘Dimensions’) derived from the Logical Data Model to support P&C Analytics
(Data Warehouse/Data Mart, Business Intelligence Tools).

• An XML Schema Model to support P&C data exchange and development of web
services.

• P&C Ontology to support reasoning, rules engines and development of semantic
web services.

• XMI representation of the above models to facilitate interchange of P&C metadata
among data management tools.

• Traceability map of P&C Business Terms to models listed above as well as valid
semantic variations where applicable (synonyms, geographical variations etc.)

For further details see Chapter 6 of this document.

Discussion will take place on the mailing list pandc-rfp@omg.org. Non-OMG members
may sign up for this list (by emailing request@omg.org) until the RFP is formally
approved and issued.

1.0 Introduction

1.1 Goals of OMG
The Object Management Group (OMG) is the world's largest software consortium with
an international membership of vendors, developers, and end users. Established in 1989,
its mission is to help computer users solve enterprise integration problems by supplying
open, vendor-neutral portability, interoperability and reusability specifications based on
Model Driven Architecture (MDA). MDA defines an approach to IT system
specification that separates the specification of system functionality from the
specification of the implementation of that functionality on a specific technology
platform, and provides a set of guidelines for structuring specifications expressed as
models. OMG has established numerous widely used standards such as OMG
IDL[IDL], CORBA[CORBA], Realtime CORBA [CORBA], GIOP/IIOP[CORBA],
UML[UML], MOF[MOF], XMI[XMI] and CWM[CWM] to name a few significant ones.

1.2 Organization of this document

The remainder of this document is organized as follows:

Chapter 2 - Architectural Context - background information on OMG’s Model Driven Architecture.

Chapter 3 - Adoption Process - background information on the OMG specification adoption process.

Chapter 4 - Instructions for Submitters - explanation of how to make a submission to this RFP.

Chapter 5 - General Requirements on Proposals - requirements and evaluation criteria that apply to all proposals submitted to OMG.

Chapter 6 - Specific Requirements on Proposals - problem statement, scope of proposals sought, requirements and optional features, issues to be discussed, evaluation criteria, and timetable that apply specifically to this RFP.

Appendix A – References and Glossary Specific to this RFP

Appendix B – General References and Glossary

1.3 Conventions

The key words "must", "must not", "required", "shall", "shall not", "should", "should not", "recommended", "may", and "optional" in this document are to be interpreted as described in RFC 2119 [RFC2119].

1.4 Contact Information

Questions related to the OMG’s technology adoption process may be directed to omg-process@omg.org. General questions about this RFP may be sent to responses@omg.org.

OMG documents (and information about the OMG in general) can be obtained from the OMG’s web site (http://www.omg.org/). OMG documents may also be obtained by contacting OMG at documents@omg.org. Templates for RFPs (this document) and other standard OMG documents can be found at the OMG Template Downloads Page at http://www.omg.org/technology/template_download.htm
2.0 Architectural Context

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3.0 Adoption Process

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4.0 Instructions for Submitters

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5.0 General Requirements on Proposals

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6.0  Specific Requirements on Proposals

6.1  Problem Statement

6.1.1  P&C Information Management

The 21st century enterprise, being heavily technology dependent and globally dispersed, must be ‘Agile’ in order to successfully compete in the ‘Flat World’. With the continuing emphasis on outsourcing business processes and technology functions, running a globally dispersed, 24x7 organization poses its unique challenges as well. The above constraints almost mandate accurate understanding of the enterprise ‘Assets’ (People, Business Functions, Processes, Technology Portfolio, Information—‘Data and its Metadata’ to name a few) and the inter-dependencies among these ‘Assets’. Business stakeholders want the products and services to be delivered better, cheaper and faster while living with the behemoth legacy systems. Furthermore, globalization and the Internet have resulted in the need to define more loosely coupled, interoperable business processes and associated software components executable in distributed and heterogeneous environments.

