



*IPTC NewsML
NewsAgency
Implementation
Guidelines*

[Comité International des Télécommunications de Presse](#)

NewsML - News Agency Implementation Guidelines

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Version 1.02 dated 22 March 2002 (Modified text for use of Scheme attribute and Physical Characteristics Section, Normative TopicSets, Provider TopicSets)

Version 1.03 dated 29 August 2002 (Version changes, Appendix on NewsML evolution, Appendix and text on Scheme (and Property), Ordering, Content encoding sequence). Location added to Normative TopicSets.

Version 1.1 dated October 2002 to refer to NewsMLv1.1 DTD and Schema

Version 1.1a includes example for format expression.

Version 1.1b expands examples using AllowedScheme

Version 1.1c corrects text under Provider (NewsEnvelope)

Index

Introduction

Validation

Version Changes

StatusWillChange

Default TopicSets

Format and Format Version

Scheme and Property

SubjectCode

SubjectCode FormalName Decoding

Location

Alerts

NewsML Compliance

Metadata Inheritance

Extension mechanisms

Ordering of NewsComponents

Content Inclusion Options

Content Encoding Sequence

Physical Metadata - Use of Characteristics Property Extensions

Appendix A: NewsML evolution

Appendix B: Use of Scheme Attribute

Introduction

NewsML is an extensible management format for news information of all types. It consists of a single XML Document Type Definition (DTD) but allows a number of different types of document instances to be valid against the DTD. The document types are NewsML with contained NewsItem and NewsComponents, TopicSets and Catalogs. A Catalog is used by a provider to give information to users on how to locate the various parts of NewsML that are used in the providers services. The TopicSets provide data in controlled vocabularies to populate those parts of NewsML where vocabulary information is required, in particular DescriptiveMetadata. This Guideline provides advice on good practices for News Agencies using NewsML in their services.

Validation

NewsML is intended to be used widely for news and has to exist in a standard form to allow providers and recipients to process the information in a consistent manner. NewsML has been Trademarked by IPTC and the published DTD must be used to validate all instances claiming to be NewsML. This is normally done by declaring the document type as follows:

```
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1"
"http://www.iptc.org/DTD/NewsMLv1.0.dtd">
```

However, such an approach while allowing validation against the DTD posted on the iptc.org web site also creates an unacceptable burden on the IPTC server and renders the provider and his users at risk from any failure to access this server. The IPTC server is not failsafe and does not form part of a guaranteed 24x7x365 service.

A safer approach would be to remove the dependency on the IPTC server by using a local copy of the DTD either at the provider's site or one previously distributed to the users.

```
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1"
"http://www.provider.org/DTD/NewsMLv1.0.dtd">
```

or

```
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1" "./DTD/NewsMLv1.0.dtd">
```

Could be suitable ways of indicating the SYSTEM locations of a copy of the DTD. Of course, any reputable provider should ensure that his contract with his users stipulate that NewsML instances will be valid in accordance with the IPTC published DTD and they do not have to validate instances on receipt. Validation can normally be switched off in XML systems when this is required.

Use of the abbreviated form of the DOCTYPE declaration where only the document root element is included may also help in this process. However, not every tool will accept such a declaration that is missing the system part.

```
<!DOCTYPE NewsML>
```

However, not every tool will accept such a declaration that is missing the system part.

Version Changes

At present NewsML exists only in version 1 but as it evolves over time further versions may well be published. The intention is that all future versions will, as far as practical, be backward compatible with version 1. Future versions are likely to have more named elements and attributes as requirements become more explicit and naming, rather than using generic extensions, is considered desirable. In this event users who receive a version later than version 1 may not be able to handle any new elements and attributes with their version 1 systems. Their systems should ignore any unrecognised elements and attributes without causing a system processing failure. If systems are not built with this protection then they must be capable of recognising a document type other than version 1 and discarding the data accordingly. The exact mechanism for handling new versions is at Appendix A.

StatusWillChange

As of version 1.1 multiple appearances of StatusWillChange are permitted. This element contains FutureStatus and DateAndTime child elements. Multiple appearances of StatusWillChange allow for news management to provide a series of instructions about a NewsItem without the need for sending further NewsItems giving on status information. However, there are certain combinations of values for FutureStatus and DateAndTime that are valid.

FutureStatus may be assigned as Usable, Withheld or Canceled since it is not possible to Embargo a NewsItem already released as Usable. Secondly, the DateAndTime values must follow a proper sequence of looking forward in time.

The following are valid:

Status	FutureStatus , DateAndTime(1)	FutureStatus, DateAndTime(2)
Usable	Canceled	
Embargoed	Usable	Canceled

Where DateAndTime (2) is after DateAndTime(1)

Default TopicSets

IPTC

Some of the controlled vocabularies provide data to populate attributes that are important to the overall interpretation of a NewsItem. For consistency in handling NewsItems from multiple providers it is essential that common values are adopted for these key parameters. These are NewsItemType, Status, Priority and SubjectMatter, SubjectDetail and SubjectQualifier and Location. The IPTC has published TopicSets for all of these and it is recommended that providers adopt the published vocabularies as their defaults. Extensions may always be made but the extension TopicSets for these element attributes should be included within, or referenced via a Catalog from, every NewsItem that employs any of the extended values. Of the above TopicSets those for NewsItemType, Status, Priority and Location are considered Normative.

Provider

In order to ensure that users are able to route incoming NewsItems properly, Providers who choose to make use of the optional child elements of NewsEnvelope, need to ensure that the following element attributes within NewsEnvelope are documented in TopicSets provided to their users:- SentFrom, SentTo, NewsService and NewsProduct.

Other TopicSets (eg Role) may be developed, as necessary, to allow users to interpret aspects of the added value a provider makes to his news. The OfInterestTo TopicSet is typically maintained by information providers. Publishers may add their own data to default TopicSets when they feel this is appropriate.

Format and Format version

The DataContent in a NewsComponent may be in a number of different Formats. These formats themselves are modified over time and often appear in updated versions. In order to cater for this need to reflect version changes in existing Formats it is recommended that the follow method of expression is used:

```
<NewsComponent >
  <ContentItem>
    <Format Scheme="IptcFormat" FormalName="NITF"/>
    <Characteristics>
      <Property Scheme="CharacteristicsProperty" FormalName="FormatVersion"
Value="2.1"/>
    </Characteristics>
    <DataContent >
      <nitf xmlns="urn:nitf:iptc.org.20010418.NITF" baselang="en.uk" change.date="4
July 2000" change.time="1900" version="-//IPTC-NAA/DTD NITF-XML 2.1//EN">
.....
      </DataContent>
    </ContentItem>
  </NewsComponent>
```

The FormalName= "Format" is drawn from a TopicSet with a Scheme = "IptcFormat" and the version is appended through the Characteristics element with a child of Property assigned a FormalName = "FormatVersion" from a TopicSet with a Scheme=CharacteristicsProperty. The Value attribute data (not drawn from a TopicSet) is the version number. This example uses data from published IPTC TopicSets but the same technique can be used with a publisher's own TopicSets.

Scheme

When the Scheme attribute is present in a FormalName element (which, is always a child of a Topic element), the attribute is declaring the Scheme to which the FormalName's #PCDATA belongs. For example,

```
<Topic>
....
<FormalName Scheme="ISO-3066-alpha2">US</FormalName>
</Topic>
```

indicates that the code “US” is part of the ISO-3066-alpha2 scheme of country identifiers.

If a FormalName element does not have a Scheme attribute, then the #PCDATA is a classifier or entity, without any Scheme.

If the Scheme attribute appears in any other element type, then one of two possibilities exists: it either appears in an element which also contains a FormalName attribute or it appears in the DefaultVocabularyFor element in a Catalog.

If an element with a FormalName attribute has neither a Scheme nor Vocabulary attribute then one must find the appropriate Catalog which defines which TopicSet is the source of the value of the FormalName attribute in question. In such a scenario, the Catalog is the definitive source of information via the DefaultVocabularyFor element. The Scheme value in the DefaultVocabularyFor element defines the Scheme value in the FormalName element of the appropriate Topic. If the DefaultVocabularyFor element has no Scheme attribute, then the appropriate Topic must have a FormalName element without a Scheme attribute.

