

The CellML Metadata 1.0 Specification

Working Draft - 2 November 2001

A Cmeta Terms RDF SChema Draft

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<?xml version="1.0" encoding="iso-8859-1"?>
<!--This Version:
Title: RDF Schema Declaration Draft for CellML Metadata terms.

Creator: Autumn A. Cuellar
Bioengineering Research Group, The University of Auckland

Date Created: 2001-11-02

Comments: This is a preliminary version to be used only as a model and will
almost certainly change.
Comments may be sent to cellml-discussion@cellml.org.-->

<!DOCTYPE rdf:RDF [
<!ENTITY rdfns 'http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
<!ENTITY rdfsns 'http://www.w3.org/2000/01/rdf-schema#'>
<!ENTITY dcns 'http://purl.org/dc/elements/1.1/'>
<!ENTITY dcqns 'http://purl.org/dc/terms/'>
<!ENTITY cmetans 'http://www.cellml.org/metadata/1.0#'>
]>

<rdf:RDF
  xmlns:cmeta="&cmetans;"
  xmlns:dc="&dcns;"
  xmlns:dcq="&dcqns;"
  xmlns:rdf="&rdfsns;"
  xmlns:rdfs="&rdfsns;">

  <!--Description of this Schema-->
  <rdf:Description rdf:about="&cmetans;">
    <dc:title>The CellML Metadata Element Set Vocabulary</dc:title>
    <dc:creator>Autumn A. Cuellar</dc:creator>
    <dcq:created>
      <dcq:W3CDTF>2001-11-02</dcq:W3CDTF>
    </dcq:created>
    <dcq:RFC1766>en-uk</dcq:RFC1766>
    <dc:description>
      The CellML Metadata Element Set Vocabulary is intended to enable searches
      of a CellML model repository of biological models.
    </dc:description>
  </rdf:Description>

  <!--Sex-->
  <rdf:Property rdf:about="&cmetans;sex">
    <rdfs:label>Sex</rdfs:label>
    <rdfs:comment>The sex for which a CellML element is relevant.</rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&cmetans;" />
  </rdf:Property>

  <!--Biological Entity-->
  <rdf:Property rdf:about="&cmetans;bio_entity">
    <rdfs:label>Biological Entity</rdfs:label>
    <rdfs:comment>
      A name or database unique identifier for a biological entity.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&cmetans;" />
  </rdf:Property>

  <!--Alternative Database Identifier-->
  <rdf:Property rdf:about="&cmetans;alternative">
    <rdfs:label>Alternative Database Identifier</rdfs:label>
    <rdfs:comment>
      An alternative database unique identifier for a biological entity.
    </rdfs:comment>
    <rdfs:subPropertyOf rdf:resource="&cmetans;bio_entity" />
    <rdfs:isDefinedBy rdf:resource="&cmetans;" />
  </rdf:Property>

  <!--Mathematical Problem Type: GAMS classification tree-->
  <rdf:Property rdf:about="&cmetans;alternative">
    <rdfs:label>Mathematical Problem Type: GAMS classification tree</rdfs:label>
    <rdfs:comment>
      A classification of the type of problem encoded in the math associated
      with the CellML model or model component.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&cmetans;" />
    <rdfs:seeAlso rdf:resource="http://gams.nist.gov" />
  </rdf:Property>

  <!--Annotation-->
  <rdf:Property rdf:about="&cmetans;annotation">
    <rdfs:label>Annotation</rdfs:label>
    <rdfs:comment>
      An annotation that describes the CellML model or model component.
    </rdfs:comment>
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    <rdfs:isDefinedBy rdf:resource="&cmetsans;" />
  </rdf:Property>

  <!--Annotation:comment-->
  <rdf:Property rdf:about="&cmetsans;comment">
    <rdfs:label>Comment</rdfs:label>
    <rdfs:comment>
      A free-form comment of the person who coded the model into CellML.
    </rdfs:comment>
    <rdf:type rdf:resource="&cmetsans;annotation" />
    <rdfs:isDefinedBy rdf:resource="&cmetsans;" />
  </rdf:Property>