In order to support the much needed ‘Agility’, business functions and associated processes must be supported by semantically accurate and reusable Information (Data and its associated Metadata). Information modeled and/or mapped to domain specific standards further enhances its value and interoperability. Service Oriented Architecture (SOA) is often touted as the solution that will drive ‘Agility’. XML based domain standards have been often used with success in exchanging information internally and externally. However the domain specific XML standards often cater to an inter-enterprise exchange of Data and offer very little (if at all) semantic richness and traceability to alternate realizations of the same Information (for example in databases and applications).

Typically, organizations develop their own XML Schemas using Schema editors. A side-effect of such an approach is that the XML tags are not in sync with the core business concepts. Therefore, developing an XML Schema model using the MDA approach by transforming a data model can not only preserve semantic accuracy and consistency but also preserves features like Primary/Foreign keys, relationships into ID and IDRefs in the XML Schema. Maintenance of XML Schemas generated from models is easier as well.

The OMG P&C WG has embarked upon applying the proven Model Driven Architecture approach (http://www.omg.org/mda/) to development of a set of P&C Information models traceable from an accepted set of business-driven concepts (Claim or Policy for example). We also recognize that there are several providers and consumers of such ‘Business Concepts’ in an enterprise. Therefore, the proposed P&C Information models must accommodate the need to represent the same business concept visually and otherwise (text for example) via a set of Models targeted for a variety of ‘providers and consumers’. Figure 1 depicts the above approach.
Fig. 1 P&C Business Glossary: the enabler of semantic accuracy, interoperability and traceability across models

In addition, these models must be exchangeable using industry standard formats (such as XMI) to drive interoperability among tools and repositories. For an overview of the Logical Architecture of the proposed P&C Information Models Standard, please refer to Fig. 2. In order to address needs of different stakeholders there are mandatory components and optional components of the proposed P&C standard.
Glossary of P&C Business Terms and accompanying metadata

It is widely recognized that lack of common understanding of business terms across an enterprise manifests itself into poor quality of its information systems culminating into erroneous decision making and higher cost. Traditional data integration approaches leading to development of data warehouses were portrayed as a solution to the mistakes made during database design and/or at the source of data acquisition (no validation of rules, formats etc.). However, data warehousing did not always solve the problem of semantic heterogeneity. A significant amount of money is spent on data quality tools to analyze why data does not conform to the rules defined in the data model or otherwise.

With the proliferation of web based applications often developed by geographically distributed development teams disconnected from the business users/SMEs, it becomes even harder to achieve semantic accuracy. Although traditional data dictionaries have been developed by many organizations, maintaining the currency and traceability of business terms across various models has been an uphill task. Typically, business analysts, data modelers, data integration/service integration experts approach the business user/SME to gather requirements. Even though the business terms are often
consistent, we end up with different semantics in data models, XML schemas, applications and databases. When valid reasons for variations in business concepts exist, it is hard to trace them to the original concept.

With the above factors in mind, submitters are urged to not only submit a standard Glossary of P&C Business Terms but also the ability to accommodate valid variations that are not part of the standard and used extensively while awaiting becoming part of a standard.

In addition, metadata pertinent to the business terms must be provided to develop and maintain a rich P&C Glossary. It is envisioned that documenting metadata like source of the P&C terms, format, date, version and valid variations will also lead to rationalization of terms used across the P&C industry.

Submitters are encouraged to use the business dictionary developed by ACORD.

P&C Terms and definitions are also documented in IBM’s IAA model ([http://www-03.ibm.com/industries/financialservices/doc/content/solution/278918103.html](http://www-03.ibm.com/industries/financialservices/doc/content/solution/278918103.html)), Prima-Solutions’ IBCS-reference model for insurance ([http://www.primasolutions.com/frontOffice/produits/primaIBCS.jsp?lang=in](http://www.primasolutions.com/frontOffice/produits/primaIBCS.jsp?lang=in)) and a dimensional model developed by Penn National. Submitters are encouraged to work with ACORD to rationalize the semantics captured in these models and submit an industry standard P&C Glossary.

