

## XML TOPIC MAPS DOCTYPE

```
<!DOCTYPE topicMap
PUBLIC "-//TopicMaps.Org//DTD XML Topic Map (XTM) 1.0//EN"
"http://www.topicmaps.org/xtm/1.0/xtml.dtd">
```

## REFERENCES TO TOPICS AND SUBJECT INDICATORS

### topicRef § 3.2.1

CM: EMPTY  
AT: id ID #IMPLIED  
xlink:type NMTOKEN #FIXED 'simple'  
xlink:href CDATA #REQUIRED

Ex: <topicRef  
xlink:href="http://www.topicmaps.org/xtm/1.0/language.xtm#en"/>  
Ex: <topicRef xlink:href="#play"/>

### subjectIndicatorRef § 3.2.2

CM: EMPTY  
AT: id ID #IMPLIED  
xlink:type NMTOKEN #FIXED 'simple'  
xlink:href CDATA #REQUIRED

Ex: <subjectIndicatorRef xlink:href="/language.xtm#en"/>  
Ex: <subjectIndicatorRef xlink:href="/plays.html#hamlet"/>

## SCOPE AND CONTEXT

### scope § 3.3.1

CM: (topicRef | resourceRef | subjectIndicatorRef)+  
AT: id ID #IMPLIED

Ex: <scope>  
<subjectIndicatorRef xlink:href="/language.xtm#en"/>  
</scope>  
Ex: <scope>  
<topicRef xlink:href="#tragedy"/>  
<topicRef xlink:href="#theatre"/>  
</scope>

## CLASSES AND INSTANCES

### instanceOf § 3.4.1

CM: (topicRef | subjectIndicatorRef)  
AT: id ID #IMPLIED

Ex: <topic id="play">  
...  
</topic>  
<topic id="hamlet">  
<instanceOf>  
<topicRef xlink:href="#play"/>  
</instanceOf>  
</topic>  
Ex: <topic id="hamlet">  
<instanceOf>  
<subjectIndicatorRef xlink:href="/plays.html"/>  
</instanceOf>  
</topic>

## THE TOPIC MAP

### topicMap § 3.5.1

CM: (topic | association | mergeMap)\*  
AT: id ID #IMPLIED  
xmlns CDATA #FIXED 'http://www.topicmaps.org/xtm/1.0/'  
xmlns:xlink CDATA #FIXED 'http://www.w3.org/1999/xlink'  
xml:base CDATA #IMPLIED

Ex: <?xml version="1.0"?>  
<!DOCTYPE topicMap  
PUBLIC "-//TopicMaps.Org//DTD XML Topic Map (XTM) 1.0//EN"  
"file:///usr/local/home/gromit/xml/xtm/xtml.dtd">  
<topicMap xmlns="http://www.topicmaps.org/xtm/1.0/"  
xmlns:xlink="http://www.w3.org/1999/xlink"  
xml:base="http://www.shakespeare.org/hamlet/">  
...  
</topicMap>

## TOPICS AND SUBJECTS

### topic § 3.6.1

CM: (instanceOf\*, subjectIdentity?, (baseName | occurrence)\*)  
AT: id ID #REQUIRED

Ex: <topic id="hamlet">  
<instanceOf>  
<topicRef xlink:href="#play"/>

```
</instanceOf>  
<!-- base names and occurrences go here -->  
</topic>
```

### subjectIdentity § 3.6.2

CM: (resourceRef?, (topicRef | subjectIndicatorRef)\*)  
AT: id ID #IMPLIED

Ex: <topic id="dk">  
<subjectIdentity>  
<subjectIndicatorRef xlink:href="/country.xtm#dk"/>  
</subjectIdentity>  
</topic>  
Ex: <topic id="da">  
<subjectIdentity>  
<subjectIndicatorRef xlink:href="/factbook/geos/da.html"/>  
</subjectIdentity>  
</topic>  
Ex: <topic id="denmark">  
<subjectIdentity>  
<subjectIndicatorRef xlink:href="/country.xtm#dk"/>  
<subjectIndicatorRef xlink:href="/factbook/geos/da.html"/>  
</subjectIdentity>  
</topic>

