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Research and Development for a Production System**

Overview of the Kernel Application Profile

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Overview of the Kernel Application Profile

1. What is Kernel

Kernel metadata is a prescriptive vocabulary based on a subset of the DC element set. It aims to assist orderly collection management by supporting highly uniform but minimal object descriptions. Kernel makes use of TEMPER (Temporal Enumerated Ranges) dates, ANVL (A Name-Value Language) syntax, and ERC object descriptions. ERC is a kind of object description that addresses four fundamental Kernel questions: who, what, when, and where. The relationship between Kernel and ERC can be described as: Kernel provides a metadata vocabulary, and ERC provides the requirement of four elements. RDF and XML may be used to format Kernel metadata.

2. Kernel Stories

A story is a particular aspect of the object addressed by the four fundamental Kernel questions of who, what, when, and where. Kernel currently defines four types of stories. One record may contain more than one story of an object. Only one story is required for a complete ERC record. It is called anchoring story. Other possible story types are: about-erc (which concerns the content of the object), meta-erc (which concerns commitment made to the object), and support-erc (which concerns the provenance of the metadata record).

3. Kernel Elements

Four elements for each story. Kernel elements currently include: who, what, when, where; about-who, about-what, about-when, about-where; meta-who, meta-what, meta-when, meta-where; support-who, support-what, support-when, support-where. Definitions of these elements are as follows:

who: a responsible person or party (required)
 what: a name or other human-oriented identifier (required)
 when: a date important in the object's lifecycle (required)
 where: a location or system-oriented identifier (required)

about-who: a person or party figuring in the information content
 about-what: a subject or topic figuring in the information content
 about-when: a time period covered by the information content
 about-where: a location or region covered by the information content

meta-who: a person or party responsible for the record
 meta-what: a short form of the identifier for the record
 meta-when: the last modification date of the record
 meta-where: a location of the fullest form of the record

support-who: a person or party responsible for the object
 support-what: a short form of the commitment made to the object
 support-when: the last modification date of the commitment
 support-where: a location of the fullest form of the commitment

Future versions of Kernel may extend the four fundamental questions with two additional but non-required elements: how and why. As a vocabulary, Kernel offers but does not obligate the use of its terms or rules. Kernel elements may appear in the same record with non-Kernel elements. Kernel rules can be complemented by other conventions.

4. Mapping Kernel to DC

Each Kernel element label has a coded synonym (SYN). The following table shows the rough correspondence between Kernel and Simple DC. Elements marked with "*" are required.

STORY	KERNEL	SYN	DC ELEMENT
erc:	*who	h1	Creator / Contributor / Publisher
	*what	h2	Title
	*when	h3	Date
	*where	h4	Identifier
	how	h5	Type (under development)
about-erc:	about-who	h11	Subject
	about-what	h12	Subject
	about-when	h13	Coverage
	about-where	h14	Coverage
	about-how	h15	Description (under development)
support-erc:	support-who	h21	(no equivalent)
	support-what	h22	(no equivalent)
	support-when	h23	(no equivalent)
	support-where	h24	(no equivalent)
meta-erc:	meta-who	h31	(no equivalent)
	meta-what	h32	(no equivalent)
	meta-when	h33	(no equivalent)
	meta-where	h34	(no equivalent)

5. Current Kernel Application

Kernel supports ARK identifiers (<http://www.cdlib.org/inside/diglib/ark/>) at California Digital Library, the HTTP URL Mapping Protocol (THUMP) (<http://tools.ietf.org/html/draft-kunze-thump-02>), and two open-source search engines: Amberfish and Isite2.

6. Publications and Websites

DCMI Kernel Metadata Task Group. (2007). Draft 2: Kernel Metadata and Electronic Resource Citations (ERC). <http://dot.ucop.edu/home/jak/erc2.html#TEMPER>.

DCMI Kernel Metadata Task Group. (2007). DCMI Kernel Metadata Community Meeting Presentation. <http://dublincore.org/groups/kernel/kernelWG-2007.ppt.pdf>.

DCMI Kernel Metadata Task Group. (2007). Kernel Metadata/ERC and Dublin Core Application Profiles. http://dublincore.org/kernelwiki/FrontPage?action=AttachFile&do=get&target=KernelMetadataERCAplicationProfiles1_1.htm.

DCMI Kernel Metadata Community Homepage. <http://dublincore.org/groups/kernel/>.

DCMI Kernel Metadata Task Group Wiki. <http://dublincore.org/kernelwiki/>.