Use of horizontal modeling standards like OMG’s Semantics of Business Rules and Vocabulary (SBVR, see section 6.3.4) can facilitate the documentation and maintenance of the glossary and related metadata.

Following reference model is in scope:

- Party, Party Role
  - Employee
  - Agent
  - Producer
  - Claimant
  - Line of Business
  - Adjuster
  - Driver
6.1.3 A Conceptual Data Model (CDM) representing P&C business concepts with a target audience of business SMEs/users/analysts.

A conceptual model is a visual depiction of business concepts and their relationships at a high level. It describes ‘Things’ that matter to the business. ‘Party’ buys a ‘Policy’ that can be an Auto Policy, Home Policy is one such example. The P&C CDM must be developed using the standard P&C business glossary.

To enable interchange across various modeling tools, use of UML2.0 for developing the CDM is recommended.

6.1.4 A fully attributed Logical (ER) Data Model (LDM) derived from the Conceptual Data Model with appropriate Identifiers, logical data types and Relationships as appropriate.

A logical data model further refines the CDM by identifying Attributes that are pertinent to a business concept represented as an ‘Entity’ (‘Policy’ for example). It captures additional details about the ‘Policy’ including unique ways to identify a Policy as well as details of how a Policy may be related to other business concepts like ‘Party’ for example. It can also add further subsidiary Entities that are important but less fundamental to the business. The LDM must be derived from CDM and be platform independent. The P&C LDM must provide:

- P&C Entities and their definitions
- Attributes and their definitions
- Identifiers like Primary key and optionally Foreign Keys as well as composite keys where more than a single attribute is needed to uniquely identify records.
- Relationships among the entities (identifying and non-identifying, many-to-many, parent-child); Cardinality of relationships (as appropriate)
- Valid Sub-types (including exclusive/inclusive, incomplete/complete) of Entities where appropriate.
Valid logical data types (also known as Primitive Types), domain names and Classwords

6.1.5 A Relational database model (a.k.a. Physical Data Model) derived from the Logical Data Model to support development of transactional systems.

The relational model must be derived from the P&C LDM. This model should be sufficient to represent a complete database but might be further refined to a RDBMS specific physical data model (supporting RDBMS specific datatypes, storage parameters for example). However, specifying RDBMS specific features is not within the scope of this RFP as the RDBMS often varies across and within an enterprise as well. Submitters must provide:

- P&C Tables and Columns
- Physical data types and precision
- Identifiers (as captured in the LDM i.e. Primary keys, Foreign Keys with appropriate constraints) but additional identifiers like Alternate key for Indexing/faster searching capability and Inversion Keys
- Resolution of many-to-many relationships (Association tables)
- Resolution of Sub-types (to avoid any performance degradation)
- Reference metadata (look-up tables like state codes, country codes etc. as appropriate). Use of standards where appropriate (like ISO Country Codes) is highly recommended

6.1.6 A fully attributed Dimensional Model (a.k.a. Star Schema) that consists of ‘Fact’ Tables and ‘Dimensions’) derived from the Logical Data Model to support P&C Analytics (DW/Data Mart, BI Tools). Though it is possible to realize dimensional models on dedicated multidimensional databases (such as Essbase) this RFP is requesting a physical realization on a relational database.

While developing transaction systems to support P&C business functions is deemed important, the need to analyze the data stored in these systems has resulted in Analytics oriented models for development of Data Warehouse/Data Marts and business intelligence reporting. Dimensional models are typically organized as Star Schema that consist of Fact Tables – that capture the ‘Measures’ like Revenue, Premium

Typically Fact Tables allow the aggregation of Measures to slice-and-dice information at varying levels of granularity. Often, non-measurable facts are also included (analyzing attendance for a course for example)
Dimensions in scope are:

- Geography
- Policy Dimension
- Industry Dimension
- Class Code Dimension
- Time Dimension
- Payment Dimension
- Litigation Dimension
- Services
- Subrogation Service Dimension
- Independent Service Adjuster Dimension
  - Events Dimension
- Accident
- Catastrophe
  - Loss Unit Dimension
- Statistical Codes Dimension
- Claim Occurrence Dimension

Dimensions are considered ‘Conformed’ if they adhere to a common structure, and therefore allow queries to be executed across star schemas. For example, the Calendar or Time dimension is commonly needed.

