

**CNS 國家標準草案：與情境相關服務之 OpenURL
架構鍵與編碼值格式實作指導綱要
(NISO Z39.88—2004：The OpenURL Framework for
Context-Sensitive Services：The Key/Encoded-Value (KEV)
Format Implementation Guidelines)**

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研譯

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規劃與建置數位內容與數位生活應用之技術標準環境

(案號：1D15960125-20)

The OpenURL Framework for Context-Sensitive Services
The Key/Encoded-Value (KEV) Format
Implementation Guidelines

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1.適用範圍

在學術資訊社群中，OpenURL 框架的主要應用在於使學術資訊系統中一個參考能根據情境鏈接到相關的資源物件項目。在 OpenURL 框架標準出版之前，已經有相關的應用使用 OpenURL 草案來進行(也就是目前大家所稱的 0.1 版)。傳統上使用 OpenURL 框架的方式是：當一個使用者在摘要以及索引相關資料庫系統或是電子期刊參考列表中，在某個 HTML 網頁點擊了連結或是按鈕時運作。點擊此連結的動作將導致一個學術資源(如一篇期刊論文)的描述開始進行傳送，傳送到該項參考相關動態內文的連結伺服器。接著這些相關動態內文將可以提供一個適合使用者使用的相關服務。此傳送動作是基於 HTTP(S)的 GET 或 POST 方法參考到一個所謂的 OpenURL。當你使用的是 OpenURL 0.1 版時，所使用的資訊(或稱 OpenURL 的負載)是透過 URL 查詢字串來進行傳送。鍵值/編碼資料格式提供了類似的方式來進行參考項目描述的傳送動作。XML 格式則是允許使用以 XML 語法的描述來進行傳送。

1.Scope

Within the scholarly information community the major application of the OpenURL Framework is to enable context-sensitive linking from a reference in a scholarly information system to resources relevant to the referenced item. Prior to the publication of the OpenURL Framework Standard, applications have been based on the draft OpenURL (now know as version 0.1). The traditional use of the OpenURL Framework is when a user clicks a link or button in an HTML page, typically within an 'abstracting and indexing' database application or the reference list of an electronic journal article. The result of activating this link is to transport a description of a scholarly resource, such as a journal article, to a linking server along with information about the dynamic context of the reference. Passing the dynamic context enables the provision of a list of relevant services

appropriate for the user. The Transport is based on HTTP(S) GET or POST and is referred to as “an OpenURL”. Using OpenURL version 0.1, the information, or “payload” of the OpenURL, is transported inline as the “query string” of a URL. The Key/Encoded-Value Format provides a similar means of transporting a description of a reference and its context. The XML Format allows XML descriptions to be transported.

本標準提供鍵值/編碼值(Key/Encoded-Value, KEV)格式的實作指導綱要，僅提供參考。當更多的實作經驗累積之後，本標準內容將會繼續改版演化。雖然本標準預期 OpenURL 框架標準與其預先定義的登錄內容是靜態不變的，但是本標準仍可能會適時進行更新，可是請注意在“試行使用草案標準”(draft standard for trial use)期間，登錄內容已經有些許的改變。

This document provides implementation guidelines for the Key/Encoded-Value Format. It is not an integral part of the Standard and is for information only. These guidelines will evolve over time as implementation experience is gained. Although it is intended that the OpenURL Framework Standard and the pre-defined content of the Registry will remain static, these guidelines may be updated when deemed appropriate. But note that there were some changes to the Registry during the ‘draft standard for trial use’ period.

本標準使用了原標準中的標記習慣，在原標準中所提及的辭彙，將會以斜體字來表示。

This document follows the notational convention used in the Standard in that terms defined in the Glossary of the Standard are shown in *italics font*.

1.1 社群資料

若在登錄中選定一個一致性核心組件集，且該等組件是適用於特定應用領域時，則此集合就稱之為社群剖繪(Community Profile)。社群剖繪的定義也會涵括在登錄之中。在 San Antonio 社群剖繪(San Antonio Community Profiles)中，第一層次(Level 1，指 KEV)以及第二層次(Level 2，指 XML 格式)提供了對學術資訊社群的支援，這也就是 OpenURL 框架起始的社群。此社群內容在登錄中有著機讀定義(machine readable definition)和識別符。同時也有一個簡易都柏林核心集的社群剖繪(Simple Dublin Core Community Profile)正在開發中。

附註：San Antonio 社群剖繪定義於原標準的附錄 C、D。

1.1 Community Profile

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile. The definitions of Community Profiles are also included in the Registry. The San Antonio Community Profiles, Level 1 (KEV) and Level 2 (XML), provide support for the scholarly information community, the community in which the OpenURL Framework originated. The San Antonio Profiles are defined in Appendices C and D of the Standard. They have machine readable definitions and identifiers in the Registry. There is also a Simple Dublin Core Community Profile under development.

