```
XML TOPIC MAPS DOCTYPE
                                                                                   </instanceOf>
                                                                                                                                                                                                                         § 3.7.4
                                                                                                                                                        variantName
                                                                                  <!-- base names and occurrences go here -->
<!DOCTYPE topicMap
                                                                                                                                                        CM: (resourceRef | resourceData)
                                                                                 </topic>
         PUBLIC "-//TopicMaps.Org//DTD XML Topic Map (XTM) 1.0//EN"
                                                                                                                                                        AT: id
                                                                                                                                                                                 #IMPLIED
                                                                                                                                                                         TD
          "http://www.topicmaps.org/xtm/1.0/xtm1.dtd">
                                                                            subjectIdentity
                                                                                                                                             § 3.6.2
                                                                                                                                                        Ex: see variant
           REFERENCES TO TOPICS AND SUBJECT INDICATORS
                                                                            CM: (resourceRef?, (topicRef | subjectIndicatorRef)*)
                                                                                                                                                                                                                         § 3.7.5
                                                                                                                                                        parameters
                                                                            AT: id
                                                                                            ID
                                                                                                     #IMPLIED
topicRef
                                                                 § 3.2.1
                                                                            Ex: <topic id="dk">
                                                                                                                                                        CM: (topicRef |
                                                                                                                                                                        subjectIndicatorRef)+
                                                                                                                                                        bi :TA
                                                                                                                                                                         TD
                                                                                  <subjectIdentity>
CM: FMDTV
                                                                                                                                                        Ex: see variant
                                                                                    <subjectIndicatorRef xlink:href="/country.xtm#dk"/>
AT: id
                         #IMPLIED
                                                                                   </subjectIdentity>
                                                                                                                                                                             ASSOCIATIONS AND MEMBERS
    xlink:type NMTOKEN #FIXED 'simple'
                                                                                </topic>
    xlink:href CDATA #REOUIRED
                                                                            Ex: <topic id="da">
                                                                                                                                                                                                                         § 3.8.1
                                                                                                                                                        association
Ex: <topicRef
                                                                                   <subjectIdentity>
      xlink:href="http://www.topicmaps.org/xtm/1.0/language.xtm#en"/>
                                                                                                                                                        CM: (instanceOf?, scope?, member+)
                                                                                    <subjectIndicatorRef xlink:href="/factbook/geos/da.html"/>
Ex: <topicRef xlink:href="#play"/>
                                                                                                                                                                        TD
                                                                                                                                                        AT: id
                                                                                                                                                                                 #TMPLTED
                                                                                  </subjectIdentity>
                                                                                                                                                        Ex: <association id="will-wrote-hamlet">
subjectIndicatorRef
                                                                 § 3.2.2
                                                                                </topic>
                                                                                                                                                              <instanceOf><topicRef xlink:href="#written-by"/>
                                                                            Ex: <topic id="denmark">
CM: FMDTV
                                                                                  <subjectIdentity>
                                                                                                                                                               </instanceOf>
AT: id
                         #IMPLIED
                 TD
                                                                                                                                                               <member>
                                                                                    <subjectIndicatorRef xlink:href="/country.xtm#dk"/>
    xlink:type NMTOKEN #FIXED 'simple'
                                                                                     <subjectIndicatorRef xlink:href="/factbook/geos/da.html"/>
                                                                                                                                                                <roleSpec>
    xlink:href CDATA #REOUIRED
                                                                                                                                                                  <topicRef xlink:href="#author"/>
                                                                                  </subjectIdentity>
Ex: <subjectIndicatorRef xlink:href="/language.xtm#en"/>
                                                                                 </topic>
                                                                                                                                                                </re>
Ex: <subjectIndicatorRef xlink:href="/plays.html#hamlet"/>
                                                                                                                                                                <topicRef xlink:href="#shakespeare"/>
                                                                                                         TOPIC NAMES
                                                                                                                                                               </member>
                         SCOPE AND CONTEXT
                                                                                                                                                               <member>
                                                                                                                                             § 3.7.1
                                                                            baseName
                                                                                                                                                                 <roleSpec>
scope
                                                                 § 3.3.1
                                                                                                                                                                  <topicRef xlink:href="#work"/>