The P&C Dimensional model should consist of the following:

- Set of conformed Dimensions where applicable
- A set of Fact Tables that provide a standard set of measurements to support:
  - Regulatory requirements reporting
- Loss Analysis
- Policy Event analysis
- Underwriting analysis
- Policyholder behavior analysis
- Customer Risk analysis

(not a complete list)

A list of Fact Tables other than those described in section 6.5.5 for the Dimensional/Analytical model is an optional requirement. Each carrier may want to analyze the transactional data in different ways and ask different questions. Hence the Fact Tables and their granularity should be left to each carrier to implement internally. The exception to this may be any regulatory reporting scenarios where a standard set of reports/questions are asked and must be provided as part of compliance to regulatory requirements.

Examples of Fact Tables are:

- Policy Transaction
- Claim Snapshot

6.1.7 XML Schema model

Purpose of this model is to support P&C data exchange and development of Services. A key aspect of this standard is that the XML elements be traceable from the business concepts and logical, physical data models. This allows direct lineage to be established into different physical forms such as relational database, business analytics etc.

The XML Schema model will include:

- One or more XML Schemas (these may be factored as appropriate to promote reuse)
- Complex Types corresponding to Entities in the LDM
- XML IDs corresponding to Primary Keys in the LDM
- Nested elements and XML IDREFs corresponding to relationships in the LDM
• Simple Types corresponding to Domains in the LDM

6.1.8 P&C Ontology model to support semantic reasoning, rules engines

One or more ontology components for P&C, developed in parallel with and reusing the terminology represented in the Conceptual Data Model, including:

• UML-based representation using the UML profiles for the Resource Description Framework (RDF)

• Web Ontology Language (OWL) from the Ontology Definition Metamodel (ODM)

• An ODM-compliant XMI representation

• A description logics (DL) compliant RDF/XML serialized representation.

• Optional extensions may include ontology components developed in parallel with the XML Schema to augment data services with semantics for downstream use in Semantic Web Services.

6.1.9 Traceability maps of P&C Business Terms to models listed above as well as valid semantic variations where applicable (synonyms, geographical variations etc.).

Traceability of P&C business concepts across the models described above is critical to support the vision established by the OMG P&C WG. Traceability maps must include:

  o Traceability from the Business Glossary to their corresponding model elements in conceptual, logical, relational, dimensional, DDL, XML Schema, XMI and Ontology models.

  o Traceability must be bi-directional

  o Impact analysis of changes (if a business concept changes, what is the impact on the models that consume the business concept in question) i.e. dependency maps

6.2 Scope of Proposals Sought

In summary this RFP seeks proposals that cover the following P&C business areas:

• Glossary of P&C Business Terms and accompanying metadata (definition, source (SME/Authority/Standard…), format, date, revisions/version, Acronyms for example) covering the following:
Premium/Policy Management

- Provides the ability to measure the type of activities performed for a given Policy to evaluate the effectiveness of Policy processing.
- Supports analysis of the timeliness of Premium entry and audit activities. Some of the key information needed would include;
  - Premiums entered (Deposit, Endorsements, Audits)
  - New Business and Policy Count
  - Renewal Business and Policy Count
  - Cancelled Business and Policy Count
  - Inforce Business and Policy Count
  - Coverage Cancellations
  - Audit Activity (Timeliness, Completed)

Compensation

Contract Management

New Business (underwriting process)

Claims

- The key information provided will satisfy Calendar, Accident and Policy Effective date analysis and trending of:
  - Outstanding Loss Reserves
  - Paid Losses and Expenses (Legal, Other)
  - Recoveries (Deductible, Salvage, Subrogation)
- Key metrics can be viewed with additional detail by:
  - Claim
  - Claimant
  - Claims Service Organization
  - Accident Date
  - Calendar Date
• Loss Location

▪ Provides the ability to measure the type of activities performed for a given claim to evaluate the effectiveness of claims processing.