An element which has a FormalName attribute can locally define which TopicSet and which Scheme is the source of the data for its FormalName attribute. This is done via the Scheme and Vocabulary attributes. For example,

```
<Role FormalName="Sidebar" Scheme="MyRole" Vocabulary="http://.." />
```

As stated above, if an element contains neither a Scheme nor a Vocabulary attribute, then one defaults to whatever the appropriate Catalog declares for the element in question.

```
<Role FormalName="Sidebar"/>
```

On the other hand, if an element includes a Scheme attribute or Vocabulary attribute or both, the following rules apply:

If the element includes just a Scheme attribute, as in

```
<Role FormalName="Sidebar" Scheme="MyRole" />
```

, then the implication is that one should find the closest appropriate Catalog to determine which TopicSet is the source of data for the FormalName attribute of the element. HOWEVER, the appropriate Topic MUST have the Scheme of “MyRole”. If such a Topic does not exist, there is an error. If the DefaultVocabularyFor declares a different Scheme, then the local Scheme declaration in the element OVERRIDES the Catalog.

If the element includes a Vocabulary attribute, as in

```
<Role FormalName="Sidebar" Vocabulary="http://.." />
```

, then the implication is that this local declaration of a TopicSet overrides any Catalog; and as such, the TopicSet declared by the Vocabulary attribute must contain a Topic with a FormalName element having #PCDATA set to “Sidebar”.

When one uses the Vocabulary attribute, one must be explicit about the use of the Scheme attribute. In the above example, since a Scheme attribute was absent, the indication is that the Topic holding the FormalName element with #PCDATA set to “Sidebar” has NO scheme attribute..

If the Topic in the TopicSet referred to by the Vocabulary attribute does have a Scheme attribute, then it should be explicitly declared along with the Vocabulary attribute, as in:

```
<Role FormalName="Sidebar" Scheme="MyRole" Vocabulary="http://.." />
```

One can summarise all the above as follows:

1. No Scheme, no Vocabulary attribute on an element: default to whatever the closest appropriate Catalog tells you.
2. Only a Scheme attribute on an element: find the closest appropriate Catalog, but use the Scheme attribute value to potentially override what the Catalog might tell you is the Scheme of the FormalName element in the matching Topic.

3. Only a Vocabulary attribute on an element: the Vocabulary declares which TopicSet holds the Topic defining the FormalName attribute value and the Topic in question must have the #PCDATA in a FormalName element WITHOUT a Scheme. The presence of the Vocabulary attribute in an element overrides any Catalog declaration concerning that element.

4. Both a Vocabulary attribute and a Scheme attribute; an explicit declaration of TopicSet and Scheme to find the Topic with appropriate #PCDATA. This overrides any Catalog declaration.

Scheme and Property

The DTD (v1.1) includes the AllowedScheme attribute in the Property element to designate the Scheme associated with the contents of the "Value" attribute of the Property. However, one can declare the TopicSet associated with the Value attribute via the AllowedValues attribute alone.

In summary:

FormalName attribute has associated Scheme and Vocabulary attributes

Value attribute has associated AllowedValues and AllowedScheme attributes.

Since AllowedValues points to a TopicSet and there is no way of declaring which Scheme is appropriate unless AllowedScheme is used, it must follow that, if AllowedValues is used alone, the TopicSet in question does NOT have a Scheme attribute in the FormalName element holding the #PCDATA which defines the Value attribute.

On the other hand, if AllowedValues is not used, but the Catalog is relied on to indicate which TopicSet sources the values for the Value attribute of a Property, then a Scheme may be declared for the Topics providing the values of Value, via the DefaultVocabularyFor element or with the AllowedScheme attribute. Also note that there is a ValueRef attribute in a Property which allows pointing to either a Topic in a TopicSet or to any other content declarable via a URI that provides additional information on the Value attribute. In other words, the Scheme attribute of DefaultVocabularyFor, when its Context attribute references a property value (Property/@Value), can replace the use of an AllowedScheme attribute in Property to indicate the use of a naming scheme for the value.

For example:

A property is assigned a FormalName:

```
<Property Vocabulary="urn:newsml:iptc.org:20001006:topicset.iptc-property:5"
  Scheme="IptcProperty" FormalName="Country"
  AllowedValues="urn:newsml:iptc.org:20001006:topicset.iso-country:3"
  AllowedScheme="ISO3166-alpha3" Value="AND" />
```

The "short" variant

```
<Property FormalName="Country" Value="AND" />
```

uses a Catalog that contains:

```
<Resource>
  <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-property:5</Urn>
  <Url>http://www.iptc.org/site/NewsML/topicsets/topicset.iptc-property.xml</Url>
  <DefaultVocabularyFor Scheme="IptcProperty" Context="//Property"/>
</Resource>
...
<Resource>
  <Urn>urn:newsml:iptc.org:20001006:topicset.iso-country:3</Urn>
  <Url>http://www.iptc.org/site/NewsML/topicsets/topicset.iso-country.xml</Url>
  <DefaultVocabularyFor Scheme="ISO3166-alpha3"
  Context="//Property[@FormalName="Country"]/@Value"/>
</Resource>
```

a Property TopicSet that contains:

```
<Topic Duid="sprop5">
  <TopicType Scheme="IptcTopicType" FormalName="Property"/>
  <FormalName Scheme="IptcProperty">Country</FormalName>
  <Description xml:lang="en-GB">The country property found in the Location descriptive
  metadata.</Description>
</Topic>
```

and a Country TopicSet that contains:

```
<Topic Duid="isoc20">
  <TopicType Scheme="IptcTopicType" FormalName="Country"/>
  <FormalName Scheme="ISO3166-alpha2">AD</FormalName>
  <FormalName Scheme="ISO3166-alpha3">AND</FormalName>
  <Description xml:lang="en-GB" Variant="UPPER CASE">ANDORRA</Description>
</Topic>
```

SubjectCode

The SubjectCode element is repeatable within DescriptiveMetadata but also may have repeated child elements within itself. This may lead to confusion and difficulties in parsing and processing the subject information. The simplest way to reduce the potential for confusion would be to remove the capability for multiple appearances of the SubjectCode child elements. However, this would break existing valid implementations that use the multiple child elements. This will not be done at present in order to preserve backward compatibility. Eg

```
<DescriptiveMetadata>
  <SubjectCode>
    <Subject FormalName="15000000" />
    <Subject FormalName="S" Vocabulary="urn:newsml:afp.com:20011001:AFPCatCodes:1"
Scheme="AFPCatCode"/>
  </SubjectCode>
</DescriptiveMetadata>
```

The **recommended** approach is to only encapsulate one set of child elements within each SubjectCode:

```
<DescriptiveMetadata>
  <SubjectCode>
    <Subject FormalName="15000000" />
  </SubjectCode>
  <SubjectCode>
    <Subject FormalName="S"
Vocabulary="urn:newsml:afp.com:20011001:AFPCatCodes:1" Scheme="AFPCatCode"/>
  </SubjectCode>
</DescriptiveMetadata>
```

This is particularly useful where a SubjectQualifier or SubjectQualifiers are included since they will only refer to their immediate sibling

```
<DescriptiveMetadata>
  <SubjectCode>
    <Subject FormalName="15000000" />
    <SubjectQualifier FormalName="15000010"/>
    <SubjectQualifier FormalName="15000006"/>
  </SubjectCode>
  <SubjectCode>
    <SubjectMatter FormalName="15054000"/>
    <SubjectQualifier FormalName="15000023"/>
  </SubjectCode>
</DescriptiveMetadata>
```

SubjectCode FormalName Decoding

The FormalName value is a unique eight-digit number that is assigned to each entry in the three-level Subject hierarchy. This number is broken down as follows:

The **first two digits** indicate the top-level **Subject**. The valid values are 01 through 17. (Leading zero is mandatory.)

The **next three digits** indicate the **SubjectMatter** when read in conjunction with the parent **Subject** number. Default is 000, used when no **SubjectMatter** is specified. The rest of the values (001-999) must be used in conjunction a two-digit Subject number.

The **last three digits**, when preceded by valid **Subject** and **SubjectMatter** numbers, indicate **SubjectDetail**. The last three digits separately are used to indicate a **SubjectQualifier** – but *only* in concert with a **Subject** number. The middle three digits must be 000 when providing a **SubjectQualifier**.