  <!--Annotation:limitation-->
  <rdf:Property rdf:about="&cmetsans;limitation">
    <rdfs:label>Limitation</rdfs:label>
    <rdfs:comment>
      A description of the limitations/scope of the content of the CellML
      element.
    </rdfs:comment>
    <rdf:type rdf:resource="&cmetsans;annotation" />
    <rdfs:isDefinedBy rdf:resource="&cmetsans;" />
  </rdf:Property>

  <!--Annotation:modification-->
  <rdf:Property rdf:about="&cmetsans;modification">
    <rdfs:label>Modification</rdfs:label>
    <rdfs:comment>
      A description of a change made to the content of the CellML element.
    </rdfs:comment>
    <rdf:type rdf:resource="&cmetsans;annotation" />
    <rdfs:isDefinedBy rdf:resource="&cmetsans;" />
  </rdf:Property>

  <!--Annotation:validation-->
  <rdf:Property rdf:about="&cmetsans;validation">
    <rdfs:label>Validation</rdfs:label>
    <rdfs:comment>
      A description of the level of the content of the CellML element.
    </rdfs:comment>
    <rdf:type rdf:resource="&cmetsans;annotation" />
    <rdfs:isDefinedBy rdf:resource="&cmetsans;" />
  </rdf:Property>

</rdf:RDF>

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B BQS Terms RDF Schema Draft

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<?xml version="1.0" encoding="iso-8859-1"?>

<!--This Version:
Title: RDF Schema Declaration Draft for Bibliographic Query Service terms.

Creator: Autumn A. Cuellar
      Bioengineering Research Group, The University of Auckland

Date Created: 2001-11-02

Comments: This is a preliminary version to be used only as a model and will
          almost certainly change (constraints need to be added, etc.).
          Comments may be sent to cellml-discussion@cellml.org.-->

<!DOCTYPE rdf:RDF [
  <!--ENTITY rdfns 'http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
  <!--ENTITY rdfsns 'http://www.w3.org/2000/01/rdf-schema#'>
  <!--ENTITY dcns 'http://purl.org/dc/elements/1.1/'>
  <!--ENTITY dcqns 'http://purl.org/dc/terms/'>
  <!--ENTITY bqnsns 'http://www.cellml.org/bqs/1.0#'>
]>

<rdf:RDF
  xmlns:bqnsns="&bqns;"
  xmlns:dc="&dcns;"
  xmlns:dcq="&dcqns;"
  xmlns:rdf="&rdfns;"
  xmlns:rdfs="&rdfsns;">

  <!--Description of this Schema-->
  <rdf:Description rdf:about="&bqnsns;">
    <dc:title>The Bibliographic Query Service Element Set Vocabulary</dc:title>
    <dc:creator>Autumn A. Cuellar</dc:creator>
    <dcq:created>
      <dcq:W3CDTF>2001-11-02</dcq:W3CDTF>
    </dcq:created>
    <dcq:RFC1766>en-uk</dcq:RFC1766>
    <dc:description>
      The Bibliographic Query Service Element Set Vocabulary is intended to
      enhance searches of any document containing bibliographic references.
    </dc:description>
  </rdf:Description>

  <!--BibliographicReference Class-->
  <rdf:Property rdf:about="&bqnsns;reference">
    <rdfs:label>reference</rdfs:label>
    <rdfs:comment>
      The root class for all BQS bibliographic references.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqnsns;" />
  </rdf:Property>

  <!--Bibliographic Identifier Scheme-->
  <rdf:Property rdf:about="&bqnsns;identifier_scheme">
    <rdfs:label>Identifier Scheme</rdfs:label>
    <rdfs:comment>
      Identifies a cited reference using a database unique identifier.
    </rdfs:comment>
    <rdfs:subPropertyOf rdf:resource="&dcns;identifier" />
    <rdfs:isDefinedBy rdf:resource="&bqnsns;" />
  </rdf:Property>

  <!--Medline Identifier Scheme-->
  <rdf:Property rdf:about="&bqnsns;Medline_id">
    <rdfs:label>Medline identifier</rdfs:label>
    <rdfs:comment>
      The Medline database unique identifier.
    </rdfs:comment>
    <rdfs:type rdf:resource="&bqnsns;identifier_scheme" />
    <rdfs:seeAlso rdf:resource="http://medline.cos.com" />
    <rdfs:isDefinedBy rdf:resource="&bqnsns;" />
  </rdf:Property>

