PRISM:

Publishing Requirements for Industry Standard Metadata

PRISM Specification: Modular: Version 1.2

PRISM Compliance

2005 02 26

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1   Status

1.1   Document Status

The status of this document is:

✓	Draft
✓	Released for Public Comment
✓	Released

1.2   Document Location

The location of this document is:

http://www.prismstandard.org/ specifications/1.2/modularized/PRISM_compliance_12.pdf

1.3   Version History

Version Number	Release Date	Editor	Description
1.2	1/26/05	McConnell	Converted from unmodularized PRISM spec v 1.2

2 PRISM Documentation Structure

As of this release, PRISM is described in a set of formal, modularized documents that, taken together, represent "the PRISM Specification." Together these documents comprise the PRISM Documentation Package.

The initial release of the modularized PRISM Documentation Package, is the equivalent of the single document PRISM 1.2 Specification that was approved in December 2004. Moving forward, the monolithic PRISM Specification will no longer be maintained. All revisions will be made to individual documents in the PRISM Documentation Pachage, with each being versioned separately. Over time, new documents may also be added to the documentation package that makes up the PRISM Specification.

2.1 Normative and Non-normative Sections

Documents in the PRISM Documentation Package may contain both normative and non-normative material; normative material describes element names, attributes, formats, and the contents of elements that is required in order for content or systems to comply with the PRISM Specification. Non-normative material explains, expands on, or clarifies the normative material, but it does not represent requirements for compliance. Normative material in the PRISM Documentation Package is explicitly identified as such; any material not identified as normative can be assumed to be non-normative.

2.1.1 Requirement Wording Note

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC-2119]. The PRISM Specification also uses the normative term, "STRONGLY ENCOURAGES," which should be understood as a requirement equivalent to MUST in all but the most extraordinary circumstances.

Capitalization is significant; lower-case uses of the key words are intended to be interpreted in their normal, informal, English language way.

2.2   The PRISM Documentation Package

The PRISM Documentation Package consists of:

Document	Description
PRISM Introduction [PRISMINT]	Overview, background, purpose and scope of PRISM; examples; contains no normative material.
PRISM Compliance [PRISMCOMP]	Describes two profiles of PRISM compliance for content and systems; includes normative material.
The PRISM Namespace [PRISMPRISMNS]	Describes the elements contained in the PRISM namespace; includes normative material.
The PRISM Subset of the Dublin Core Namespace [PRISMDCNS]	Describes the elements from the Dublin Core namespace that are included in PRISM; includes normative material.
The PRISM Rights Language Namespace [PRISMRLNS]	Describes the elements contained in the PRISM Rights Language Namespace; includes normative material.
The PRISM Inline Markup Namespace [PRISMIMNS]	Describes the elements contained in the PRISM Inline Markup Namespace; includes normative material.
The PRISM Controlled Vocabulary Namespace [PRISMCVNS]	Describes the elements contained in the PRISM Controlled Vocabulary Namespace; includes normative material.
The PRISM Aggregator Message Namespace [PRISMAMNS]	Describes the elements contained in the PRISM Aggregator Message Namespace; includes normative material.

Table 1.0: PRISM Documentation Package

2.2.1   Additional PRISM Documentation

The PRISM Aggregator Message (PAM), a DTD-based application of PRISM, adds a small namespace of its own, formally described in [PRISMAMNS]. The structure and use of PAM are described separately in Guide to the PRISM Aggregator Document Type Definition (DTD) V. 1.1. [PAMGUIDE]

2.2.2   Access to PRISM Documentation

The PRISM Documentation Package, the PAM Guide (see above), the PAM DTD, and a range of other information concerning PRISM are all publicly and freely available on the PRISM website, www.prismstandard.org.

3   Introduction

3.1   Purpose and Scope

The purpose of this document is to describe the required or normative aspects of the PRISM Specification, with reference to content and systems that wish to assert that they are "PRISM compliant."