                                                                            CM: (scope?, baseNameString, variant*)
CM: (topicRef | resourceRef | subjectIndicatorRef)+
                                                                                                                                                                 </releSpec>
                                                                                            ID
                                                                                                    #IMPLIED
                                                                            AT: id
                         #IMPLIED
AT: id
                 TD
                                                                           Ex: <topic id="shakespeare">
                                                                                                                                                                <topicRef xlink:href="#hamlet"/>
Ex: <scope>
                                                                                                                                                               </member>
                                                                                   <baseName>
      <subjectIndicatorRef xlink:href="/language.xtm#en"/>
                                                                                                                                                            </association>
                                                                                    <baseNameString>William Shakespeare/baseNameString>
    </scope>
                                                                                  </haseName>
                                                                                                                                                                                                                         § 3.8.2
                                                                                                                                                        member
Ex: <scope>
                                                                                </topic>
      <topicRef xlink:href="#tragedv"/>
                                                                                                                                                        CM: (roleSpec?, (topicRef | resourceRef | subjectIndicatorRef)*)
                                                                                                                                             § 3.7.2
                                                                            baseNameString
      <topicRef xlink:href="#theatre"/>
                                                                                                                                                        AT: id
                                                                                                                                                                        TD
                                                                                                                                                                                 #TMPLTED
    </scope>
                                                                                                                                                        Ex: see association
                                                                            CM: (#PCDATA)
                       CLASSES AND INSTANCES
                                                                           bi :TA
                                                                                             TD
                                                                                                     #IMPLIED
                                                                                                                                                                                                                         § 3.8.3
                                                                                                                                                        roleSpec
                                                                            Ex: see baseName
instanceOf
                                                                 § 3.4.1
                                                                                                                                                        CM: (topicRef | subjectIndicatorRef)
                                                                                                                                             § 3.7.3
                                                                            variant
                                                                                                                                                        AT: id
                                                                                                                                                                        TD
                                                                                                                                                                                 #TMPLTED
CM: (topicRef | subjectIndicatorRef)
                                                                                                                                                        Ex: see association
                                                                            CM: (parameters, variantName?, variant*)
                         #TMPLTED
                                                                            bi :TA
                                                                                            TD
                                                                                                     #TMPLTED
Ex: <topic id="play">
                                                                                                                                                                             OCCURRENCES AND RESOURCES
                                                                            Ex: <topic id="shakespeare">
                                                                                   <baseName>
                                                                                                                                                        occurrence
                                                                                                                                                                                                                         § 3.9.1
    </topic>
                                                                                    <baseNameString>William Shakespeare/baseNameString>
    <topic id="hamlet">
                                                                                                                                                        CM: (instanceOf?, scope?, (resourceRef | resourceData))
                                                                                    <variant>
       <instanceOf>
                                                                                      <parameters><topicRef xlink:href="#sort"/></parameters>
                                                                                                                                                        AT: id
                                                                                                                                                                        ID
                                                                                                                                                                                #IMPLIED
        <topicRef xlink:href="#play"/>
                                                                                                                                                        Ex: <topic id="hamlet">
                                                                                      <variantName>
      </instanceOf>
                                                                                                                                                              <resourceData>shakespeare,william</resourceData>
    </topic>
                                                                                                                                                                <instanceOf>
                                                                                      </variantName>
Ex: <topic id="hamlet">
                                                                                                                                                                  <topicRef xlink:href="#date-of-composition"/>
                                                                                     </variant>
      <instanceOf>
                                                                                                                                                                </instanceOf>
                                                                                  </baseName>
        <subjectIndicatorRef xlink:href="/plays.html"/>
                                                                                                                                                                <resourceData>1600-01</resourceData>
                                                                                 </topic>
      </instanceOf>
                                                                                                                                                               </occurrence>
                                                                                 <topic id="sort">