This construct means that it is not necessary to include **Subject** or **SubjectMatter** if a **SubjectDetail** is encoded nor a **Subject** if a **SubjectMatter** is encoded. The appropriate **Subject**, **SubjectMatter** and **SubjectDetail** data may be extracted (assuming they are validly encoded) from the FormalName as follows:

Examples:

Subject

	Subject	SubjectMatter	SubjectDetail
13000000	13xxxxxx	13000xxx	13000000
	science and technology	(none)	(none)

SubjectMatter

	Subject	SubjectMatter	SubjectDetail

07002000	07xxxxxx	17002xxx	17002000
	(health)	epidemic and plague	(none)

SubjectDetail

	Subject	SubjectMatter	SubjectDetail
04015002	04xxxxxx	04015xxx	04015002
	(economy, business and finance)	(transport)	railway

SubjectQualifier

	Subject	SubjectMatter	SubjectQualifier
15000001	15xxxxxx	15000xxx	15000001
	(sport)	(none)	men

The numbering scheme allows for logical extensions to all of these lists. There is no relevance in the sequence of numbers allocated to entries in the scheme. They were derived initially from an alphabetical sort of the original lists and do not contain an implied hierarchy. However, the first two digits are always the same for a given Subject and the digits at positions 3, 4 and 5 are the same for a given SubjectMatter within a Subject.

Location

The Location element has been added to DescriptiveMetadata in NewsMLv1.1. Its content model consists of the Property element that may occur zero or more times.

This structure for Location would allow us to create the following logical equivalent of a DateLine

```
<DateLineDate>20020828</DateLineDate>
<Location HowPresent="DateLine">
  <Property FormalName="Country" Value="US"/>
  <Property FormalName="CountryArea" Value="DC"/>
  <Property FormalName="City" Value="Washington"/>
  <Property FormalName="SubLocation" Value="The White House" />
  <Property FormalName="WorldRegion" Value="North America"/>
</Location>
```

Although the Location element allows for arbitrary nesting it is not recommended that location elements are nested unless it is considered absolutely essential to avoid ambiguity.

Alerts

An alert requires the minimum of overhead in order not to be delayed in transit and to allow the recipient to grasp the essential information as quickly as possible. The NewsItemType TopicSet has been extended to include the following entry.

```
<Topic Duid="nit09">
  <TopicType Scheme="IptcTopicType" FormalName="NewsItemType"/>
  <FormalName Scheme="IptcNewsItemType">Alert</FormalName>
  <Description xml:lang="en-GB">Preliminary warning message about an important breaking
news event.</Description>
</Topic>
```

An alert can now be easily indicated by providing a NewsItemType of Alert. The message content may either be included in a NewsLine on as text in a ContentItem depending on the Provider's requirements.

NewsML Compliance

Users of NewsML are licensed only to publish NewsML instances that are in conformance with the DTD. Validation of correct structure can be made using a validating parser and the published DTD. However, the NewsML specification requires rules to be followed that cannot be validated by a normal XML parser. To assist developers an XSL stylesheet has been developed that may be used to check that prototype instances do meet the NewsML specification. It allows that verification of certain #PCDATA values that must have specific values and/or structure as well as vocabularies and Catalogs needed to ensure that FormalName values are properly identified and references. Extensions using the generic Metadata and Characteristics elements may also be tested. This stylesheet only requires a working XSLT parser such as that built into MSIE5+. It may be downloaded from the www.iptc.org site.

Metadata Inheritance

Catalog

The design of NewsML allows for the insertion of Catalogs and TopicSets at various locations within the NewsML structure. A Catalog is defined as a container for Resource and TopicUse elements. Resource elements map URNs to URLs and indicate default external vocabularies which apply to the FormalNames of certain elements within the subtree that begins with the immediate parent of the Catalog element. Catalogs may be placed within the following elements. NewsML, NewsItem, NewsComponent, AdministrativeMetadata, DescriptiveMetaData, RightsMetaData, MetaData, ContentItem, TopicSet and Topic. Hence, as any Catalog will provide information for finding the vocabularies appropriate to the FormalName of the child or descendant elements of the Catalog's parent element, and it is possible that more than one Catalog may exist in the NewsML structure this could lead to confusion over where vocabularies may be found. The Rule that applies is that elements in the tree always inherit Catalog information from the nearest point above them in the tree. In other words the information in the "closest" Catalog overrides any from more distant Catalogs. Where a FormalName attribute has associated with it a Vocabulary attribute this provides a pointer to a TopicSet which is the controlled vocabulary that can be used to resolve the meaning of the FormalName. The value of the Vocabulary attribute is an http URL or a NewsML URN, or the # character followed by the value of the Duid attribute of a TopicSet in the current document.

If there is no Vocabulary attribute, then the controlled vocabulary to be used is located by the following algorithm:

Proceed to the parent of the current element.

If it has a Catalog element as its immediate child, see whether that Catalog contains a Resource element whose DefaultVocabularyFor child contains an Xpath pattern that is matched by the current element. If so, then the controlled vocabulary is the resource identified by that Resource element.

If the parent does not meet the above condition, proceed to its parent and check the same condition.

Continue until a vocabulary is found, or no further parent elements are available because the root element has been reached and it too fails to meet the condition. This is an error in the NewsML document.

TopicSet

TopicSets may also be located at different levels in NewsML. The following elements may contain TopicSets: NewsML, NewsItem and NewsComponent. When located within any of these elements they are termed Local Vocabularies. A TopicSet may be pointed to through the use of the Vocabulary attribute. If present it provides a pointer to a TopicSet that is the controlled vocabulary that can be used to resolve the meaning of the FormalName. The value of the Vocabulary attribute is an http URL or a NewsML URN (for external Vocabularies), or the # character followed by the value of the Duid attribute of a TopicSet (Local Vocabulary) in the current document. As the Vocabulary pointer can only identify a specific TopicSet, the location of the TopicSet is not relevant to inheritance. Although a VocabularyPointer could be used to override a default vocabulary pointed to by a Catalog.

The FormalName element (of the Topic) may have a Scheme attribute to indicate that it belongs to a particular naming scheme. It is an error for there to exist two Topics in the same TopicSet that have the same FormalName with the same Scheme attribute. The Scheme attribute, if present, serves to distinguish which of possibly multiple naming schemes in the controlled vocabulary is the one that governs this FormalName. For a match to be obtained within the controlled vocabulary, the rule is that the FormalName and the Scheme must both match. If there is no Scheme attribute on the current element, the match will be to an item in the local vocabulary that has the current FormalName and no Scheme.

If there is a Scheme attribute on the current element, then both the FormalName and the Scheme in the local controlled vocabulary must match. When an external Vocabulary is pointed to from a Catalog the applicable Scheme is indicated by the value of the Scheme attribute in the DefaultVocabularyFor child of the relevant Resource element in the Catalog. If no Scheme attribute is present with the FormalName attribute within the current element then the Scheme in the Catalog DefaultVocabularyFor entry is used as the default for that element.

In order to avoid problems it is good practice to ensure that the Scheme attribute is always used and a match is made in a positive sense using both the FormalName and the Scheme values of a Topic in a TopicSet.

Local Topic additions may be made to external default controlled vocabularies using the TopicSet Ref element. This is a pointer to a TopicSet that is to be merged with the current one. The TopicSet attribute is a pointer to the relevant TopicSet. Its value can be an http URL, or a NewsML URN, or a fragment identifier consisting of a # character followed by the Duid of a TopicSet in the current document. The presence of a TopicSetRef child in a TopicSet has the effect that all the Topics in the referenced TopicSet are included by reference within the current local TopicSet. When this merging results in there existing two FormalName grandchildren of the same TopicSet that have the same content and the same Scheme attribute value, then the Topics whose children these are, in fact are the same Topic, and are deemed to be merged. The merging of Topics need not be performed physically by the system, but the meaning of the data is exactly the same as if the merging were actually performed. Merging two Topics consists of creating a single Topic that contains all the children of both, and eliminating duplicates. This method allows for additional Schemes to be added to Topics in default external TopicSets.

Extension Mechanisms

NewsML may be legitimately extended in the following ways:

Structural Extensions

Within the designated metadata (AdministrativeMetadata, RightsMetadata and DescriptiveMetadata) additional features may be added using the Property element.