Since the PRISM Specification, per se, does not require a specific machine-verifiable format -- there is no PRISM DTD or schema -- it is possible to make use of PRISM elements in a wide range of ways, not all of which will provide the benefit of standardized content that PRISM was designed to realize. Consequently, the PRISM Working Group has identified two general profiles of compliance, described in this document. Adherence to either one will provide a reliable framework for metadata within PRISM's area of applicability.

4   PRISM Compliance

Since PRISM is designed to specify the form of content maintained in and exchanged between systems, it does not set out to constrain the behavior of systems to any greater extent than it has to. It also recognizes a different set of constraints upon systems when they are producing PRISM-compliant content and when they are consuming it. And, as described below, it provides for two different forms of PRISM compliance in the content itself.

In an effort to provide the maximum utility to those who adopt PRISM, the PRISM Working Group has defined two different forms of PRISM compliance, **profile two** and **profile one**.. The intent of both forms is to ensure that a system receiving PRISM compliant content can rely on the meaning of metadata being as specified in this document, and, if the content is asserted to be profile two compliant, that it will also be structured as specified here. The PRISM Working Group recommends but does not require profile two compliance.

Finally, a system that claims either profile of PRISM compliance is only constrained in a very minimal way with regard to the specific PRISM namespaces and elements it supports. Consequently, the developers of such systems MUST publish and maintain an accurate description of the PRISM namespaces and elements they support, in order to claim either form of "PRISM compliance" under the terms of this specification.

4.1   Constraints on Systems Producing PRISM Compliant Content

Systems MUST assert that they are capable of producing profile two or profile one PRISM compliant content. At this point, the assertion is assumed to be contractual, not machine readable. Content of any supported PRISM elements MUST be as described in this specification. Specifically, systems MUST NOT add elements or attributes to PRISM namespaces and vocabularies or to the Dublin Core namespace; systems MUST NOT define optional elements as mandatory.

4.1.1   Producing profile two compliant PRISM content

A profile two compliant system MUST produce content structured as specified in Section 5: PRISM Profile of the Resource Description Framework. It MUST support the Dublin Core namespace, the RDF namespace, and the rdf:about element. It MUST support one or more PRISM namespaces and one or more elements from each supported namespace.

4.1.2   Producing profile one compliant PRISM content

A profile one compliant system MUST produce content structured in well-formed XML. It MUST support the Dublin Core namespace and the dc:identifier element. It MUST support one or more PRISM namespaces and one or more elements from each supported namespace.

4.2   Constraints on Systems Consuming PRISM Compliant Content

Systems MUST assert that they are capable of consuming profile two or profile one PRISM compliant content. At this point, the assertion is assumed to be contractual, not machine readable. Systems MUST treat content of any supported PRISM elements as described in this specification. Specifically, systems MUST NOT add elements or

attributes to PRISM namespaces and vocabularies or to the Dublin Core namespace; systems MUST NOT define optional elements as mandatory.

Systems are not required to discard well-formed metadata that is unknown or uninterpretable within their scope. Systems SHOULD retain and retransmit any information that is not malformed or otherwise non-compliant, regardless of its utility or value within their scope.

Systems MUST be capable of handling elements and attributes that are not part of the PRISM Specification without generating an error. A well-formed element or attribute, otherwise unknown, MUST NOT be considered an error in PRISM-compliant content.

4.2.1   Consuming profile two compliant PRISM content

A profile two compliant system MUST consume ("read," "accept as input") content structured as specified in Section 5: PRISM Profile of the Resource Description Framework. It MUST expect the Dublin Core namespace and the rdf:about element; It MUST support one or more PRISM namespaces and one or more elements from each supported namespace.

4.2.2   Consuming profile one compliant PRISM content

A profile one compliant system MUST consume ("read," "accept as input") content structured in well-formed XML. It MUST expect the Dublin Core namespace and the dc:identifier element. It MUST support one or more PRISM namespaces and one or more elements from each supported namespace.

4.3   Constraints on PRISM-compliant content models

Where an organization is developing a content model using PRISM namespaces and elements, whether or not the resulting abstraction of content (a set of database tables, a specification, a DTD, a schema, etc.) is realized as part of a software system, if PRISM compliance is to be claimed, then the same constraints apply to the content models as apply to PRISM content producers.