▪ Supports the analysis of actual expenses, merit increase calculations, or variable compensation payouts. Some of the key information would be:

  • Detail Expenses
  • Paid Loss
  • Reserve Adjustments
  • Number of Payments per Claim
  • Number of Times Reopened
  • Number of Transactions per Claim

  ▪ Billing
  ▪ Reinsurance (deferred to RFP2)
  ▪ Agency (TBD)

    ▪ The key information provided will satisfy the analysis and trending of:

      • Written and Earned Premiums
      • Losses
      • Loss Ratios
      • Policy quotes, submissions and hit ratios
      • Planned vs. Actual

    ▪ Key metrics can be viewed by:

      • Agency Group and Individual Agencies
      • Line of Business
      • Company
• Underwriting Organization
• Market Segments
• Time (Monthly, Quarterly, Yearly)

Use of already existing industry standards (ACORD for example) as a source of the Glossary is strongly encouraged.

  • Reference metadata that supports the above concepts (not a complete list)
    • Party, Party Role
    • Products
    • Account
    • Address
    • Geography

Reference metadata modeled in other standards (such as Organization Structure metamodel – OSM and/or Party model from OMG and non-OMG standards like ACORD) should be leveraged.

• A Conceptual Data Model representing P&C business concepts with a target audience of business SMEs/users/analysts.

• A fully attributed Logical Data Model derived from the Conceptual Data Model with appropriate Identifiers, logical data types and Relationships as appropriate.

• A fully attributed Relational database Model (a.k.a. Physical Data Model) derived from the Logical Data Model to support development and interoperability of transactional systems.

• A fully attributed Dimensional Model (a.k.a. Star Schema that consists of ‘Fact Tables and Dimensions) derived from the Logical Data Model to support P&C Analytics (DW/Data Mart, BI Tools).

• An XML Schema model to support P&C data exchange and development of Data Services.

• P&C Ontology to support:
  o Development of semantic web services and use in Semantic reasoning, rules engines,
  o Support generation of OWL (Ontology Web Language) and Resource Description Framework, Common Logic, Topic Maps and Description Logic.

• Traceability of P&C Business Terms to models listed above as well as valid semantic variations where applicable (synonyms, geographical variations etc.)

6.3 **Relationship to Existing OMG Specifications**

6.3.1 **UML 2**

UML2 may be used for the Conceptual Data Model.

6.3.2 **Ontology Definition Metamodel (ODM)**

This provides coverage of conceptual information modeling in a variety of technologies (RDFS, OWL, Taxonomy Maps, Common Logic, ER) in both metamodel and UML 2 Profile. ODM must be used to represent the Ontology Model.

6.3.3 **Semantics of Business Vocabulary and Rules (SBVR)**

This covers business concepts and rules expressed in semi-formal natural language with a logic- and MOF-based formal underpinning. SBVR may be used to define the Business Glossary.

6.3.4 **MOF Queries Views Transformations (QVT)**

This covers the areas of model-to-model transformations. It may be used to express the derivations between the models required by this RFP.

6.3.5 **Common Warehouse Metamodel (CWM)**

Prior to the adoption of IMM (see next section) the CWM standard provides OMG’s normative metamodel for Relational Database and OLAP that must be used to represent the P&C XML Relational and Dimensional models.

The CWM Business Nomenclature metamodel may be used for the Business Glossary as a simpler alternative to SBVR, though the latter is preferred.
The non-normative CWM Extensions (CWMX) includes a metamodel for Entity Relationship that submitters may use for the CDM or LDM.