New Metadata may be added by declaring a MetaDataType and then adding the required number of Property elements.

Default controlled vocabularies may be extended by adding additional entries with new Schemes inside existing TopicSets.

User defined TopicSets may be referenced from a NewsML instance through the user's Catalog. It is helpful if both the containing Topicset and its child Topics have the same TopicType. Thus only one corresponding entry

is needed in the TopicType TopicSet. However, multiple TopicTypes may exist as in the topicset.iptc-subjectcode.xml

Content Inclusions

NewsML may include content inline or externally by reference.

Where content is inline within ContentItem and DataContent validation can be maintained by either:

Declaring a local subset for the NewsML DTD within the document instance (allows additional elements and attributes to be part of the DataContent ANY content model.

Including a reference to an external DTD by means of an entity reference in the document instance declaration.

Through the use of an additional namespace attribute within the NewsML element.

This allows external content structures to be embedded within NewsML but it is not permitted to modify the NewsML document other than within the DataContent. To do so would be a breach of the NewsML licence and a violation of the NewsML trademark. IPTC will take appropriate action to protect its rights in the event of any discovered breach of its NewsML licence or trademark.

The Property element

The Property element is used to assert the value of some property on Characteristics, AdministrativeMetadata, DescriptiveMetadata, RightsMetadata, Metadata or Topic. The property must be formally named and may contain sub-properties to handle complex properties.

The Property has a name and either a simple or a complex value consisting of a set of further properties. The Value attribute provides a string representation of the value of a Property. The ValueRef attribute gives a pointer to the value of the Property. This might be a Topic in a TopicSet, or any other piece of data. If both Value and ValueRef attributes are provided, then ValueRef identifies the actual value of the Property, with Value simply providing a string representation or mnemonic for it. It is an ERROR condition if the resolved value pointed to by the ValueRef attribute and the Value specified are not the same. The AllowedValues attribute, if present, is a pointer to a controlled vocabulary that delimits the set of allowed values for the property. (The vocabulary does not have to conform to the NewsML specification.) This may be an http URL, or a NewsML URN, or a fragment identifier consisting of a # character followed by the Duid of an element in the current document. The pointer must reference either a Resource element that designates an external controlled vocabulary, or a TopicSet element, that is itself the controlled vocabulary. The AllowedScheme attribute, if present, distinguishes the Scheme in a controlled vocabulary that delimits the set of allowed values for the property. For a match to be obtained within the controlled vocabulary both the AllowedScheme must match the Scheme in the vocabulary and the Value must match the FormalName in the vocabulary.

The use of the AllowedScheme attribute serves to indicate that the Value data is drawn from a controlled vocabulary rather than being an uncontrolled entry.

Element	Attributes	
Property	FormalName	Value
		ValueRef
	Vocabulary	AllowedValues
	Scheme	AllowedScheme

The name given to a Property is drawn from a Topic in a TopicSet where the FormalName attribute value is defined. The Vocabulary attribute provides a pointer to the appropriate TopicSet.

The Value attribute contains a string representation of the actual value assigned. The ValueRef attribute provides a pointer to the exact Topic in a TopicSet where this value is specified. The AllowedValues attribute provides a pointer to the TopicSet where all the possible values for the Value attribute of this Property are listed. The AllowedScheme attribute indicates the Scheme in the controlled vocabulary that supports the values for the value attribute.

The attributes Value, ValueRef, AllowedValues and AllowedScheme may occur in the following combinations: (See "Adding New Metadata" below for declaration of ExtraTopicType)

1. Value. In this case the value assigned is uncontrolled.

```
<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>
```

```
<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"/>
```

2. Value with a corresponding Resource entry in a Catalog. In this case the value assigned is controlled by the TopicSet pointed to by the Resource element Url child.

```
<Catalog>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.fictional-country:1</Urn>
    <Url>./topicsets/fictional-country.xml</Url>
    <DefaultVocabularyFor Context="//Property[@FormalName=FCountry]/@Value"/>
  </Resource>
</Catalog>
```

```
<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>
```

```
<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"/>
```

3. Value and ValueRef. The value assigned is that pointed to by the ValueRef pointer. These must be the same value otherwise an ERROR exists.

CORRECT

```
<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>
```

```
<TopicSet Duid="fcos" Scheme="ExtraTopicType" FormalName="FCountry">
  <Topic Duid="fco1">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Narnia</FormalName>
    <Description xml:lang="en-GB">From the novels of C.S Lewis</Description>
  </Topic>
  <Topic Duid="fco2">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Lilliput</FormalName>
    <Description xml:lang="en-GB">From Gullivers Travels</Description>
  </Topic>
</TopicSet>
```

```
<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"
ValueRef="#fco1"/>
```

ERROR

```

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="fcos" Scheme="ExtraTopicType" FormalName="FCountry">
  <Topic Duid="fco1">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Narnia</FormalName>
    <Description xml:lang="en-GB">From the novels of C.S Lewis</Description>
  </Topic>
  <Topic Duid="fco2">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Lilliput</FormalName>
    <Description xml:lang="en-GB">From Gullivers Travels</Description>
  </Topic>
</TopicSet>

<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"
ValueRef="#fco2"/>

```

4. Value and AllowedValues. The value specified is drawn from the TopicSet pointed to by the AllowedValues attribute. (Normally this would be a local TopicSet and AllowedValues behaves in a similar way to the Vocabulary attribute.)

```

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="fcos" Scheme="ExtraTopicType" FormalName="FCountry">
  <Topic Duid="fco1">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Narnia</FormalName>
    <Description xml:lang="en-GB">From the novels of C.S Lewis</Description>
  </Topic>
  <Topic Duid="fco2">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Lilliput</FormalName>
    <Description xml:lang="en-GB">From Gullivers Travels</Description>
  </Topic>
</TopicSet>

<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"
AllowedValues="#fcos"/>

```

5. ValueRef. This just provides a pointer to the (local) TopicSet Topic child where the value that would be assigned to the Value attribute (if it was used) may be found.

```

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="fcos" Scheme="ExtraTopicType" FormalName="FCountry">
  <Topic Duid="fco1">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Narnia</FormalName>
    <Description xml:lang="en-GB">From the novels of C.S Lewis</Description>
  </Topic>
  <Topic Duid="fco2">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName>Lilliput</FormalName>
    <Description xml:lang="en-GB">From Gullivers Travels</Description>
  </Topic>
</TopicSet>

<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" ValueRef="#fco1"
/>

```

6. Value and AllowedScheme with a corresponding Resource entry in a Catalog. In this case the value assigned is controlled by the TopicSet pointed to by the Resource element Url child. Both the @AllowedScheme/@Scheme and @Value/FormalName matches must occur.

```

<Catalog>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.fictional-country:1</Urn>
    <Url>./topicsets/fictional-country.xml</Url>
    <DefaultVocabularyFor Context="//Property[@FormalName='FCountry']/@Value"/>
  </Resource>
</Catalog>

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pcf1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">FCountry</FormalName>
    <Description xml:lang="en-GB">Name of imaginary geo-political entity.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="fcos" Scheme="ExtraTopicType" FormalName="FCountry">
  <Topic Duid="fco1">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName Scheme="MyCountry">Narnia</FormalName>
    <Description xml:lang="en-GB">From the novels of C.S Lewis</Description>
  </Topic>
  <Topic Duid="fco2">
    <TopicType Scheme="ExtraTopicType" FormalName="FCountry"/>
    <FormalName Scheme="MyCountry">Lilliput</FormalName>
    <Description xml:lang="en-GB">From Gullivers Travels</Description>
  </Topic>
</TopicSet>

<Property FormalName="FCountry" Vocabulary="#myprops" Scheme="MyProperty" Value="Narnia"
AllowedScheme="MyCountry"/>