4.4   Identifying PRISM Content

The Internet Media Type (aka MIME type)[IETF-MIMETYPES] for profile two compliant PRISM descriptions is "application/prism+rdf+xml". When PRISM descriptions are stored as XML files, the preferred filename extension is ".prism". When neither of those two identification methods are appropriate, the content can be scanned for occurrences of the URI "http://www.prismstandard.org/namespaces/1.2/basic used as a namespace URI in an XML documents. Such documents are considered to be PRISM content.

4.5 Namespace and Vocabulary Identifiers

Systems that claim PRISM profile two or one compliance MUST recognize and support namespaces as defined in sections 4.1 and 4.2. Systems MAY use the namespace declarations below in order to use familiar prefixes.

Namespace	Recommended Namespace Declaration
Resource Description Framework	xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
Dublin Core	xmlns:dc="http://purl.org/dc/elements/1.2/"
PRISM	xmlns:prism="http://prismstandard.org/namespaces/1.2/basic/"
PRISM Controlled Vocabulary	xmlns:pcv="http://prismstandard.org/namespaces/1.2/pcv/"
PRISM Inline Markup	xmlns:pim="http://prismstandard.org/namespaces/1.2/pim/"
PRISM Rights Language	xmlns:prl="http://prismstandard.org/namespaces/1.2/prl/"
PRISM Aggregator Message	xmlns:prl="http://prismstandard.org/namespaces/1.1/pam/"

Table 2: Namespaces Used In PRISM Descriptions

The PRISM Specification also defines a number of controlled vocabularies. The base URIs for those vocabularies are:

Vocabulary Name	Base URI
Content Categories (genres)	http://prismstandard.org/vocabularies/1.2/category.xml
Resource Types (presentation types)	http://prismstandard.org/vocabularies/1.2/resourcetype.xml
PRL Usage Types	http://prismstandard.org/vocabularies/1.2/usage.xml
PRISM Rights	http://prismstandard.org/vocabularies/1.2/rights.xml
PAM Class	http://prismstandard.org/vocabularies/1.2/pam.xml

Table 3: Base URIs for PRISM Controlled Vocabularies

All PRISM-compliant systems MUST recognize the #notReusable entry in the PRISM Rights vocabulary and handle it appropriately. See [PRISMRLNS] and below, PRISM Controlled Vocabularies.

In addition to the PRISM-defined vocabularies, a number of other vocabularies and data formats are recommended by PRISM as current best practice. Those are:

4.5.1   Date-time

PRISM-compliant applications sending metadata to other systems are STRONGLY ENCOURAGED to use the W3C profile of ISO 8601 [W3C-DateTime] as the format of their date and time values, including time zone data (tz). Implementers are advised, however, that this specification may be supplanted in the future by one which allows features such as ranges of times, or the use of the tz library's method of specifying time zone offsets as strings composed of Continent/City. So implementations SHOULD be able to deal with other forms.

4.5.2   Locations

PRISM-compliant applications sending metadata to other systems are STRONGLY ENCOURAGED to use the codes from [ISO-3166] as the values for the <prism:location> and <prl:geography> elements.

ISO has not yet defined a standard URI convention for those codes. In order to maximize interoperability, implementations MAY wish to use the following non-resolvable URLs .

http://prismstandard.org/vocabs/ISO-3166/XX

where XX is a 2-letter uppercase country code, and

http://prismstandard.org/vocabs/ISO-3166-2/XX-YYY

where XX is as above and YYY is a one to three-character alphanumeric subregion code.

The ISO 3166 codes do not cover cities, counties, or historical locations. In situations where finer coverage is needed, implementers MAY wish to use codes from the Thesaurus of Geographic Names [TGN].

4.5.3   Industrial Sector

PRISM-compliant applications sending metadata to other systems MAY wish to use the industry sector codes from [NAICS] as the values for the <prism:industry> element and <pim:industry>'s href attribute.