2.用語釋義

2.1 情境物件(ContextObject)

針對被參考資源之描述，以及該項參考內文中所關聯資源的描述整合。

2.2 服務型式(ServiceType)

定義請求服務的型態。

2.3 社群剖繪(Community Profile)

在登錄中選定一個一致性核心組件集，且該集合適用於特定應用領域時，此集合即稱為社群剖繪。

2.4 參考者(Referrer)

產生情境物件的個體。

2.5 參考個體(ReferringEntity)

指參考到參考對象的個體。

2.6 參考對象(Referent)

由已建立之 ContextObject 所論及的個體，意指被參考到的資源。

2.7 都柏林核心集(Dublin Core)

1995 年 3 月由國際圖書館電腦中心(OCLC)和 National Center for Supercomputing Applications(NCSA)所聯合贊助的詮釋資料研討會，在集結 52 位來自圖書館、電腦、文字編碼各方面的學者和專家，共同研討下的產物，目的是希望建立一套描述網路上電子文件特色的方法，來協助資訊檢索。

2.8 解析器(Resolver)

請求服務所針對之個體。

2.9 數位物件識別符(Digital Object Identifier , DOI)

由字元串所組成的識別符，其符合國際數位物件識別符基金會(International DOI Foundation , IDF)所制定的規則，同時也會置入 DOI 目錄中進行管理。

2.10 請求者(Requester)

請求有關於參考對象服務之個體。

2. Terms and definitions

2.1 ContextObject

The description of a referenced resource, and the descriptions of the associated resources that comprise the context of the reference, bundled together are called a ContextObject.

2.2 ServiceType

The Entity that defines the type of service requested.

2.3 Community Profile

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile.

2.4 Referrer

The Entity that generated the ContextObject.

2.5 ReferringEntity

The Entity that references the Referent.

2.6 Referent

The Entity about which the ContextObject was created – a referenced resource.

2.7 Dublin Core

The March 1995 Metadata Workshop, sponsored by the Online Computer Library Center (OCLC) and the National Center for Supercomputing Applications (NCSA), convened 52 selected researchers and professionals from librarianship, computer science, text encoding, and related areas, to advance the state of the art in the development of resource description (or metadata) records for networked electronic information objects.

2.8 Resolver

The Entity at which a request for services is targeted.

2.9 DOI (Digital Object Identifier)

A character string used in a System conforming to the rules of, and deposited in the Directory administered by, the IDF.

2.10 Requester

The Entity that requests services pertaining to the Referent.

3.引用標準

ANSI/NISO Z39.88-2004. 與內文相關服務的 OpenURL 框架(The OpenURL Framework for Context-Sensitive Services)

Registry for the OpenURL Framework. OpenURL 框架的登錄

OpenURL Syntax Description, Draft version 0.1. OpenURL 語法描述草案 0.1 版

Dublin Core Community Profile (DCCP) for Simple Dublin Core in KEV.
使用鍵值表示的都柏林核心社群剖繪

3.Normative reference

ANSI/NISO Z39.88-2004. The OpenURL Framework for Context-Sensitive Services

Registry for the OpenURL Framework. <http://www.openurl.info/registry/>

OpenURL Syntax Description, Draft version 0.1.

<http://www.openurl.info/registry/docs/pdf/openurl-01.pdf>

Dublin Core Community Profile (DCCP) for Simple Dublin Core in KEV.

<http://www.openurl.info/registry/docs/pdf/DublinCoreProfile.pdf>

4.情境物件中的個體及描述符

情境物件(ContextObject)包括針對被參考資源之描述，以及該項參考內文中所關聯資源的描述整合。當使用者點擊了某個鏈結，該被傳送的情境物件的表示(Representation)。KEV 格式的 OpenURL 可以只包含單一情境物件。

4.The ContextObject, its Entities and their Descriptors

The description of a referenced resource, and the descriptions of the associated resources that comprise the context of the reference, bundled together are called a ContextObject. It is a Representation of a ContextObject that is transported when a user makes a request by clicking a link. A KEV OpenURL may contain only one ContextObject.