```

Extending AdministrativeMetadata

```

<Resource>
  <Urn>urn:newswml:iptc.org:20001006:topicset.iso-country:1</Urn>
  <Url>./topicsets/iso-country.xml</Url>
  <DefaultVocabularyFor Scheme="ISO3166-alpha3"
Context="//AdministrativeMetadata/Property[@FormalName='Country']/@Value"/>
</Resource>

<TopicSet Duid="iptc.entities" Scheme="ExtraTopicType" FormalName="IptcEntity">
  <Comment xml:lang="en-GB">The relevant entities for IPTC publications.</Comment>
  <Topic Duid="ent01">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">IPTC</FormalName>
    <Description xml:lang="en-GB">International Press Telecommunications
Council.</Description>
  </Topic>
  <Topic Duid="ent02">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">David Allen</FormalName>
    <Description xml:lang="en-GB">IPTC Managing Director.</Description>
  </Topic>
  <Topic Duid="ent04">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">Hugh Johnstone</FormalName>
    <Description xml:lang="en-GB">IPTC Editor.</Description>
  </Topic>
  <Topic Duid="ent05">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">All NewsML Users</FormalName>
    <Description xml:lang="en-GB">Main audience for web site.</Description>
  </Topic>
  <Topic Duid="ent06">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">IPTC NewsML</FormalName>
    <Description xml:lang="en-GB">Web site service name.</Description>
  </Topic>
  <Topic Duid="ent07">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">WebSite</FormalName>
    <Description xml:lang="en-GB">Publishing vehicle.</Description>
  </Topic>
  <Topic Duid="ent08">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">General</FormalName>
    <Description xml:lang="en-GB">Of interest to all readers.</Description>
  </Topic>
  <Topic Duid="ent09">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcEntity"/>
    <FormalName Scheme="PubEntities">Feature</FormalName>
    <Description xml:lang="en-GB">A specially prepared article.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pc1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Country</FormalName>
    <Description xml:lang="en-GB">Name of geo-political entity.</Description>
  </Topic>
  <Topic Duid="pp1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>

```



```

    <FormalName Scheme="MyProperty">PropertyOne</FormalName>
    <Description xml:lang="en-GB">First property of my Metadata</Description>
  </Topic>
  <Topic Duid="pp2">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">PropertyTwo</FormalName>
    <Description xml:lang="en-GB">Second property of my Metadata</Description>
  </Topic>
</TopicSet>

<AdministrativeMetadata Duid="Admta1">
  <FileName>webpage.xml</FileName>
  <SystemIdentifier>webpage.xml</SystemIdentifier>
  <Provider>
    <Party FormalName="IPTC" Vocabulary="#iptc.entities" Scheme="PubEntities"/>
  </Provider>
  <Creator>
    <Party FormalName="David Allen" Vocabulary="#iptc.entities"
Scheme="PubEntities"/>
  </Creator>
  <Source>
    <Party FormalName="IPTC" Vocabulary="#iptc.entities" Scheme="PubEntities"/>
  </Source>
  <Contributor>
    <Party FormalName="Hugh Johnstone" Vocabulary="#iptc.entities"
Scheme="PubEntities"/>
  </Contributor>
  <Property FormalName="Country" Vocabulary="#myprops" Scheme="MyProperty"
Value="JPN"/>
</AdministrativeMetadata>

```

Extending DescriptiveMetadata

This example illustrates how the an additional Classifier may be added to Descriptive Metadata

```

<Resource>
  <Urn>urn:newsml:iptc.org:20001006:topicset.classifier:1</Urn>
  <Url>#iptc.concept</Url>
  <DefaultVocabularyFor Scheme="IptcClassifiers"
Context="//DescriptiveMetadata/Property[@FormalName='Classifier']/@Value"/>
</Resource>
<Resource>
  <Urn>urn:newsml:iptc.org:20001006:topicset.concept:1</Urn>
  <Url>#myconcepts</Url>
  <DefaultVocabularyFor Scheme="MyConcept"
Context="//DescriptiveMetadata//Property[@FormalName='Concept']/@Value"/>
</Resource>
<Resource>
  <Urn>urn:newsml:iptc.org:20001006:topicset.brico:1</Urn>
  <Url>#bricolist</Url>
  <DefaultVocabularyFor Scheme="Brico"
Context="//DescriptiveMetadata//Property[@FormalName='Brico']/@Value"/>
</Resource>

<TopicSet Duid="iptc.classifier" Scheme="ExtraTopicType" FormalName="IptcClassifier">
  <Comment xml:lang="en-GB">A Topic inspired by Ken Haas and his "brico" project.
</Comment>
  <Topic Duid="clas01">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcClassifier"/>
    <FormalName Scheme="IptcClassifiers">Classifier</FormalName>
  </Topic>
</TopicSet>

```

```

    <Description xml:lang="en-GB">The entire grouping of document descriptors that could be
    applied to an entire document or a document subsection.</Description>
  </Topic>
</TopicSet>
<TopicSet Duid="iptc.concept" Scheme="ExtraTopicType" FormalName="IptcConcept">
  <Topic Duid="ccpt01">
    <TopicType Scheme="ExtraTopicType" FormalName="IptcConcept"/>
    <FormalName Scheme="IptcClass">Concept</FormalName>
    <Description xml:lang="en-GB">A disambiguated keyword describing a meaning that is
    associated with the content it encloses or refers to.</Description>
  </Topic>
</TopicSet>
<TopicSet Duid="myconcepts" Scheme="ExtraTopicType" FormalName="ConceptName">
  <Topic Duid="cc1">
    <TopicType Scheme="ExtraTopicType" FormalName="ConceptName"/>
    <FormalName Scheme="MyConcept">Brico</FormalName>
    <Description xml:lang="en-GB">A Ken Haas project.</Description>
  </Topic>
</TopicSet>
<TopicSet Duid="bricolist" Scheme="ExtraTopicType" FormalName="BricoName">
  <Topic Duid="bc1">
    <TopicType Scheme="ExtraTopicType" FormalName="BricoName"/>
    <FormalName Scheme="Brico">Pasta</FormalName>
    <Description xml:lang="en-GB">Italian food.</Description>
  </Topic>
</TopicSet>

```

```

<DescriptiveMetadata Duid="Ddmta1">
  .....
  <Property FormalName="Classifier" Vocabulary="#iptc.classifier"
  Scheme="IptcClassifiers" Value="Concept" AllowedValues="#iptc.concept">
    <Property FormalName="Concept" Vocabulary="#iptc.concept"
  Scheme="IptcClass" Value="Brico" AllowedValues="#myconcepts">
    <Property FormalName="Brico" Vocabulary="#myconcepts"
  Scheme="MyConcept" Value="Pasta" AllowedValues="#bricolist"/>
  </Property>
  </Property>
</DescriptiveMetadata>

```

Adding a New Metadata Type

1. Declare new TopicTypes

```

<TopicSet Duid="newsmltopictypes" Scheme="IptcTopicType" FormalName="TopicType">
  <TopicSetRef TopicSet="urn:newsml:iptc.org:20001006:topicset.iptc-topictype:1"/>
  <Topic Duid="MyTopic.Meta">
    <TopicType Scheme="IptcTopicType" FormalName="TopicType"/>
    <FormalName Scheme="ExtraTopicType">MetaName</FormalName>
    <Description xml:lang="en-GB">Naming of additional Metadata types</Description>
  </Topic>
  <Topic Duid="MyTopic.PropN">
    <TopicType Scheme="IptcTopicType" FormalName="TopicType"/>
    <FormalName Scheme="ExtraTopicType">PropertyName</FormalName>
    <Description xml:lang="en-GB">Naming of additional Metadata Properties</Description>
  </Topic>
  <Topic Duid="MyTopic.PropV">
    <TopicType Scheme="IptcTopicType" FormalName="TopicType"/>
    <FormalName Scheme="ExtraTopicType">PropertyValue</FormalName>
  </Topic>

```

```

    <Description xml:lang="en-GB">Naming of additional Metadata Property
values</Description>
  </Topic>
</TopicSet>

```

2. Declare Metadata names

```

<TopicSet Duid="mymetadata" Scheme="ExtraTopicType" FormalName="MetaName">
  <Topic Duid="mm1">
    <TopicType Scheme="ExtraTopicType" FormalName="MetaName"/>
    <FormalName Scheme="MyMeta">MetaTypeOne</FormalName>
    <Description xml:lang="en-GB">My first extra Metadata type</Description>
  </Topic>
  <Topic Duid="mm2">
    <TopicType Scheme="ExtraTopicType" FormalName="MetaName"/>
    <FormalName Scheme="MyMeta">MetaTypeTwo</FormalName>
    <Description xml:lang="en-GB">My second extra Metadata type</Description>
  </Topic>
</TopicSet>