## TOPIC NAMES

### baseName § 3.7.1

CM: (scope?, baseNameString, variant\*)  
AT: id ID #IMPLIED

Ex: <topic id="shakespeare">  
<baseName>  
<baseNameString>William Shakespeare</baseNameString>  
</baseName>  
</topic>

### baseNameString § 3.7.2

CM: (#PCDATA)  
AT: id ID #IMPLIED  
Ex: see baseName

### variant § 3.7.3

CM: (parameters, variantName?, variant\*)  
AT: id ID #IMPLIED  
Ex: <topic id="shakespeare">  
<baseName>  
<baseNameString>William Shakespeare</baseNameString>  
<variant>  
<parameters><topicRef xlink:href="#sort"/></parameters>  
<variantName>  
<resourceData>shakespeare,william</resourceData>  
</variantName>  
</variant>  
</baseName>  
</topic>  
<topic id="sort">  
<subjectIdentity>  
<subjectIndicatorRef xlink:href="/core.xtm#psi-sort"/>  
</subjectIdentity>  
</topic>  
Ex: <topic id="hamlet">  
<baseName>  
<baseNameString>Hamlet</baseNameString>  
<variant>  
<parameters><topicRef xlink:href="#display"/></parameters>  
<variantName>  
<parameters><topicRef xlink:href="#icon"/></parameters>  
<variant>  
<parameters><topicRef link:href="#large"/></parameters>  
<variantName>  
<resourceRef xlink:href="img/hamlet64x64.png" />  
</variantName>  
</variant>  
<variant>  
<parameters><topicRef link:href="#small"/></parameters>  
<variantName>  
<resourceRef xlink:href="img/hamlet16x16.png" />  
</variantName>  
</variant>  
</variant>  
</baseName>  
</topic>

### variantName § 3.7.4

CM: (resourceRef | resourceData)  
AT: id ID #IMPLIED  
Ex: see variant

### parameters § 3.7.5

CM: (topicRef | subjectIndicatorRef)+  
AT: id ID #IMPLIED  
Ex: see variant

## ASSOCIATIONS AND MEMBERS

### association § 3.8.1

CM: (instanceOf?, scope?, member+)  
AT: id ID #IMPLIED  
Ex: <association id="will-wrote-hamlet">  
<instanceOf><topicRef xlink:href="#written-by"/>  
</instanceOf>  
<member>  
<roleSpec>  
<topicRef xlink:href="#author"/>  
</roleSpec>  
<topicRef xlink:href="#shakespeare"/>  
</member>  
<member>  
<roleSpec>  
<topicRef xlink:href="#work"/>  
</roleSpec>  
<topicRef xlink:href="#hamlet"/>  
</member>  
</association>

### member § 3.8.2

CM: (roleSpec?, (topicRef | resourceRef | subjectIndicatorRef)\*)  
AT: id ID #IMPLIED  
Ex: see association

### roleSpec § 3.8.3

CM: (topicRef | subjectIndicatorRef)  
AT: id ID #IMPLIED  
Ex: see association

## OCCURRENCES AND RESOURCES

### occurrence § 3.9.1

CM: (instanceOf?, scope?, (resourceRef | resourceData))  
AT: id ID #IMPLIED  
Ex: <topic id="hamlet">  
<occurrence>  
<instanceOf>  
<topicRef xlink:href="#date-of-composition"/>  
</instanceOf>  
<resourceData>1600-01</resourceData>  
</occurrence>  
<occurrence id="hamlet-in-xml">  
<instanceOf>  
<topicRef xlink:href="#xml-version"/>  
</instanceOf>  
<resourceRef xlink:href="/XML/hamlet.xml"/>  
</occurrence>  
</topic>

### resourceRef § 3.9.2

CM: EMPTY  
AT: id ID #IMPLIED  
xlink:type NMTOKEN #FIXED 'simple'  
xlink:href CDATA #REQUIRED  
Ex: see variant, occurrence, mergeMap

### resourceData § 3.9.3

CM: (#PCDATA)  
AT: id ID #IMPLIED  
Ex: see variant, occurrence

## MERGING

### MergeMap § 3.10

CM: (topicRef | resourceRef | subjectIndicatorRef)\*  
AT: id ID #IMPLIED  
xlink:type NMTOKEN #FIXED 'simple'  
xlink:href CDATA #REQUIRED