    </topic>
                                                                                                                                                               <occurrence id="hamlet-in-xml">
                                                                                  <subjectIdentity>
                            THE TOPIC MAP
                                                                                    <subjectIndicatorRef xlink:href="/core.xtm#psi-sort"/>
                                                                                                                                                                <instanceOf>
                                                                                                                                                                   <topicRef xlink:href="#xml-version"/>
                                                                                  </subjectIdentity>
                                                                                                                                                                </instanceOf>
topicMap
                                                                 § 3.5.1
                                                                                 </topic>
                                                                                                                                                                <resourceRef xlink:href="/XML/hamlet.xml"/>
                                                                            Ex: <topic id="hamlet">
CM: (topic | association | mergeMap)*
                                                                                                                                                              </occurrence>
                                                                                   <haseName>
                 TD
                         #TMPLTED
bi :TA
                                                                                     <baseNameString>Hamlet</baseNameString>
                                                                                                                                                            </topic>
    xmlns
                 CDATA
                         #FIXED 'http://www.topicmaps.org/xtm/1.0/'
                                                                                     <variant>
                                                                                                                                                                                                                         § 3.9.2
                        #FIXED 'http://www.w3.org/1999/xlink'
                                                                                                                                                        resourceRef
    xmlns:xlink CDATA
                                                                                      <parameters><topicRef xlink:href="#display"/></parameters>
    xml:base
                 CDATA
                                                                                                                                                        CM: EMPTY
                                                                                      <variant>
Ex: <?xml version="1.0"?>
                                                                                         <parameters><topicRef xlink:href="#icon"/></parameters>
                                                                                                                                                        AT: id
                                                                                                                                                                         TD
                                                                                                                                                                                 #TMPLTED
    <!DOCTYPE topicMap
                                                                                                                                                            xlink:type NMTOKEN #FIXED 'simple'
                                                                                         <variant>
           PUBLIC "-//TopicMaps.Org//DTD XML Topic Map (XTM) 1.0//EN"
                                                                                          <parameters><topicRef link:href="#large"/></parameters>
                                                                                                                                                            xlink:href CDATA #REQUIRED
           "file://usr/local/home/gromit/xml/xtm/xtm1.dtd">
                                                                                          <variantName>
                                                                                                                                                        Ex: see variant, occurrence, mergeMap
    <topicMap xmlns='http://www.topicmaps.org/xtm/1.0/'</pre>
                                                                                            <resourceRef xlink:href="img/hamlet64x64.png" />
              xmlns:xlink='http://www.w3.org/1999/xlink'
                                                                                                                                                        resourceData
                                                                                                                                                                                                                         § 3.9.3
                                                                                          </variantName>
              xml:base='http://www.shakespeare.org/hamlet/'>
                                                                                         </variant>
                                                                                                                                                        CM: (#PCDATA)
      <!-- topics, associations, and merge map directives go here -->
                                                                                         <variant>
                                                                                                                                                        AT: id
                                                                                                                                                                         TD
                                                                                                                                                                                 #TMPLTED
    </topicMap>
                                                                                          <parameters><topicRef link:href="#small"/></parameters>
                                                                                                                                                        Ex: see variant, occurrence
                         TOPICS AND SUBJECTS
                                                                                          <variantName>
                                                                                                                                                                                       MERGING
                                                                                            <resourceRef xlink:href="img/hamlet16x16.png" />
                                                                 § 3.6.1
                                                                                          </wariantName>
                                                                                                                                                        MergeMap
                                                                                                                                                                                                                          § 3.10
                                                                                         </variant>
CM: (instanceOf*, subjectIdentity?, (baseName | occurrence)*)
                                                                                      </variant>
                                                                                                                                                        CM: (topicRef | resourceRef | subjectIndicatorRef)*
                 ID
                         #REQUIRED
                                                                                    </variant>
                                                                                                                                                        AT: id
                                                                                                                                                                         ID
                                                                                                                                                                                 #IMPLIED
Ex: <topic id="hamlet">
                                                                                  <baseName>
                                                                                                                                                            xlink:type NMTOKEN #FIXED 'simple'
       <instanceOf>
                                                                                 </topic>
                                                                                                                                                            xlink:href CDATA #REQUIRED
```