```

3. Declare Property names

```

<TopicSet Duid="myprops" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pc1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Country</FormalName>
    <Description xml:lang="en-GB">Name of geo-political entity.</Description>
  </Topic>
  <Topic Duid="pp1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">PropertyOne</FormalName>
    <Description xml:lang="en-GB">First property of my Metadata</Description>
  </Topic>
  <Topic Duid="pp2">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">PropertyTwo</FormalName>
    <Description xml:lang="en-GB">Second property of my Metadata</Description>
  </Topic>
</TopicSet>

```

4. Declare Property values.

```

<TopicSet Duid="propone" Scheme="ExtraTopicType" FormalName="PropertyValue">
  <Topic Duid="propone1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
    <FormalName Scheme="PropertyOneValueScheme">P1value1</FormalName>
    <Description xml:lang="en-GB">First value for property1 of my Metadata</Description>
  </Topic>
  <Topic Duid="propone2">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
    <FormalName Scheme="PropertyOneValueScheme">P1value2</FormalName>
    <Description xml:lang="en-GB">Second value for property1 of my Metadata</Description>
  </Topic>
  <Topic Duid="proptwo1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
    <FormalName Scheme="PropertyTwoValueScheme">P2value1</FormalName>
    <Description xml:lang="en-GB">First value for property2 of my Metadata</Description>
  </Topic>
  <Topic Duid="proptwo2">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
    <FormalName Scheme="PropertyTwoValueScheme">P2value2</FormalName>
    <Description xml:lang="en-GB">Second value for property2 of my Metadata</Description>
  </Topic>
</TopicSet>

```

```

    </Topic>
</TopicSet>

```

5. Insert Metadata within NewsComponent.

```

<Metadata Duid="mext1">
  <MetadataType FormalName="MetaTypeOne" Vocabulary="#mymetadata"
Scheme="MyMeta"/>
  <Property FormalName="PropertyOne" Vocabulary="#myprops" Scheme="MyProperty"
Value="P1value1" AllowedValues="#propone"/>
  <Property FormalName="PropertyTwo" Vocabulary="#myprops" Scheme="MyProperty"
ValueRef="#proptwo1"/>
</Metadata>

```

Declare TopicSets

```

<TopicSet Duid="mymetadata1" Scheme="ExtraTopicType" FormalName="MetaName">
  <Topic Duid="mmor">
    <TopicType Scheme="ExtraTopicType" FormalName="MetaName"/>
    <FormalName Scheme="MyMeta">Order</FormalName>
    <Description xml:lang="en-GB">Metadata type to specify NewsComponent
order</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="myprops2" Scheme="ExtraTopicType" FormalName="PropertyName">
  <Topic Duid="pco1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Display</FormalName>
    <Description xml:lang="en-GB">Order by display resolution.</Description>
  </Topic>
  <Topic Duid="pco1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Chronological</FormalName>
    <Description xml:lang="en-GB">Order by ascending date</Description>
  </Topic>
  <Topic Duid="pco2">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Alphabetical</FormalName>
    <Description xml:lang="en-GB">Order by alphabetic sequence</Description>
  </Topic>
  <Topic Duid="pco3">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Importance</FormalName>
    <Description xml:lang="en-GB">Order by importance attribute value of
DescriptiveMetadata.</Description>
  </Topic>
  <Topic Duid="pco4">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyName"/>
    <FormalName Scheme="MyProperty">Ranking</FormalName>
    <Description xml:lang="en-GB">Order by Rank attribute value in BasisForChoice element of
NewsComponent.</Description>
  </Topic>
</TopicSet>

<TopicSet Duid="propord" Scheme="ExtraTopicType" FormalName="PropertyValue">
  <Topic Duid="propor1">
    <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
    <FormalName Scheme="Order">Y</FormalName>
    <Description xml:lang="en-GB">Apply order in accordance with FormalName
value</Description>

```

```

</Topic>
<Topic Duid="propor2">
  <TopicType Scheme="ExtraTopicType" FormalName="PropertyValue"/>
  <FormalName Scheme="Order">N</FormalName>
  <Description xml:lang="en-GB">Do not apply order</Description>
</Topic>
</TopicSet>

```

Ordering of NewsComponents

A NewsItem has no implied ordering of its content. If explicit ordering is required then this may be achieved by using the Metadata element with an appropriate FormalName. A Property assigning the desired characteristics can be defined with FormalName and Value attribute content specified in associated TopicSets. Thus the order properties for NewsComponents may be specified.

Qualities such as importance, ranking, alphabetical, chronological and display could be selected.

In the Instance

```

<Metadata Duid="next2">
  <MetadataType FormalName="Order" Vocabulary="#mymetadata1"
Scheme="MyMeta"/>
  <Property FormalName="Display" Vocabulary="#myprops2" Scheme="MyProperty"
Value="Y" AllowedValues="#propord"/>
</Metadata>

```

This fragment shows that ordering is to be applied based on display resolution.

Content Inclusion Options (In order of preference)

- 1=. By reference, using a hyperlink.
- 1=. Use a namespace and to declare the namespace within the content item.
3. Insert a local DOCTYPE declaration at the head of the instance declaring the elements that are being used within the content text.
4. Use BINHEX coding which again makes the content entirely opaque to the NewsML processor.
5. Keep the text in whatever form it is and insert it within a CDATA section so that it is completely opaque to the NewsML processor.
6. Insert plain text (ensuring there are no "mark-up" characters present).

Examples

method 1: by reference

```
<ContentItem Href="http://www.me.com/story-body.nitf"/>
```

method 2: using XML Namespaces

(has some implementation support)

```

<ContentItem>
<DataContent>
<nitf xmlns="urn:nitf:iptc.org:20010419:NITF">
<body>
<p>Today, Clinton visited...</p>
<p><person>Al Gore</person> also
attended the...</p>

```

```

</body>
</nitf>
</DataContent>
</ContentItem>

```

method 3: by declaring the NITF DTD within NewsML OR referring to the NITF DTD as an external entity for this document instance (in the internal subset)

```

<ContentItem>
<DataContent>
<nitf>
<body>
<p>Today, Clinton visited...</p>
<p><person>Al Gore</person> also
attended the...</p>
</body>
</nitf>
</DataContent>
</ContentItem>

```

method 4: binhex the whole data content - without using CDATA

```

<ContentItem>
<Encoding notation="binhex">
<DataContent>LJASDLFJSL</DataContent>
</Encoding>
</ContentItem>

```

method 5: by CDATA

```

<ContentItem>
<DataContent>
<![CDATA[
<nitf>. . . .</nitf>
]]>
</DataContent>
</ContentItem>

```

method 6: plain text (excluding markup symbols)

```

<ContentItem>
<DataContent>
The quick brown fox jumped over the lazy dog.
</DataContent>
</ContentItem>_

```

Physical Metadata - Use of Characteristics Property Extensions

NewsML provides for the description of each piece of physical content referenced in a NewsItem by the following set of elements:

- MediaType
- Format
- Mimetype
- Notation
- Characteristics
- Encoding

Use of the above elements is optional. The IPTC has left it to the publishers to decide the best way of employing them for precisely defining the physical characteristics of content. Ideally, one wants to say "just enough" about a piece of content to tell a subscriber how to process it for appropriate rendering. The following guidelines apply to current media used in news reporting.

1. Video

Required

use MediaType element: set FormalName="video"

use Format element: set FormalName="type"

use Characteristics element to indicate file extension, video coder and version, audio coder and version, and the following optional parameters.