  <!--PubMed Identifier Scheme-->
  <rdf:Property rdf:about="&bqnsns;PubMed_id">
    <rdfs:label>PubMed identifier</rdfs:label>
    <rdfs:comment>
      The PubMed database unique identifier.
    </rdfs:comment>
    <rdfs:type rdf:resource="&bqnsns;identifier_scheme" />
    <rdfs:seeAlso rdf:resource="http://www4.ncbi.nlm.nih.gov/PubMed/" />
    <rdfs:isDefinedBy rdf:resource="&bqnsns;" />
  </rdf:Property>

  <!--CAS Identifier Scheme-->
  <rdf:Property rdf:about="&bqnsns;CAS_id">
    <rdfs:label>CAS (Chemical Abstract Service) identifier</rdfs:label>
    <rdfs:comment>
      The CAS database unique identifier.
    </rdfs:comment>
    <rdfs:type rdf:resource="&bqnsns;identifier_scheme" />
    <rdfs:seeAlso rdf:resource="http://www.cas.org/" />
    <rdfs:isDefinedBy rdf:resource="&bqnsns;" />
  </rdf:Property>

  <!--Reference Type-->
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<rdf:Property rdf:about="&bqsns;reference_type">
  <rdfs:label>Reference Type</rdfs:label>
  <rdfs:comment>
    Identifies the genre of a cited reference.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:Article-->
<rdf:Property rdf:about="&bqsns;Article">
  <rdfs:label>Article</rdfs:label>
  <rdfs:comment>
    The cited reference is an article.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:JournalArticle-->
<rdf:Property rdf:about="&bqsns;JournalArticle">
  <rdfs:label>JournalArticle</rdfs:label>
  <rdfs:comment>
    The cited reference is a journal article.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;Article" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:BookArticle-->
<rdf:Property rdf:about="&bqsns;BookArticle">
  <rdfs:label>BookArticle</rdfs:label>
  <rdfs:comment>
    The cited reference is a book article.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;Article" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:Book-->
<rdf:Property rdf:about="&bqsns;Book">
  <rdfs:label>Book</rdfs:label>
  <rdfs:comment>
    The cited reference is a book.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:Patent-->
<rdf:Property rdf:about="&bqsns;Patent">
  <rdfs:label>Patent</rdfs:label>
  <rdfs:comment>
    The cited reference is a patent.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:Proceeding-->
<rdf:Property rdf:about="&bqsns;Proceeding">
  <rdfs:label>Proceeding</rdfs:label>
  <rdfs:comment>
    The cited reference is a proceeding.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:TechReport-->
<rdf:Property rdf:about="&bqsns;TechReport">
  <rdfs:label>Technical Report</rdfs:label>
  <rdfs:comment>
    The cited reference is a technical report.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:Thesis-->
<rdf:Property rdf:about="&bqsns;Thesis">
  <rdfs:label>Thesis</rdfs:label>
  <rdfs:comment>
    The cited reference is a thesis.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Reference Type:WebResource-->
<rdf:Property rdf:about="&bqsns;WebResource">
  <rdfs:label>WebResource</rdfs:label>
  <rdfs:comment>
    The cited reference is a web resource.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqsns;reference_type" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Provider Type-->
<rdf:Property rdf:about="&bqsns;provider_type">
  <rdfs:label>provider type</rdfs:label>