<topicRef xlink:href="#play"/>

LTM NOTATION

© http://www.ontopia.net/download/ltm.html

```
topic-map ::= encoding? directive* (topic | assoc | occur) +
         ::= '@' STRING
encoding
          ::= topicmapid | mergemap | baseuri
topicmapid ::= '#' 'TOPICMAP' WS NAME
          ::= '#' 'MERGEMAP WS uri WS STRING
           ::= '#' 'BASEURT' WS uri
baseuri
topic
                  NAME (WS ': ' NAME+)? (topname)*
                   subject? indicator* ']'
          ::= '%' uri
subject.
indicator
          ::= '@' uri
          ::= '=' basename ((';' sortname)
topname
                             (';' sortname? ';' dispname))?
                   scope?
scope
           ::= '/' NAME+
           ::= STRING
basename
sortname
          ::= STRING
dispname
           ::= STRING
           ::= NAME '(' assoc-role (',' assoc-role)* ')' scope?
assoc
assoc-role ::= (topic | NAME) (':' NAME )?
           ::= '{' occ-topic ',' occ-type ',' resource '}' scope?
occur
           ::= uri | DATA
resource
cc-topic
          ::= NAME
           ::- NAME
occ-type
           ::= STRING
NAME
           = [A-Za-z_][-A-Za-z_0-9.]*
COMMENT
           = /\*([^*]|\*[^/])*\*/
STRING
           = \[\((([^>]+>)*|\])\]
DATA
WS
           = [\r\n\t] +
```

ASTMA= NOTATION

```
© http://astma.it.bond.edu.au/astma=-spec-xtm-1.1r1.0.dbk
instance
                                comment } name-encode { section }
                            → { '#' string eol }
comment
name-encode
                            \rightarrow name [ ':' encoding ] eol
section
                            → comment | topic-definition |
                              association-definition
topic-definition
                            → [ 'tid' ':' ] topic-id
                                '(' list-of-type-topic-ids ')' ]
                                inlined-assoc
                                'reifies' string ]
                                'is-reified-by' uri } eol
                                ws* topic-characteristic eol }
inlined-assoc
                            → assoc-type-topic-id topic-id
topic-characteristic
                            → basename-characteristic
                              resourceRef-characteristic
                              resourceData-characteristic
                              subject-identity
basename-characteristic
                            → 'bn' [ '@' list-of-scope-topic-ids ] ':'
                              string
resourceRef-characteristic -> 'oc' [ '@' list-of-scope-topic-ids ]
                              [ '(' type-topic-id ')' ]':' uri
resourceData-characteristic → 'in' [ '@' list-of-scope-topic-ids ]
                              [ '(' type-topic-id ')' ]':' string
subject-identity
                            → ('sin' | 'si') ':' uri
association-definition
                            → [ '@' scope-topic-id ]
                              '(' [ association-type-topic-id ] ')'
                                'is-reified-by' uri } eol
                                ws* association-member eol
                            → role-topic-id ':' { member-topic-id }
association-member
list-of-any-topic-ids
                            → topic-id { ws+ topic-id }
any-topic-id
                            → topic-id
topic-id
                            → either topic identifier
                              (internal, without #) or URI (external)
                            → [ ws* ] { character } [ ws* ]
string
                              (all leading, trailing whitespace stripped)
                            → /\w+/ in regexp
name
```

XTM CONCEPTIONAL MODEL Class Hierarchy § B1 Resource Non-addressable Subject Class String XML Element XML Attribute Topic Map Node Topic Map Topic Characteristic <topic> <association> Topic Association Scope Base Name Occurrence Class-Instance Relationship § B2 A Topic Reifies a Subject § B3 Subject Class +class « REIFIES » Subject Topic Referencing the Subject § B4 Topic Subject Indicator # DEEEDENCES W « INDICATES » Subject «IS> Resource Non-addressable Subject Topic Characteristics Are Assigned Within Scopes § B5 **Topic Characteristic** Scope Topic Base Name Within Scope Occurrence § B7 Tonic Characteristic Tonic Characteristic Base Name String Resource Association Between Topics § B8 **Topic Characteristic** Topic +role specification Topic Map § B9 Topic Map Topic Map Node «REIFIES» Consistent Topic Map Subject





QUICK REFERENCE

XML Topic Maps (XTM)

version 1.0

http://www.topicmaps.org/xtm/1.0/

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