Optional

File Size (in bytes)

Frame Rate (frames/sec),

Active Lines (integer representing height in pixels)

Samples Per Line (integer representing width in pixels)

Average Bitrate (bits per second),

Fixed/Variable Bitrate encoding (boolean)

Total Duration (in seconds, optional field)

Redirector (file type)

Example Instance:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1"
"/.DTD/NewsMLv1.0.dtd">
<NewsML>
  <Catalog>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-mediatype:1</Urn>
      <Url>./topicsets/iptc-mediatype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcMediaTypes" Context="MediaType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-format:1</Urn>
      <Url>./topicsets/iptc-format.xml</Url>
      <DefaultVocabularyFor Scheme="IptcFormat" Context="Format"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-newsitemtype:1</Urn>
      <Url>./topicsets/iptc-newsitemtype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcNewsItemType" Context="NewsItemType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-status:1</Urn>
      <Url>./topicsets/iptc-status.xml</Url>
      <DefaultVocabularyFor Scheme="IptcStatus" Context="Status"/>
      <DefaultVocabularyFor Scheme="IptcStatus" Context="FutureStatus"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iso-language:1</Urn>
      <Url>./topicsets/iso-language.xml</Url>
      <DefaultVocabularyFor Scheme="ISO639" Context="Language"/>
    </Resource>
  </Catalog>
</NewsML>
```



```

    <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-topictype:1</Urn>
    <Url>./topicsets/iptc-topictype.xml</Url>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicType"/>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicSet"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1</Urn>
    <Url>./topicsets/iptc-characteristicsproperty.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-audiocoder:1</Urn>
    <Url>./topicsets/iptc-audiocoder.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property[@FormalName='AudioCoder']/@Value"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-videocoder:1</Urn>
    <Url>./topicsets/iptc-videocoder.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property[@FormalName='VideoCoder']/@Value"/>
  </Resource>
</Catalog>
<NewsEnvelope>
  <DateAndTime>20011122T100000</DateAndTime>
</NewsEnvelope>
<NewsItem>
  <Identification>
    <NewsIdentifier>
      <ProviderId>www.iptc.org</ProviderId>
      <DatId>20011122</DatId>
      <NewsItemId>PHMeta2</NewsItemId>
      <RevisionId PreviousRevision="0" Update="N">1</RevisionId>
      <PublicIdentifier>urn:newsml:www.iptc.org:20011122:PHMeta2:1</PublicIdentifier>
    </NewsIdentifier>
  </Identification>
  <NewsManagement>
    <NewsItemType FormalName="News" Scheme="IptcNewsItemType"/>
    <FirstCreated>20011122T100000</FirstCreated>
    <ThisRevisionCreated>20011122T100000</ThisRevisionCreated>
    <Status FormalName="Usable" Scheme="IptcStatus"/>
  </NewsManagement>
  <NewsComponent Duid="samp1">
    <ContentItem Href="http://www.iptc.org/test.asf">
      <MediaType FormalName="Video" Scheme="IptcMediaTypes"/>
      <Format FormalName="Windows Media" Scheme="IptcFormat"/>
      <Characteristics>
        <SizeInBytes>123456</SizeInBytes>
        <Property FormalName="FileExtension"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value=".asf"/>
        <Property FormalName="VideoCoder"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="ISO MPEG-4"
AllowedValues="urn:newsml:iptc.org:20011101:topicset.iptc-videocoder:1"/>
        <Property FormalName="VideoCoderVersion"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="1.0"/>
        <Property FormalName="AudioCoder"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"

```



```

Scheme="CharacteristicsProperty" Value="Microsoft Windows Media Audio"
AllowedValues="urn:newsml:iptc.org:20011101:topicset.iptc-audiocoder:1"/>
  <Property FormalName="AudioCoderVersion"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="7.0"/>
  <Property FormalName="Redirector"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value=".asx"/>
  <Property FormalName="FrameRate"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="50"/>
  <Property FormalName="AverageBitRate"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="456"/>
</Characteristics>
</ContentItem>
</NewsComponent>
</NewsItem>
</NewsML>

```

2. Audio

use MediaType element: set FormalName="audio"
use Formal element: set FormalName="type"

use Characteristics element to indicate file extension, audio coder and version, and the following optional parameters.

Optional

File Size (in bytes)
total Duration (in seconds, optional field)
average bitrate (bits per second)
sample size (8 or 16 bits)

Example Instance:

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1"
"/.DTD/NewsMLv1.0.dtd">
<NewsML>
  <Catalog>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-mediatype:1</Urn>
      <Url>./topicsets/iptc-mediatype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcMediaTypes" Context="MediaType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-format:1</Urn>
      <Url>./topicsets/iptc-format.xml</Url>
      <DefaultVocabularyFor Scheme="IptcFormat" Context="Format"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-newsitemtype:1</Urn>
      <Url>./topicsets/iptc-newsitemtype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcNewsItemType" Context="NewsItemType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-status:1</Urn>
      <Url>./topicsets/iptc-status.xml</Url>
      <DefaultVocabularyFor Scheme="IptcStatus" Context="Status"/>
    </Resource>
  </Catalog>

```

```

    <DefaultVocabularyFor Scheme="IptcStatus" Context="FutureStatus"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.iso-language:1</Urn>
    <Url>./topicsets/iso-language.xml</Url>
    <DefaultVocabularyFor Scheme="ISO639" Context="Language"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-topictype:1</Urn>
    <Url>./topicsets/iptc-topictype.xml</Url>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicType"/>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicSet"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1</Urn>
    <Url>./topicsets/iptc-characteristicsproperty.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-audiocoder:1</Urn>
    <Url>./topicsets/iptc-audiocoder.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property[@FormalName='AudioCoder']/@Value"/>
  </Resource>
</Catalog>
<NewsEnvelope>
  <DateAndTime>20011122T110000</DateAndTime>
</NewsEnvelope>
<NewsItem>
  <Identification>
    <NewsIdentifier>
      <ProviderId>www.iptc.org</ProviderId>
      <DateId>20011122</DateId>
      <NewsItemId>PHMeta3</NewsItemId>
      <RevisionId PreviousRevision="0" Update="N">1</RevisionId>
      <PublicIdentifier>urn:newsml:www.iptc.org:20011122:PHMeta3:1</PublicIdentifier>
    </NewsIdentifier>
  </Identification>
  <NewsManagement>
    <NewsItemType FormalName="News" Scheme="IptcNewsItemType"/>
    <FirstCreated>20011122T110000</FirstCreated>
    <ThisRevisionCreated>20011122T110000</ThisRevisionCreated>
    <Status FormalName="Usable" Scheme="IptcStatus"/>
  </NewsManagement>
  <NewsComponent Duid="samp1">
    <ContentItem Href="http://www.iptc.org/test.mp3">
      <MediaType FormalName="Audio" Scheme="IptcMediaTypes"/>
      <Format FormalName="MP3" Scheme="IptcFormat"/>
      <Characteristics>
        <SizeInBytes>123456</SizeInBytes>
        <Property FormalName="FileExtension"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value=".mp3"/>
        <Property FormalName="AudioCoder"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="MP3"
AllowedValues="urn:newsml:iptc.org:20011101:topicset.iptc-audiocoder:"/>
        <Property FormalName="AudioCoderVersion"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="1.0"/>
      </Characteristics>
    </ContentItem>
  </NewsComponent>
</NewsItem>
</NewsEnvelope>
</Catalog>

```

```

        <Property FormalName="TotalDuration"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="30"/>
        <Property FormalName="SampleSize"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="16"/>
    </Characteristics>
</ContentItem>
</NewsComponent>
</NewsItem>
</NewsML>

```

3. Photo

use MediaType element: set FormalName="photo"

use Format element: set FormalName="type"

Use Characteristics to indicate required parameters of height and width in pixels and the color space (greyscale, RGB, YCMK, or Palette) and the following optional parameter:

Optional

File Size (in bytes)

File Types:

JPEG Baseline

JPEG Progressive

GIF 87a

GIF89a non-interlaced

GIF89a interlaced

BMP (Microsoft Bitmap)

PNG (Portable Network Graphic)

PCX (Doesn't appear to stand for anything in particular)

TIF (Tagged Image File Format)

Example Instance:

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE NewsML PUBLIC "urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1"
"/.DTD/NewsMLv1.0.dtd">
<NewsML>
  <Catalog>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-mediatype:1</Urn>
      <Url>./topicsets/iptc-mediatype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcMediaTypes" Context="MediaType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-format:2</Urn>
      <Url>./topicsets/iptc-format.xml</Url>
      <DefaultVocabularyFor Scheme="IptcFormat" Context="Format"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-newsitemtype:1</Urn>
      <Url>./topicsets/iptc-newsitemtype.xml</Url>
      <DefaultVocabularyFor Scheme="IptcNewsItemType" Context="NewsItemType"/>
    </Resource>
    <Resource>
      <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-status:2</Urn>

```