LTM NOTATION

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

```

topic-map ::= encoding? directive* (topic | assoc | occur) +
encoding  ::= '@' STRING
directive ::= topicmapid | mergemap | baseuri
topicmapid ::= '#' 'TOPICMAP' WS NAME
mergemap  ::= '#' 'MERGEMAP' WS uri WS STRING
baseuri   ::= '#' 'BASEURI' WS uri
topic     ::= '[' NAME (WS ':' NAME+)? (topname)*
           subject? indicator* ']'

subject   ::= '%' uri
indicator ::= '@' uri
topname   ::= '=' basename ((':' sortname) |
                           ((':' sortname?' ':' dispname'))?

scope?
scope     ::= '/' NAME+
basename ::= STRING
sortname  ::= STRING
dispname  ::= STRING
assoc    ::= NAME '(' assoc-role (':' assoc-role)* ')' scope?
assoc-role ::= (topic | NAME) ':' NAME ?
occur    ::= '{' occ-topic ',' occ-type ',' resource '}' scope?
resource ::= uri | DATA
cc-topic ::= NAME
occ-type  ::= NAME
uri       ::= 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 }
comment       -> { '#' string eol }
name-encode   -> name [ ':' encoding ] eol
section       -> comment | topic-definition |
               association-definition

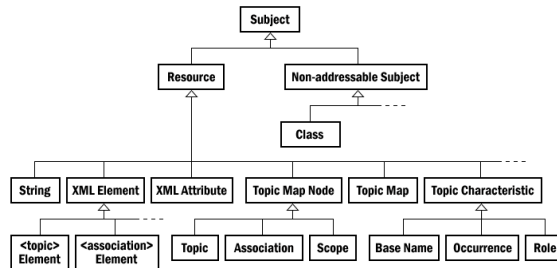
topic-definition -> [ 'tid' ':' ] topic-id
                 [ '(' list-of-type-topic-ids ')' ]
                 { inlined-assoc }
                 { 'reifies' string }
                 { 'is-reified-by' uri } eol
inlined-assoc  -> ws* topic-characteristic eol
topic-characteristic -> assoc-type-topic-id topic-id
                    |
                    | resourceRef-characteristic |
                    | resourceData-characteristic |
                    | subject-identity |
                    | association-definition

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 }

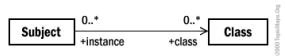
association-member -> role-topic-id ':' { member-topic-id }
list-of-any-topic-ids -> topic-id { ws+ topic-id }
any-topic-id       -> topic-id
topic-id           -> either topic identifier
                    (internal, without #) or URI (external)
string             -> [ ws* ] { character } [ ws* ]
                    (all leading, trailing whitespace stripped)
name               -> /\w+/ in regexp
    
```

XTM CONCEPTUAL MODEL

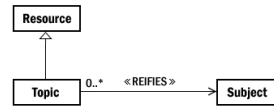
Class Hierarchy § B1



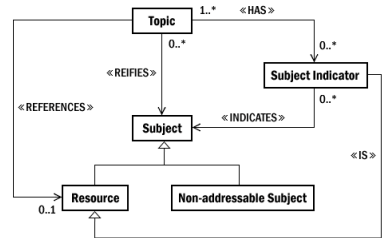
Class-Instance Relationship § B2



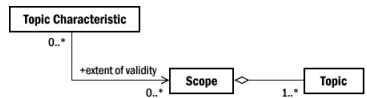
A Topic Reifies a Subject § B3



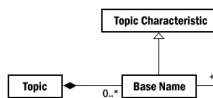
Referencing the Subject § B4



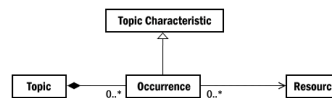
Topic Characteristics Are Assigned Within Scopes § B5



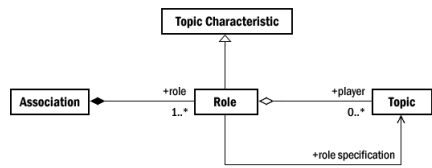
Base Name Within Scope § B6



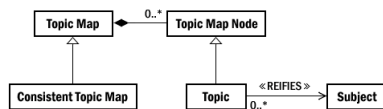
Occurrence § B7



Association Between Topics § B8



Topic Map § B9



QUICK REFERENCE

XML Topic Maps (XTM)

Version 1.0

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

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