Note that the XML metamodel from CWM must not be used for this submission.

6.3.6 XMI

Prior to the adoption of IMM (see next section) the XMI standard provides OMG’s normative XML Schema metamodel that must be used to represent the P&C XML Schema model.

6.3.7 OMG Party Model

This provides a CORBA-oriented model for parties in a financial contract and may be relevant.

6.4 Related Activities, Documents and Standards

6.4.1 Information Management Metamodel (IMM)

This standard, under development http://www.omgwiki.org/imm/doku.php will provide metamodels and UML Profiles for XML Schema, Relational and Dimensional modeling. Submitters are strongly encouraged to intercept this standard.

6.4.2 ACORD global data Dictionary

Where possible, submitters should use the P&C business concepts defined in ACORD global data dictionary (http://www.acord.org/dataDictionary/index_dataDictionary.aspx)

6.4.3 ACORD P&C XML Schemas

6.4.4 Object Role Modeling (ORM)

Object Role Modeling (ORM, http://www.orm.net/) is a powerful method for designing and querying database models at the conceptual level, where the application is described in terms easily understood by non-technical users. In practice, ORM data models often capture more business rules, and are easier to validate and evolve than data models in other approaches. This may be used for visually representing the CDM.
6.4.5 IBM’s IAA model

6.4.6 Prima-Solutions’ reference model for insurance (IBCS-UML model)

http://www.prima-solutions.com/frontOffice/produits/primaIBCS.jsp?lang=in

Prima IBCSTM is an insurance object model (UML) covering most of the insurance domain areas. This model could serve as a source of definitions along with the ACORD and Penn National’s Analytics model

6.4.7 IDEF 1X

Submitters are referred to this as a commonly used notation that may be used for visually representing the LDM or RDM. See [IDEF1X] and [IDEF1X Hay]

6.4.8 Information Engineering

Submitters are referred to this as a commonly used notation that may be used for visually representing the LDM or RDM. See [IE Hay].

6.5 Mandatory Requirements

6.5.1 Glossary of P&C Business Terms as described in 6.1.2

Business Terms must be defined in English, though a more formal definition using SBVR is also encouraged.

The following metadata associated with each Business Term must also be provided:

- Format
- Source (date, version) Provenance
- Valid variations

Relationships between terms must be defined, such as:

- Generalizations/specializations
- Synonyms/aliases
- Related terms
6.5.2 Submitters must provide a P&C Conceptual Data Model (CDM) as described in 6.1.3. The CDM shall consist of business Entities and Relationships. Each shall be mapped to one or more Terms in the Business Glossary. The CDM shall be represented using either UML or the CWMX Entity Relationship metamodel. The CDM shall be visualized using one or more of the following notations: UML, IDEF1X, IE, ORM

6.5.3 Submitters must provide a fully attributed P&C Logical Data Model (LDM) as described in 6.1.4. The LDM shall consist of Entities, Attributes, Relationships and Subject Areas. Each shall be mapped to one or more Terms in the Business Glossary. The LDM shall be represented using the CWMX Entity Relationship metamodel. The LDM shall be visualized using one or more of the following notations: IDEF1X, IE.

6.5.4 Submitters must provide a P&C Relational Database Model as described in 6.1.5. The relational model shall be expressed using the CWM Relational metamodel. Each element shall be mapped to one or more elements in the LDM It shall be visualized using one or more of the following notations: IDEF1X, IE. The RDM shall also be provided as a non-normative SQL Data Definition Language file.

6.5.5 Submitters must provide a P&C Dimensional Model as described in 6.1.6. The dimensional model shall be expressed using the CWM OLAP and Relational metamodels. Each element shall be mapped to one or more elements in the LDM It shall be visualized using one or more of the following notations: IDEF1X, IE.
The RDM shall also be provided as a non-normative SQL Data Definition Language file.

