IPTC Standards DRAFT

NewsML 2 Architecture

Version 1.0

Introduction to the Model

Document Revision 2

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Document file name (+ Word file extension ".doc")**: DRAFT-NAR_1.0-spec-ModelIntro_2.doc**

Document URN: urn:iptc:std-draft:NAR:1.0:spec:ModelIntro:2
(More information on IPTC URNs in RFC 3937)

Specification Versioning History

Version	Issue Date	Approved by	Remark
1		IPTC Standards Committee	UNDER REVIEW

Document Revision History

Revision	Issue Date	Author (revised by)	Remark
Draft 1	2006-03-08	Laurent Le Meur	Initial draft, out of Model draft 13.
Draft 2	2006-05-09	Laurent Le Meur	minor updates for EP2

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Table of contents

1   Overview of the NewsML 2 Architecture Model

1.1   A common model for all IPTC standards

News exchange covers not only the core news content, but also data that describe the content in an abstract way (i.e. metadata), information about how to handle news in an appropriate way (i.e. news management data), packaging of news related information and finally information about the news transportation or routing process itself (i.e. exchange data).

Having a strong background in developing and maintaining news exchange formats, the IPTC created the **IPTC NewsML 2 Architecture** as the most comprehensive and versatile way to move all types of data between media systems in order to make news exchange efficient and reliable.

The NewsML 2 Architecture defines:

- **Building blocks:** a model made of reusable structures, i.e. data types, basic and aggregate components.

- **News Metadata**: the model chosen for the representation of metadata and labels.

- **News Structure**: an abstract class acting as a model for all managed items defined by the NAR, and three standard classes derived from the abstract model: News Item, Topic Item and News Package. These classes are available for all IPTC standards, when more specialized classes are not needed.

- **News Message**: a model proposed for the exchange of Items in professional news industry syndication networks.

The choice of a common model for all IPTC standards eases their adoption and the related work on a precise processing model guarantees a very high interoperability level between providers and consumers of news. When specific needs arise, the extensibility of the model allows news providers to use externally defined components of information, and plug them into the framework.

1.2   Items and components

The NewsML 2 Architecture model defines *Items* and *Components*.

Items are manageable objects, i.e. objects with a persistent, universally unique identity and a set of management properties associated with a precise processing model.

An *Any Item* class models this abstract notion; generic and specialized Items are derived from the abstract model as part of each IPTC standard. Items optionally contain components. Using common components, Items of all kinds share certain properties (i.e. metadata) and may be interconnected in a consistent way, thus creating a powerful web of newsworthy information.

Components represent pieces of information that have a precise meaning and processing model. Components are included in items; some of them are specific to one type of Item, but others are common to several types of items. Common components can range from basic (also called properties in this document) to aggregate structures depending on the scale of reuse envisioned.

A set of Common Components defines context-free components representing the **administration**, **description**, **rights**, **publication**, and **protection** (via a digital signature) of newsworthy information.

1.3 Generic and specialized Items

The NewsML 2 Architecture model defines several classes of generic usage, which are not associated with any specific IPTC standard, but rather potentially used by any standard.

These classes are globally termed Generic Items. The NAR currently defines:

- A *News Item* aims to convey news with the sense of the reporting of a topical event.

- A *Topic Item* aims to convey knowledge about concepts (named entities such as organisations or classification term such as news subjects).

- A *Package Item* facilitates the packaging of all kinds of items, from really simple constructs to the highly hierarchical structures created by some news providers.

The model of these classes is described in details in this document.

Specialized Items are Items which include a collection of components usually chosen from a library. When no common component fits a given need, an IPTC standard defines or recommends components optimized for the handling of Specialized Content (sports results, TV program guides, event coverage, etc...).

1.4 News Message

The NewsML 2 Architecture model defines a *News Message* as a way to facilitate the exchange of all kinds of items in a broadcast (or multicast) network.

The use of a News Message is totally optional in a news workflow for conveying NAR Items. Any other possible syndication protocol may be used in order to exchange Items in a news workflow.

1.5 Overview diagram – Items and components

The following diagram illustrates the way the architecture is constructed. At the bottom of the diagram is a "real world" entity, like a car accident, a sports event, a famous athlete, a TV program. This entity is represented by some content. Sets of metadata are associated with this content. Some metadata components are shared between the different entity classes; other metadata components are specific to a given entity. This set of information is then wrapped in a managed container called an Item. Specific management properties indicate the precise class of the Item, and each Item gets a persistent, globally unique identifier.

The Item (individual instances derived from "AnyItem")							
Item components		Packaging	General News report	Person description	Event description	Radio/TV Program Listing	etc.
Management Component	itemClass	Package	News	Topic	TBD	Listing	TBD
	contentClass	Composite Text Photo Still Graphic Animated graphic Audio Video …	Text Photo Still Graphic Animated graphic Audio Video	Person	Event	TV	TBD
Common Metadata Components	signature administrative descriptive rights publication links …	☑ ☑ ☑ ☑ ☑ ☑	☑ ☑ ☑ ☑ ☑ ☑	☑ ☑ ☒ ☑ ☑ ☑	☑ ☑ ☒/☑ TBD ☒/☑ TBD ☒/☑ TBD ☑	☑ ☑ ☒/☑ TBD ☒/☑ TBD ☒/☑ TBD ☑	☑ ☑ ☒/☑ TBD ☒/☑ TBD ☒/☑ TBD ☑
	generic topic information …	-	-	☑	☒/☑ TBD	-	☒/☑ TBD
Optional Content Component		Group Structure = XML hierarchical structure of references of other Items	News Content Components. = XML markup; plain text; binary photo, graphic, audio, video	Person Content Component = XML marked up person information	Event Content Component = XML marked up event information	Program-Guide Content Component = XML marked up radio/TV program information	TBD
equivalent to … in the „Real World"		none					TBD

Version 5-1 (as of 2006-05-10)

Legend to the diagram:
TBD = To Be Defined (= not defined at the time of creating this diagram)

1.6   Conformance levels

Different Conformance Levels are defined in the model, each of them related to a level of complexity (at the conceptual and processing level) of the related Items. This feature adds **modularity** to the model.

The current model defines two conformance levels named "**core**" and "**power**". The core conformance level is focused on simplicity and interoperability. The power conformance level gives more flexibility to providers who choose it, but the recipient processors are more complex to program, and interoperability is lower than in the first case as not all recipients will implemented the power level.

A NewsML2 processor can therefore be labelled as supporting either "core" or "power" functionality.

A NewsML2 "power" processor must provide all of the "core" functionality, plus the functionally marked as "power conformance level feature" in this document.

As the "power" features are only an extension of the "core", a NewsML2 "core" processor can process "power level" Items, simply ignoring the information he's not able to process. As rights management is part of the power conformance level, a provider must be careful not to send to "core" processors rights-protected information.

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