4.6   PRISM Controlled Vocabularies

The PRISM Specification generally focuses on the elements and attributes that may be used in a PRISM metadata document. Elements, in effect, define the syntax of the document. To convey the meaning of a document, the values that a given element may take must also be defined. This section lists the controlled vocabularies that comprise the set of legal values for certain PRISM elements. Other elements use controlled vocabularies created and maintained by third parties (such as the ISO 3166 codes for country names). Still other elements will require some domain-specific controlled vocabulary (e.g., the North American Industrial Classification System).

Media types, such as text/html or image/jpeg, provide enough information for software to render data. But activities like discovery and re-purposing demand more specific information about the role of a resource. The PRISM Specification defines two controlled vocabularies for specifying different aspects of the nature of a resource: the Resource Type and the Resource Category. It also defines a one-element vocabulary for very basic rights operations. PRL also defines a small controlled vocabulary of usages for content.

4.6.1   Rights Vocabulary

The Rights vocabulary is used to express rights restrictions.

Term	Definition
#none	No use can be made of the resource under the specified conditions.
#use	The resource can be used under the specified conditions. The limits on the resource's use are not further specified in the PRISM description and the relevant licensing agreement must be consulted.
#notApplicable	The conditions on use are not applicable to the current state of the system and the intended use(s) of the resource.
#permissionsUnknown	It is not known whether the resource can be used or not. Proceed at own risk.

Table 4: Predefined Resource Rights in PRISM Rights Language

The URI for the PRISM resource type vocabulary is:

http://prismstandard.org/vocabularies/1.2/rights.xml.

4.6.2   Usage Vocabulary

The Usage specifies ways that the resource may be reused. This vocabulary contains a common usage value.

Term	Definition
#notReusable	The sender does not grant the receiver the rights to reuse the content.

Table 5: Predefined Resource Usages in PRISM

The URI for the PRISM resource type vocabulary is:

http://prismstandard.org/vocabularies/1.2/usage.xml.

4.6.3   Resource Type Vocabulary (presentation style)

The Resource Type defines the way that a resource *presents* information. The Resource Type captures different information than the format of a resource, as specified using MIME types. For example, a JPEG could be a photo, line drawing, or chart. The rendering software does not care, but potential users of the content do. The Resource type is also not specific to its intellectual content (e.g. election results vs. death rates can both be rendered as

JPEG charts, but not as photographs). The Resource Type values form a controlled vocabulary for the dc:type element.

The URI for the PRISM resource type vocabulary is:

http://prismstandard.org/vocabularies/1.2/resourcetype.xml.

The PRISM resource type vocabulary is largely drawn from the print medium. Presentations that are idiomatic to film, audio, animation, and other mediums are only thinly represented. Organizations interested in describing items in such media may wish to consult the Art and Architecture Thesaurus [AAT].

Term	Definition
article	Literary compositions prepared for publication as an independent portion of a magazine, newspaper, encyclopedia, or other work. [AAT]
birdsEye	Visual depiction from an extremely high viewpoint.
book	Sheets of paper, parchment, or similar material, that are blank, written on, or printed, and are strung or bound together; especially, when printed, a bound volume, or a volume of some size. [AAT]
body	The principal component of the resource. [NewsML]
caption	Text identifying or explaining, and printed in close proximity to, illustrations or other images. [AAT]
catalog	Enumerations of items, usually arranged systematically, with descriptive details; may be in book or pamphlet form, on cards, or online. [AAT]
clip	A short segment of a work, typically in audio and/or visual presentation.
close-up	A visual presentation emphasizing the proximity of the point of view to the observed object. [after AAT]
credit	An acknowledgement, appearing in the style of a caption.
correction	A new version of an item, replacing what was wrong in the previous version.
electronicBook[1]	A digital object typically thought of as an electronic analog to a physical hardcover or soft cover book.
graph	Representations of any sort of data by means of dots, lines, or bars; usually to illustrate relationships. [AAT]
homePage	A web page intended as an entry point into a set of web pages.
illustration	Representations or diagrams that clarify, usually accompanying a text, sometimes part of an advertisement. [AAT]
index	A list, usually in alphabetical order, of persons and/or subjects referred to in a document, with location of references thereto.
interactiveContent	Content, such as crossword puzzles, financial calculators and applets, that invites a person to do something other than read or view the material.
Issue	One issue from a serial publication
journal	Periodicals containing scholarly articles or otherwise disseminating information on developments in scholarly fields. [AAT]
list	A series of names, words, or other items written, printed, or imagined one after the other. [Dictionary.com]
magazine	Periodicals containing articles, essays, poems, or other writings by different authors, usually on a variety of topics and intended for a general reading public or treating a particular area of interest for a popular audience. [AAT]
manual	Work containing concise information, often rules or instructions needed to perform tasks or processes. [AAT]