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<rdfs:comment>
  Who the resource is provided by.
</rdfs:comment>
<rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Provider Type:Person-->
<rdf:Property rdf:about="&bqns;Person">
  <rdfs:label>Person</rdfs:label>
  <rdfs:comment>
    The resource is provided by a person.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqns;provider_type" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Provider Type:Organization-->
<rdf:Property rdf:about="&bqns;Organization">
  <rdfs:label>Organization</rdfs:label>
  <rdfs:comment>
    The resource is provided by an organization.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqns;provider_type" />
  <rdf:seeAlso rdf:resource="&bqns;Organisation" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Provider Type:Organisation-->
<rdf:Property rdf:about="&bqns;Organisation">
  <rdfs:label>Organisation</rdfs:label>
  <rdfs:comment>
    The resource is provided by an organisation.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqns;provider_type" />
  <rdf:seeAlso rdf:resource="&bqns;Organization" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Provider Type:Service-->
<rdf:Property rdf:about="&bqns;Service">
  <rdfs:label>Service</rdfs:label>
  <rdfs:comment>
    The resource is provided by a service.
  </rdfs:comment>
  <rdf:type rdf:resource="&bqns;provider_type" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Subject Type-->
<rdf:Property rdf:about="&bqns;subject_type">
  <rdfs:label>subject type</rdfs:label>
  <rdfs:comment>
    Defines the topic of a resource.
  </rdfs:comment>
  <rdfs:subPropertyOf rdf:resource="&dcns;subject" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Subject Type:Keyword-->
<rdf:Property rdf:about="&bqns;keyword">
  <rdfs:label>keyword</rdfs:label>
  <rdfs:comment>
    Defines the topic of a resource using keywords.
  </rdfs:comment>
  <rdf:type rdf:resource="&dcns;subject_type" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Subject Type:Subject Heading-->
<rdf:Property rdf:about="&bqns;subject_heading">
  <rdfs:label>subject heading</rdfs:label>
  <rdfs:comment>
    Defines the topic of a resource using subject headings.
  </rdfs:comment>
  <rdf:type rdf:resource="&dcns;subject_type" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Subject Type:Classification Code-->
<rdf:Property rdf:about="&bqns;classification_code">
  <rdfs:label>classification code</rdfs:label>
  <rdfs:comment>
    Defines the topic of a resource using classification codes.
  </rdfs:comment>
  <rdf:type rdf:resource="&dcns;subject_type" />
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Entry Status-->
<rdf:Property rdf:about="&bqns;entry_status">
  <rdfs:label>Entry Status</rdfs:label>
  <rdfs:comment>
    Provides information about the citation, as opposed to the cited
    reference.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqns;" />
</rdf:Property>

<!--Subset-->
<rdf:Property rdf:about="&bqns;subset">
  <rdfs:label>Subset</rdfs:label>

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    <rdfs:comment>
      Provides reference subset information.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Property-->
  <rdf:Property rdf:about="&bqsns;property">
    <rdfs:label>Property</rdfs:label>
    <rdfs:comment>
      Provides a property about the reference.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Property Type-->
  <rdf:Property rdf:about="&bqsns;property_type">
    <rdfs:label>Property Type</rdfs:label>
    <rdfs:comment>
      Declares the property name.
    </rdfs:comment>
    <rdfs:subPropertyOf rdf:resource="&bqsns;property" />
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Book:ISBN-->
  <rdf:Property rdf:about="&bqsns;isbn">
    <rdfs:label>International Standard Book Number</rdfs:label>
    <rdfs:comment>
      International Standard Book Number unique identifier.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Book (& Article):Volume-->
  <rdf:Property rdf:about="&bqsns;volume">
    <rdfs:label>Volume</rdfs:label>
    <rdfs:comment>
      Book or journal volume number.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Book:Edition-->
  <rdf:Property rdf:about="&bqsns;edition">
    <rdfs:label>Edition</rdfs:label>
    <rdfs:comment>
      Book edition.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Book:Series-->
  <rdf:Property rdf:about="&bqsns;series">
    <rdfs:label>Series</rdfs:label>
    <rdfs:comment>
      The title of the series of which the book is a member.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Book:Editor-->
  <rdf:Property rdf:about="&bqsns;editor">
    <rdfs:label>Editor</rdfs:label>
    <rdfs:comment>
      The books's editor.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Article:first_page-->
  <rdf:Property rdf:about="&bqsns;first_page">
    <rdfs:label>First Page</rdfs:label>
    <rdfs:comment>
      The first page of the article referenced.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Article:last_page-->
  <rdf:Property rdf:about="&bqsns;last_page">
    <rdfs:label>Last Page</rdfs:label>
    <rdfs:comment>
      The last page of the article referenced.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Article:last_page-->
  <rdf:Property rdf:about="&bqsns;last_page">
    <rdfs:label>Last Page</rdfs:label>
    <rdfs:comment>
      The last page of the article referenced.
    </rdfs:comment>
    <rdfs:isDefinedBy rdf:resource="&bqsns;" />
  </rdf:Property>

  <!--Article:issue-->
  <rdf:Property rdf:about="&bqsns;issue">
    <rdfs:label>Issue</rdfs:label>
    <rdfs:comment>