```

    <Url>./topicsets/iptc-status.xml</Url>
    <DefaultVocabularyFor Scheme="IptcStatus" Context="Status"/>
    <DefaultVocabularyFor Scheme="IptcStatus" Context="FutureStatus"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.iso-language:1</Urn>
    <Url>./topicsets/iso-language.xml</Url>
    <DefaultVocabularyFor Scheme="ISO639" Context="Language"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20001006:topicset.iptc-topictype:1</Urn>
    <Url>./topicsets/iptc-topictype.xml</Url>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicType"/>
    <DefaultVocabularyFor Scheme="IptcTopicType" Context="TopicSet"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1</Urn>
    <Url>./topicsets/iptc-characteristicsproperty.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property"/>
  </Resource>
  <Resource>
    <Urn>urn:newsml:iptc.org:20011101:topicset.iptc-colorspace:1</Urn>
    <Url>./topicsets/iptc-colorspace.xml</Url>
    <DefaultVocabularyFor Scheme="CharacteristicsProperty"
Context="Characteristics/Property[@FormalName='ColorSpace']/@Value"/>
  </Resource>
</Catalog>
<NewsEnvelope>
  <DateAndTime>20011121T100000</DateAndTime>
</NewsEnvelope>
<NewsItem>
  <Identification>
    <NewsIdentifier>
      <ProviderId>www.iptc.org</ProviderId>
      <DateId>20011121</DateId>
      <NewsItemId>PHMeta1</NewsItemId>
      <RevisionId PreviousRevision="0" Update="N">1</RevisionId>
      <PublicIdentifier>urn:newsml:www.iptc.org:20011121:PHMeta1:1</PublicIdentifier>
    </NewsIdentifier>
  </Identification>
  <NewsManagement>
    <NewsItemType FormalName="News" Scheme="IptcNewsItemType"/>
    <FirstCreated>20011121T100000</FirstCreated>
    <ThisRevisionCreated>20011121T100000</ThisRevisionCreated>
    <Status FormalName="Usable" Scheme="IptcStatus"/>
  </NewsManagement>
  <NewsComponent Duid="samp1">
    <ContentItem Href="http://www.iptc.org/test.jpg">
      <MediaType FormalName="Photo" Scheme="IptcMediaTypes"/>
      <Format FormalName="JPEG Baseline" Scheme="IptcFormat"/>
      <Characteristics>
        <SizeInBytes>1234</SizeInBytes>
        <Property FormalName="FileExtension"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value=".jpg"/>
        <Property FormalName="Height"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="300"/>
        <Property FormalName="Width"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="100"/>
      </Characteristics>
    </ContentItem>
  </NewsComponent>
</NewsItem>
</NewsEnvelope>
</Catalog>

```

```
<Property FormalName="ColorSpace"
Vocabulary="urn:newsml:iptc.org:20011101:topicset.iptc-characteristicsproperty:1"
Scheme="CharacteristicsProperty" Value="RGB"
AllowedValues="urn:newsml:iptc.org:20011101:topicset.iptc-colorspace:1"/>
</Characteristics>
</ContentItem>
</NewsComponent>
</NewsItem>
</NewsML>
```

4. **Graphic** (this includes animations)

use MediaType element: set FormalName="graphic"

use Format element: set FormalName="type"

Use Characteristics to indicate required color space parameter eg

Greyscale

RGB

YCMK

Palette

X,Y,Z CIE

RGB SMPTE

L*a*b*(K) CIE

YCbCr

sRGB

and the following

Optional

height (in pixels)

width (in pixels)

height_width_ratio (n:m, where n,m are integers)- for vector graphics

duration (in seconds)

File Size (in bytes)

TopicSet Changes

In order to have standard controlled vocabularies for physical characteristics the IPTC has produced additional TopicSets for the Characteristics Property, AudioCoder, VideoCoder and ColorSpace values and updated the following TopicSets (Format, MediaType, Property and TopicType) to align with the new ones released.

Content Encoding Sequence

Where data is included, it may be directly in the form of a DataContent element, or in the form of DataContent wrapped in an Encoding element, or by reference through an Href attribute. In the latter case an empty Encoding element may be present.

Therefore, the following is possible:

```
<ContentItem Href="http://www.reuters.com/dataobject"/>
```

```
<MediaType FormalName="xxx"
Scheme="IptcMediaTypes"/>
  <Format FormalName="yyy" Scheme="IptcFormat"/>
  <Characteristics>
    <Property .....>
      .....
  </Characteristics>
  <Encoding Notation="www"/>
</ContentItem>
```

Where multiple Encoding has been applied such as a zip file that may have been subsequently Base64 encoded then the order of the Encoding elements is as follows:

```
<Encoding Notation ="Base64">
  <Encoding Notation ="zip"/>
</Encoding>
```

The last applied encoding is designated in the Encoding element that wraps any other previous Encoding that may have taken place.

Appendix A: NewsML Evolution

New releases of DTD and Schema

It is important to identify correctly any new release (implying a version number increase) of a NewsML DTD or Schema. The identifying URN will follow that already established for NewsML (see RFC 3085) and in order for this to be assigned the new DTD or Schema must be published within a NewsML NewsItem. The URN being the PublicIdentifier assigned to this publishing NewsItem.

NewsItem DOCTYPE

In order to prevent any difficulty arising in the interpretation of these important NewsItems they will always be validated using VERSION 1.0 of the NewsML DTD.

Revision Number of NewsItem

Whenever a new version of the DTD or Schema is published it will be through the release of a new NewsItem with version number 1. Thus each version will have a unique PublicIdentifier terminating with a figure 1.

Eg

urn:newsml:iptc.org:20001006:NewsMLv1.0.dtd:1 is the published URN for NewsML version 1.0 DTD.

Subsequent versions of the DTD or Schema will have a urn of the form:

urn:newsml:iptc.org:20021018:NewsMLv1.1.dtd:1

Version Number of the DTD or Schema

Subsequent to the release of version 1.0 of the NewsML DTD it was decided that future release should include an attribute of named "Version" on the NewsML element. To ensure backward compatibility this attribute will be optional but should always be included when any version other than 1.0 is being used as the DOCTYPE.

Hence for version 1.0 the following construct is recommended:

```
<NewsML>
...
</NewsML>
```

For later versions the following is to be used to ensure correct interpretation, especially if the publisher chooses not to employ a DOCTYPE declaration.

```
<NewsML Version="x.x">
...
</NewsML>
```

APPENDIX B: Use of Scheme Attribute (Contributed by Takahiro Fujiwara IBM Japan)

Pseudo Code to explain logic for resolving FormalName values

All elements which have FormalName attribute should be resolved using a controlled vocabulary.

The method of resolution is as follows:

```

If ./@Vocabulary exists then
  (This case NOT does not use Catalog/Resource/DefaultVocabularyFor)
  appropriate TopicSet:
    ./@Vocabulary
  appropriate Topic:
    If ./@Scheme exist then
      matches to (./@FormalName = Topic/FormalName)
      and (./@Scheme = Topic/@Scheme)
    Else
      matches to (./@FormalName = Topic/FormalName)
      and (Topic/@Scheme not exist)
    EndIf
Else
  (This case uses Catalog/Resource/DefaultVocabularyFor)
  appropriate TopicSet:
  The closest appropriate Catalog which has XPATH pattern of
  DefaultVocabularyFor/@Context matches to current element.
  appropriate Topic:
  If ./@Scheme exist then
    matches to (./@FormalName = Topic/FormalName)
    and (./@Scheme = Topic/@Scheme)
  Else
    If DefaultVocabularyFor/@Scheme exist then
      matches to (./@FormalName = Topic/FormalName)
      and (Topic/@Scheme = DefaultVocabularyFor/@Scheme)
    Else
      matches to (./@FormalName = Topic/FormalName)
      and (Topic/@Scheme not exist)
    EndIf
  EndIf
EndIf

```

Which Scheme to use.

[e]element [D]DefaultVocabularyFor	Vocabulary attribute exists		No Vocabulary attribute	
	No Scheme attribute	Scheme exists	No Scheme attribute	Scheme exists
Scheme exists	[e]	[e]	[D]	[e]override
No Scheme attribute	[e]	[e]	[D]	[e]override