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[1] The PRISM Specification does not say anything about the logical structure of books, e.g. chapters, sections or the like.

Term	Definition
map	Graphic or photogrammetric representations of the Earth's surface or a part of it, including physical features and political boundaries, where each point corresponds to a geographical or celestial position according to a definite scale or projection. The term may also refer to similar depictions of other planets, suns, other heavenly bodies, or areas of the heavens. Maps are typically depicted on a flat medium, such as on paper, a wall, or a computer screen. [AAT]
newspaper	Collections of material distributed daily, weekly, or at some other regular and usually short intervals and which contain news, editorials and opinions, features, advertising, and other matter considered of general interest. [AAT]
photo	A picture of a person or scene in the form of a print or transparent slide; recorded by a camera on light-sensitive material. [WORDNET]
sidebar	Component associated with an article, that typically presents additional, contrasting, or late-breaking news. [AAT]
table	Condensed, orderly arrangements of data, especially those in which the data are arranged in columns and rows. [AAT]
webPage	An HTML document.
wormsEye	Visual depiction from an extremely low viewpoint.

Table 6: Controlled Vocabulary of Presentation Styles

4.6.4   Resource Category Vocabulary

The Resource Category describes the genre, or the stereotypical form of the *intellectual* content of the resource. Sample genre include obituaries, biographies, and movie reviews. The Resource Category values form a controlled vocabulary for the `prism:category` element, defined by the PRISM specification.

The URI for the PRISM Resource Category vocabulary is:

http://prismstandard.org/vocabularies/1.2/category.xml

Some genre, such as maps or indices, strongly associate the nature of the intellectual content and the style of presentation. Those are only listed in **Error! Reference source not found.**

Term	Definition
abstract	A section featuring the most important points of a work. [NewsML]
acknowledgement	Written recognition of acts or achievements. [AAT]
advertisement	Piece of material whose presence is paid for. [NewsML]
analysis	A study about a work
authorBio	Brief text about the author of a work.
autobiography	Biography of an individual written by himself or herself. [after AAT]
bibliography	A section describing lists of books or other textual materials arranged in some logical order giving brief information about the works, such as author, date, publisher, and place of publication; may be works by a particular author, or on a particular topic. [AAT]
biography	Written accounts of the lives of individuals. [AAT]
brief	Material shorter than a typical article, frequently part of a collection under a single headline.
cartoon	Pictorial images using wit to comment on such things as contemporary events, social habits, or political trends, usually executed in a broad or abbreviated manner. [AAT]
chronology	
classifiedAd	An advertisement, usually brief, appearing in a publication under headings with others of the same category.
column	Editorial or syndicated column.
cover	
electionResults	The results of an election.
eventsCalendar	Describes events that are happening over a specified period of time.