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    The issue in which the referenced article is found.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Article:issue_supplement-->
<rdf:Property rdf:about="&bqsns;issue_supplement">
  <rdfs:label>Issue Supplement</rdfs:label>
  <rdfs:comment>
    The issue supplement in which the referenced article is found.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Journal-->
<rdf:Property rdf:about="&bqsns;Journal">
  <rdfs:label>Journal</rdfs:label>
  <rdfs:comment>
    Journal reference.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Journal:ISSN-->
<rdf:Property rdf:about="&bqsns;issn">
  <rdfs:label>International Standard Serial Number</rdfs:label>
  <rdfs:comment>
    International Standard Serial Number unique identifier.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Journal:abbreviation-->
<rdf:Property rdf:about="&bqsns;abbreviation">
  <rdfs:label>Abbreviation</rdfs:label>
  <rdfs:comment>
    Journal abbreviation.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--Journal:abbreviation_scheme-->
<rdf:Property rdf:about="&bqsns;abbreviation_scheme">
  <rdfs:label>Abbreviation Scheme</rdfs:label>
  <rdfs:comment>
    Standard journal abbreviation scheme.
  </rdfs:comment>
  <rdfs:subPropertyOf rdf:resource="&bqsns;abbreviation" />
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--WebResource:url-->
<rdf:Property rdf:about="&bqsns;url">
  <rdfs:label>Uniform Resource Locator</rdfs:label>
  <rdfs:comment>
    The Uniform Resource Locator that identifies the Web Resource.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--WebResource:estimated_size-->
<rdf:Property rdf:about="&bqsns;estimated_size">
  <rdfs:label>Estimated Size</rdfs:label>
  <rdfs:comment>
    The estimated size of the Web Resource.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>

<!--WebResource:cost-->
<rdf:Property rdf:about="&bqsns;cost">
  <rdfs:label>Cost</rdfs:label>
  <rdfs:comment>
    The cost of the Web Resource.
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource="&bqsns;" />
</rdf:Property>
</rdf:RDF>

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C Changes between the 18 May 2001 Research Summary and the 2 November 2001 Working Draft

- Specification Wide
 - Many minor editorial changes have been made to all sections of the specification.
 - Examples have been updated and expanded where appropriate.
- Section 2.1.2: The Advantages of Using RDF
 - New information about the W3C's "SiRPAC" has been included.
- Section 2.1.3: Multiple Methods for Expressing Metadata in RDF
 - Now includes [The RDF Model and Syntax Specification](#)¹
- Section 2.2.1: What is the Dublin Core?
 - Now contains information about two relevant articles from the Dublin Core Metadata Initiative: [Expressing Simple Dublin Core in RDF/XML](#)² and [Expressing Qualified Dublin Core in RDF/XML](#)³.
- Section 2.2.2: The Advantages of Using Dublin Core
 - Defines the use of the prefixes **dc** (for Dublin Core) and **dcq** (Dublin Core Qualifiers).
- Section 2.3: vCard
 - A new section that explains the use of the "vCard" system to give metadata about people. It has been included as the now standard method for this type information.
- Section 2.4: Bibliographic Query Service
 - A generalized description of bibliographic referencing in RDF.
- Section 2.5: CellML Metadata
 - A new section that describes the use of the **cmeta** namespace prefix for all otherwise undefined CellML relevant metadata.
- Section 2.6: Namespaces in CellML Metadata
 - With an accompanying table, appropriate namespace URIs and prefixes are given.
- Section 3: Fundamentals
 - This section provides a new description of metadata as it is defined within the an **<rdf:RDF>** element.