6.5.6 Submitters must provide a P&C XML Schema model as described in 6.1.7.

The XML Schema model shall be expressed using the XML Schema metamodel in the XML standard.

Each element shall be mapped to one or more elements in the LDM

It shall be visualized using a UML Profile or a proprietary notation.

The XML Schema shall be provided as a usable and publishable XSD file.

6.5.7 Submitters must provide a P&C Ontology as described in 6.1.8

A P&C Ontology shall be provided, expressed using the OWL metamodel in the ODM standard. Support for generation of OWL (Ontology Web Language) and Resource Description Framework, Common Logic, Topic Maps and Description Logic shall also be provided.

- All elements shall be traced to the Business Glossary.
- It shall be visualized using the UML Profile for ODM.
- It shall be provided as a usable OWL file.

6.6 Optional Requirements

6.6.1 A list of Fact Tables other than those described in section 6.5.5 for the Dimensional/Analytical model is an optional requirement.

6.6.2 Provision of Transformations

Submitters may provide formal QVT transformations for the derivations listed in Needs to be discussed. Candidate Transformations:

- Conceptual model to Logical data model
- Logical data model to relational database model
- Logical data model to Dimensional model
6.7 Issues to be discussed

These issues will be considered during submission evaluation. They should not be part of the proposed normative specification. (Place them in Part I of the submission.)

6.7.1 Rationale for physical model derivation

Where submitters have needed to make design choices then these must be described together with their rationale. For example:

- The use of elements or attributes or both) in XML Schema

6.7.2 Business traceability

Submitters shall describe how the traceability incorporated into their models allows for understanding of physical elements through linkage back to the business concept.

6.7.3 Impact analysis

Submitters shall describe how the traceability incorporated into their models allows for impact analysis – for example the effect of changing a Relationship in the LDM. For several such scenarios they shall describe how to determine, through navigation/query of the proposed models, the physical elements affected.

6.7.4 Translation of Business Glossary to other languages

Submitters shall be responsible for translation of the P&C Business Glossary to languages other than US English as needed including ongoing maintenance (an optional requirement).

6.8 Evaluation Criteria

Proposals will be evaluated on:

- Ability to seamlessly transform one representation of a model to another without losing semantic integrity
- Similarity and compatibility with existing Glossary and XML Schema standards for P&C from ACORD
6.9 Other information unique to this RFP

None.

6.10 RFP Timetable

The timetable for this RFP is given below. Note that the TF or its parent TC may, in certain circumstances, extend deadlines while the RFP is running, or may elect to have more than one Revised Submission step. The latest timetable can always be found at the OMG Work In Progress page at http://www.omg.org/schedules/ under the item identified by the name of this RFP. Note that “<month>” and “<approximate month>” is the name of the month spelled out; e.g., January.

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<td>May 2007</td>
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<td>RFP placed on OMG document server</td>
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<td>Approval of RFP by Architecture Board Review by TC</td>
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<td>TC votes to issue RFP</td>
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<td>LOI to submit to RFP due</td>
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<td>Initial Submissions due and placed on OMG document server (“Three week rule”)</td>
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<td>Recommendation to AB and TC</td>
<td></td>
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<tr>
<td>Approval by Architecture Board Review by TC</td>
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<tr>
<td>TC votes to recommend specification</td>
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<tr>
<td>BoD votes to adopt specification</td>
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</table>
Appendix A  References and Glossary Specific to this RFP

A.1 References Specific to this RFP

The following documents are referenced in this document:

[ACORD Global Data Dictionary]


[IDEF1X FIPS184]
http://www.itl.nist.gov/fipspubs/idef1x.doc

[SQL 92]
ISO Standard

[XML Infoset]
W3.org

A.2 Glossary Specific to this RFP

P&C Business Glossary

Conceptual Model

Logical Data Model

Physical Data Model

Relational model

Dimensional model

XML Schema model

P&C Ontology

IDEF 1X  - Commonly used notation for logical models of relational databases, standardized by NIST See [IDEF1X FIPS184] and [IDEF1X Hayes].
Information Engineering (IE) – Widely used traditional software development method, focused on data analysis. Includes a commonly used data modeling notation, most famous for using ‘crows feet’ to represent multiplicity.