Term	Definition
excerpt	
feature	A prominent or special article, story, or department in a newspaper or periodical. [Dictionary.com]
financialStatement	Reports summarizing the financial condition of an organization on any date or for any period. [AAT]
interview	Statements, transcripts, or recordings of conversations in which one person obtains information from another such as for research purposes, publication, or broadcast. [AAT]
legalDocument	Documents having legal relevance in general. [AAT]
letter	
letterToEditor	A letter sent to the editors of a publication expressing an opinion.
logo	Graphic images that are designed for ready recognition to identify a product, company, or organization and sometimes used as trademarks, and that are symbol- or picture-based. [AAT]
newsBulletin	Information about recent events or happenings, especially as reported by newspapers, periodicals, radio, or television. [AAT]
notice	Announcements given for a specific purpose.
obituary	Published notices of a death, usually with a brief biography of the deceased. [AAT]
opinion	An article in a publication expressing the opinion of its author.
photo essay	
poll	An inquiry into public opinion conducted by interviewing a random sample of people [WORDNET]
portrait	A depiction of an individual.
pressRelease	Official or authoritative statements giving information for publication in newspapers or periodicals. [AAT]
productDescription	A description of a product with no editorial evaluation. (See "review")
profile	An essay presenting noteworthy characteristics and achievements. Use "profile" for places and organizations and "biography" for individual persons.
quotation	A repetition or copy of the words or expressions of (another), usually with acknowledgment of the source. [after dictionary.com]
ranking	
recipe	Sets of directions with a list of ingredients for making or preparing something, especially food. [AAT]
review	A description of some thing (e.g., a product, event, or service) that includes an editorial evaluation. (See "productDescription")
stockQuote	Information on a company's stock price, too brief to be considered a financial statement.
schedule	Plans of procedure, showing the sequence of items or operations and the time allotted for each. [AAT]
tableOfContents	A sequential list of the parts of a work, usually with a page number or other symbols indicating where each part begins. [AAT]
transcript	Written record of words originally spoken, such as of court proceedings, broadcasts, or oral histories. [AAT]

Table 7: Controlled Vocabulary of Resource Categories

4.6.5   PAM Class Vocabulary

The PAM Class Vocabulary describes parts of magazine articles. This controlled vocabulary provides values for for the `class=` , attributes found in elements in the PRISM Aggregator Message. The URI for the PRISM PAM Class Vocabulary is:

http://prismstandard.org/vocabularies/1.2/pam.xml

Term	Definition
byline	The byline (author) of the story.
dateline	The geographical location where the story was filed, e.g., city, state, and/or country where the story originated.
deck	A sub-head or secondary headline that generally is preceded by the article headline and precedes the body of the story.
footnotes	Note above the footer of the page made up of the note and the reference to the note
lead-in	Eye catching beginning to a caption.
sidebar	A separate piece of content presented as part of an article.

Table 8: Controlled Vocabulary of PAM Classes

4.7   Identifiers

PRISM profile two compliant files MUST use the rdf:about attribute on rdf:Description elements to specify the resource being described. The value of the rdf:about attribute is STRONGLY ENCOURAGED to be a URI reference [RFC-2396]. The dc:identifier element MUST be used to contain any additional identifiers to be sent, or any identifiers that cannot be represented as a URI reference . For example, a resource can be identified by a URI and by an internal asset ID that an organization would use to access it in their database. PRISM-compliant applications are STRONGLY ENCOURAGED to maintain the unique identifier(s) provided for a resource.

PRISM profile one compliant files MUST use the dc:identifier element to specify the resource being described. This value is STRONGLY ENCOURAGED to be a unique identifier.

PRISM's only policy on the assignment of identifiers is that the party assigning an identifier MUST NOT assign the same identifier to a different resource, using whatever definition of 'different' the assigning party deems appropriate.

PRISM compliant systems MUST regard two resources as being 'the same' if they have the same unique identifier. The party assigning the identifier is the sole arbiter of what they mean by 'the same'. Note that this definition does not imply that two resources are different if their identifiers are different. Different identifiers MAY (and frequently will) be assigned to the same resource.

PRISM does not require that all resources carry the same identifier through their entire lifecycle. However, if the publisher assigns a new identifier to non-reusable content obtained from an external party, the publisher SHOULD retain information on the origin and licensing of the resource so that someone later in its lifecycle can determine how to obtain the rights to reuse it.

4.8   Cardinality and Optionality

All PRISM descriptions MUST contain at least one identifier for the resource being described, expressed in the rdf:about attribute (profile two) or the dc:identifier element (profile one). Any number of additional identifiers MAY be expressed in dc:identifier elements. However, at least one other field MUST be specified in a description in order to have a meaningful model.

All other Dublin Core elements are optional, and any of them MAY be repeated any number of times . Unless specifically noted otherwise, PRISM elements are also optional and MAY occur any number of times in a description.