¹<http://www.w3.org/TR/REC-rdf-syntax/>

²<http://dublincore.org/documents/dcmes-xml/>

³<http://dublincore.org/documents/dcq-rdf-xml/>

- Section 3.2: Dublin Core Elements and Qualifiers
 - A new table (Table 2) is provided giving suitable Dublin Core Metadata elements and their respective qualifiers.
- Section 4.5: Creation Date
 - **<dcq:creation>** & **<dcq:w3CDTF>** now replace **<dc:date>** with the value "created", **<dcq:dateType>** and **<dcq:dateScheme>**.
- Section 4.6: Modified Date
 - **<dcq:modified>** replaces the **<dcq:dateType>** with the value of "modified".
- Section 4.7: Alternative Names
 - **<dcq:alternative>** replaces **<dcq:titleType>** with the value of "alternative".
- Section 4.9: Sex
 - The addition of the controlled vocabulary "other" and "all" has been made.
- Section 4.10: Biological Entity
 - Alternative biological entity names are now described using the **<dcq:alternative>** element within **<cmeta:bio_entity>** element. This replaces the previous **<dc:title>** qualified by a **<dcq:titleType>** with the value "alternative".
 - The following encoding schemes have now been added to those previously defined: GO Consortium (Gene Ontology controlled vocabulary), OMIM (Online Mendelian Inheritance in Man catalog of human genes and genetic disorders), LocusLink (LocusLink Genetic Loci database), and Unigene (GenBank non-redundant gene clusters database).
 - Figure 20 now includes the use of the **<rdfs:label>** element (an alternative to the **<dc:title>** element).
- Section 4.11: Mathematical Problem Type
 - **<dcq:abstract>** or **<dcq:tableOfContents>** replaces the previous **<dc:description>** that was qualified by **<dcq:descriptionType>**.
- Section 4.12: Description
 - **<dcq:modified>** replaces the **<dcq:dateType>** with the value of "modified".
- Section 4.13: Annotations
 - **<cmeta:comment>**, **<cmeta:limitation>**, **<cmeta:modification>** & **<cmeta:validation>** are now recommended instead of **<cmeta:annotation>** with the **<cmeta:annotation_type>** qualifier.
- Section 5: Citations

- A new comprehensive section on citations has been added.
- Section 5.2.1: The **identifier** attribute
 - The database elements **<bqs:medline_id>**, **<bqs:PubMed_id>** & **<bqs:CAS_id>** replaces the need for the **<dc:identifier_scheme>** element to be used with the value of the database.
- Section 5.2.2: The **cross_references** attribute
 - **<bqs:alternative>** element can provide an alternative identifier and replaces the **<dc:identifier>** and **<bqs:identifier_type>** combination.
- Section 5.2.3: The **type** attribute
 - **<bqs:JournalArticle>** replaces **<bqs:reference_type>**.
- Section 5.2.6: The **language** attribute
 - It is recommended that the RFC1766 encoding scheme is used to define the language of the cited resource. The **<dc:RFC1766>** element replaces **<dcq:language>**.
- Section 5.2.7: The **format** attribute
 - **<dcq:medium>** element qualified by **<dcq:IMT>** is recommended to describe the cited resource, replacing **<dc:format>**.
- Section 5.2.8: The **date** attribute
 - Updated to embrace the W3C-DTF format. **<dcq:issued>** qualified by **<dcq:W3CDTF>** replaces the **<dc:date>** element.
- Section 5.4: The **<BibRefSubject>** class
 - Keywords: **<bqs:keywords>** replaces **<bqs:subject_type>** value = keyword.
 - Subheadings: **<bqs:subject_heading>** with **<dcq:LCSH>** or **<dcq:MESH>** replace **<bqs:subject_type>**, value = subject heading and **<dcq:subjectscheme>** value = LCSH or UDC.
 - Codes: **<bqs:classification_code>** with **<dcq:DDC>** or **<dcq:UDC>** replaces **<bqs:subject_type>** value=classification_code with **<dcq:subjectScheme>** with value = DDC or LCC.
- Section 5.5: The **BibRefDescription** class
 - The **<dcq:abstract>** & **<dcq:tableOfContents>** elements replace **<dcq:description_type>** with the values of abstract or tableofcontents.
 - Abstract_type and toc_type can be serialized with **<dcq:IMT>** instead of the previous **<dcq:format>**.
 - Similarly the **<dcq:IMT>** element replaces **<dc:format>** when used if the abstract or table of contents is supplied by a URI.
- Section 5.7: The **EntryStatus** class

- Information about the modification date of a citation is now given by the **<dcq:modified>** element replacing the **<dc:date>** element.
- Section 5.10.1: The **Book** subclass
 - The editor subclass element **<bqs:editor>** replaces the **<dc:contributor>** qualified by **<bqs:contributor_type>** with value = editor.
- Section 5.10.2: The **Article** subclass and its subclasses
 - The from_book attribute is now **<bqs:book>** instead of the **<bqs:reference>** with the type 'book'.
- Appendices
 - Two new appendices "Cmeta Terms RDF Schema Draft" and "BQS Terms RDF Schema Draft" have been added.