Data Definition Language (DDL) – The part of SQL (typically) used for declaring information structures (Tables, Columns, Schemas) as opposed to manipulating them.

Appendix B General Reference and Glossary

B2 General Glossary

Glossary - a list of terms in a special subject, field, or area of usage, with accompanying definitions

Architecture Board (AB) - The OMG plenary that is responsible for ensuring the technical merit and MDA-compliance of RFPs and their submissions.

Board of Directors (BoD) - The OMG body that is responsible for adopting technology.

Common Object Request Broker Architecture (CORBA) - An OMG distributed computing platform specification that is independent of implementation languages.

Common Warehouse Metamodel (CWM) - An OMG specification for data repository integration.

CORBA Component Model (CCM) - An OMG specification for an implementation language independent distributed component model.

Interface Definition Language (IDL) - An OMG and ISO standard language for specifying interfaces and associated data structures.

Letter of Intent (LOI) - A letter submitted to the OMG BoD’s Business Committee signed by an officer of an organization signifying its intent to respond to the RFP and confirming the organization’s willingness to comply with OMG’s terms and conditions, and commercial availability requirements.

Mapping - Specification of a mechanism for transforming the elements of a model conforming to a particular metamodel into elements of another model that conforms to another (possibly the same) metamodel.

Metadata - Data that represents models. For example, a UML model; a CORBA object model expressed in IDL; and a relational database schema expressed using CWM.

Metamodel - A model of models.
**Meta Object Facility (MOF)** - An OMG standard, closely related to UML, that enables metadata management and language definition.

**Model** - A formal specification of the function, structure and/or behavior of an application or system.

**Model Driven Architecture (MDA)** - An approach to IT system specification that separates the specification of functionality from the specification of the implementation of that functionality on a specific technology platform.

**Normative** – Provisions that one must conform to in order to claim compliance with the standard. (as opposed to non-normative or informative which is explanatory material that is included in order to assist in understanding the standard and does not contain any provisions that must be conformed to in order to claim compliance).

**Normative Reference** – References that contain provisions that one must conform to in order to claim compliance with the standard that contains said normative reference.

**Platform** - A set of subsystems/technologies that provide a coherent set of functionality through interfaces and specified usage patterns that any subsystem that depends on the platform can use without concern for the details of how the functionality provided by the platform is implemented.

**Platform Independent Model (PIM)** - A model of a subsystem that contains no information specific to the platform, or the technology that is used to realize it.

**Platform Specific Model (PSM)** - A model of a subsystem that includes information about the specific technology that is used in the realization of it on a specific platform, and hence possibly contains elements that are specific to the platform.

**Request for Information (RFI)** - A general request to industry, academia, and any other interested parties to submit information about a particular technology area to one of the OMG's Technology Committee subgroups.

**Request for Proposal (RFP)** - A document requesting OMG members to submit proposals to the OMG's Technology Committee. Such proposals must be received by a certain deadline and are evaluated by the issuing task force.

**Task Force (TF)** - The OMG Technology Committee subgroup responsible for issuing a RFP and evaluating submission(s).

**Technology Committee (TC)** - The body responsible for recommending technologies for adoption to the BoD. There are two TCs in OMG – *Platform TC* (PTC), that focuses on IT and modeling infrastructure related standards; and *Domain TC* (DTC), that focus on domain specific standards.
Unified Modeling Language (UML) - An OMG standard language for specifying the structure and behavior of systems. The standard defines an abstract syntax and a graphical concrete syntax.

UML Profile - A standardized set of extensions and constraints that tailors UML to particular use.

XML Metadata Interchange (XMI) - An OMG standard that facilitates interchange of models via XML documents.