4.9   Automatic Creation of Inverse Relations

PRISM includes elements for specifying relations between resources (e.g. Resource1 isVersionOf Resource2). Those relations have inverse relations that are also in the PRISM Specification (e.g., Resource2 hasVersion Resource1).

PRISM-compliant systems which receive one side of such a relation MAY infer the presence of the additional inverse relation. To be more specific, if the implementation tracks the origin of individual RDF statements and can

segregate its database in order to undo the addition of such inferred inverses, it SHOULD infer the inverse and keep it segregated from the original input. If an implementation does not track individual statements and sources, it MAY infer the inverse relations but is cautioned about the possibility of data corruption.

5   PRISM Profile of the Resource Description Framework

The Resource Description Framework (RDF) has been standardized by the W3C to provide a general framework for metadata. As such, its capabilities exceed those required by PRISM. Therefore, this document specifies a 'profile' – a restricted subset – of RDF that all PRISM profile two-compliant software MUST support. This profile excludes certain capabilities of RDF that are not needed in PRISM applications, thus simplifying the development of PRISM applications .

Applications conforming to the PRISM Specification and claiming profile two compliance MUST produce correct RDF documents that can be read by any RDF-compliant software. They MUST also produce documents that conform to the PRISM profile of RDF. PRISM-compliant software does not have to be capable of processing arbitrary RDF documents.

5.1   Constraint 1: Top-level structure of Descriptions

The formal grammar for RDF [W3C-RDF] specifies:

[6.1] RDF ::= ['<rdf:RDF>'] obj* ['</rdf:RDF>']

[6.2] obj ::= description | container

For PRISM descriptions, the rdf:RDF wrapper element is required, and its child elements are restricted to being rdf:Description elements. The production that replaces productions 6.1 and 6.2 for PRISM systems is:

RDF ::= '<rdf:RDF' namespace_decls '>' description+ '</rdf:RDF>'

5.2   Constraint 2: rdf:aboutEachPrefix disallowed

PRISM descriptions MUST NOT use the rdf:aboutEachPrefix attribute. Production [6.8] of the RDF M&S specification thus becomes:

AboutEachAttr ::= ' aboutEach="' URI-reference '"'

5.3   Further Qualifications

No other overall restrictions in the allowed RDF syntax are specified in this section. However, implementers are advised to pay particular attention to the following points:

Many elements, such as dc:subject, may take a string as a value, or may use a URI for identifying an element in a controlled vocabulary of subject description codes. The URI may be a simple reference, or may provide an inline description of the controlled vocabulary term. Implementations MUST be capable of handling all three of those cases reliably.

Implementers must decide how their system will deal with unsupported descriptive elements. The PRISM Specification does not preclude other descriptive elements, although their interoperation cannot be guaranteed. PRISM implementations MAY retain unknown descriptive elements and retransmit them .

To aid automated processing of PRISM metadata, this specification defines a separate namespace for PRISM elements suitable for in-line markup. Thus, prism:organization is an RDF statement and pim:organization is used as in-line markup.

The PRISM Working Group encourages implementers to keep the generated markup as simple as possible. As an example, if a work has multiple authors, RDF allows that situation to be encoded in two ways, which have slightly different meanings. The first way uses multiple dc:creator elements, each listing a separate author. The second way is to have a single dc:creator element, which then contains one of RDF's collection constructs, such as rdf:Bag. That, in turn, would list the different authors. According to the RDF specification, the first is to be used when the authors acted as a collection of individuals in the creation of a work. The second is to be used when the authors acted as a committee. Experience has shown, however, that this distinction is too subtle for human catalogers to make reliably. The PRISM Working Group recommends using the first approach in most cases.

Note that although a sequence of dc:creator elements in an RDF/XML file implicitly defines a sequence (in the XML world), RDF parsers have no obligation to preserve that ordering, unlike if an explicit rdf:Seq were given. PRISM implementers are advised that there are quality of implementation issues between different RDF processors. In general, implementers MAY prefer to build on top of an RDF parser that allows the original order of the statements to be reconstructed. That would allow the original order of the authors on a piece to be reconstructed, which might or might not convey additional meaning to the viewer of a styled version of the record. Similarly, XML software that can handle the recently-standardized xml:base attribute MAY be preferred.

5.4   Conventions for Property Values

To aid in the automatic processing of PRISM documents, PRISM utilizes some conventions in expressing values of RDF properties. The values are expressed in three ways. First, a resource or an entry in a controlled vocabulary MAY be referenced with the rdf:resource attribute. For example, a book can be identified by its ISBN number as follows:

<dc:identifier rdf:resource="urn:isbn:0-932592-00-7"/>

Second, human readable text MUST be is represented as element content:

<dc:title>Juggling for the Complete Klutz</dc:title>

barring any circumstances where representing the text in element content would change the RDF as compared to representing it as an attribute value. That element content may contain XML markup, in which case the rdf:parseType attribute MUST be given and MUST have a value of 'Literal'.

Third, controlled vocabulary entries may be specified in-line.See Example 1:

```
<dc:subject>

  <pcv:Descriptor rdf:about="http://loc.gov/LC/QA-76">

    <pcv:vocabulary>Library of Congress Classification</pcv:vocabulary>

    <pcv:code>QA-76</pcv:code>

    <pcv:label>Mathematical software</pcv:label>

  </pcv:Descriptor>

</dc:subject>
```

Example 1: In-Line Controlled Vocabulary Entries

XML DTDs cannot describe such a flexible content model, but more recent schema languages such as XML Schema and RELAX can, with varying degrees of difficulty.

5.5   Convention 1: In-line controlled vocabulary term definitions preferred

PRISM descriptions make extensive use of values selected from controlled vocabularies. Conceptually, all that is needed is a reference to the vocabulary entry. But for practical considerations such as human readability, ease of use of full-text search tools, and performance, it is useful to be able to provide information about the controlled vocabulary entry, such as its human-readable label, directly in the description.

The PRISM Specification recommends that when this additional information is provided, that it be provided in-line, instead of as an additional rdf:Description element. In Example 2, a story whose subject is "Mining" as defined in the North American Industrial Classification System (NAICS), would have the following description:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<rdf:RDF xmlns:prism="http://prismstandard.org/namespaces/1.2/basic/"

        xmlns:pcv="http://prismstandard.org/namespaces/pcv/1.2/"

        xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

        xmlns:dc="http://purl.org/dc/elements/1.1/">

 <rdf:Description rdf:about="story.xml">

  <dc:subject>

   <pcv:Descriptor rdf:about="http://prismstandard.org/vocabs/NAICS/21">

    <pcv:vocab>North American Industrial Classification System</pcv:vocab>

    <pcv:code>21</pcv:code>

    <pcv:label>Mining</pcv:label>

   </pcv:Descriptor>

  </dc:subject>

 </rdf:Description>

</rdf:RDF>
```

Example 2: In-Line Description

as opposed to the form of the description in Example 3, where the controlled vocabulary term is described out-of-line instead of in-line.

```
<?xml version="1.0" encoding="UTF-8"?>

<rdf:RDF xmlns:prism="http://prismstandard.org/namespaces/1.2/basic/"

        xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

        xmlns:dc="http://purl.org/dc/elements/1.1/">


 <rdf:Description rdf:about="story.xml">

  <dc:subject rdf:resource="http://prismstandard.org/vocabs/NAICS/21"/>

 </rdf:Description>


 <pcv:Descriptor rdf:about="http://prismstandard.org/vocabs/NAICS/21">

  <pcv:vocab>North American Industrial Classification System</pcv:vocab>

  <pcv:code>21</pcv:code>

  <pcv:label>Mining</pcv:label>

 </pcv:Descriptor>

</rdf:RDF>
```

Example 3: Out-of-line Description

The two approaches are identical in terms of the RDF graph that is generated, but the former is believed easier to deal with using standard tools such as full-text indexing software or simple editing scripts.

Note that we use the rdf:about attribute when providing the information on the controlled vocabulary term. This indicates that the real definition of the term is elsewhere, and we are merely providing some local descriptions of that term.

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