一情境物件最多可以包含六個個體(Entities)。其中一項稱為參考對象(Referent)的個體，傳遞被參考項目的資訊，此為情境物件中必備的個體；其他五個個體，包括參考個體(ReferringEntity)、請求者(Requester)、解析器 (Resolver)、服務型式(ServiceType)及參考者(Referrer)，都持有一些參考項目中的內文資訊，且該等個體皆為選項。

The ContextObject may contain up to six Entities. One of these, the Referent, conveys information about the referenced item. It must always be included in a ContextObject. The other five entities – ReferringEntity, Requester, Resolver, ServiceType and Referrer – hold information about the context of the reference and are optional.

以下應用場景供作說明(與原標準第 1 部第 5 節場景完全相同)：

Jane Doe 是一位加州理工大學的學生，在 Elsevier ScienceDirect®文件集中讀取以下文章：McArthur, James G. et al. 2001. “p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia.” Molecular Therapy. 3(1) 8-13. <doi:10.1006/mthe.2000.0239>

在該篇文章的參考列表中，該生發現了下列參考文章，她想閱讀該篇文章之全文：

Bergelson, J. 1997. “Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5.” *Science*. (275) 1320-1323.

<doi:10.1126/science.275.5304.1320> <pmid:9036860>

The following scenario is used for illustration (this is the same scenario used in Section 5, Part 1, of the Standard):

Jane Doe, a University student at Caltech, reads the following article in the Elsevier ScienceDirect® collection: McArthur, James G. et al. 2001. “p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia.” *Molecular Therapy*. 3(1) 8-13. <doi:10.1006/mthe.2000.0239>

In the reference list of that article she finds a reference to the following article and would like to view its full text:

Bergelson, J. 1997. “Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5.” *Science*. (275) 1320-1323.

<doi:10.1126/science.275.5304.1320> <pmid:9036860>

情境物件中各項個體，以及最多及最少出現次數限制，都在表 4.1 中列出。雖然 OpenURL 框架允許多個解析器(Resolver)以及服務型式(ServiceType)，但目前的 KEV 社群剖繪仍只允許單一的出現次數。

The Entities of a ContextObject and the constraints on their maximum (Max) and minimum (Min) occurrence are given in Table 3.1. Although the OpenURL Framework allows multiple Resolvers and ServiceTypes their maximum is constrained to one for current KEV community profiles.

表4.1 情境物件(ContextObject)的各項個體資訊

個體名稱	定義	最少	最多	範例
參考對象 (Referent)	由已建立之 ContextObject 所論及的個體，意指被參考到的資源。	1	1	由 Bergelson 所著之文章
參考個體 (ReferringEntity)	參考到參考對象的個體	0	1	由 McArthur 所著之文章
請求者 (Requester)	關於參考對象的請求服務	0	1	Jane Doe
服務型式 (ServiceType)	定義請求服務的型式	0	1	Jane 請求取用 Bergelson 所著文章的全文資料
解析器 (Resolver)	請求服務所針對之個體。	0	1	加州理工大學的連結伺服器
參考者 (Referrer)	產生情境物件的個體	0	1	Elsevier's ScienceDirect ®

Table 4.1 ContextObject Entities

Entity	Definition	Min	Max	Example
Referent	The Entity about which the ContextObject was created – a referenced resource	1	1	The article by Bergelson
ReferringEntity	The Entity that references the Referent	0	1	The article by McArthur
Requester	The Entity that requests services pertaining to the Referent	0	1	Jane Doe

ServiceType	The Entity that defines the type of service requested	0	1	Jane requests the full text of the Bergelson article
Resolver	The Entity at which a request for services is targeted	0	1	The Caltech linking server
Referrer	The Entity that generated the ContextObject	0	1	Elsevier's ScienceDirect®

個體的詳細資訊登載在描述符(Descriptor)中，目前有四種型態的描述符，定義於原標準第 1 部份第 6.2 節：

(1) 識別符

範例 1：數位物件識別符([info:doi/10.1126/science.275.5304.1320](https://doi.org/10.1126/science.275.5304.1320))；

範例 2：PubMed 識別符([info:pmid/9036860](https://pubmed.ncbi.nlm.nih.gov/9036860/))；

範例 3：電子郵件地址(<mailto:jane.doe@caltech.edu>)；

範例 4：http URI(<http://links.caltech.edu/menu>)

(2) 以資料值表達的詮釋資料(By-Value Metadata)(範例請見本標準第 6 節)

(3) 以參考值表達的詮釋資料(By-Reference Metadata)(範例請見本標準第 6 節)

(4) 私有資料(Private Data)

KEV 格式中，個體可以由多個識別符描述符(Identifier Descriptor)進行詳細表達。但是仍限制只能擁有一個以資料值表達的詮釋資料、一個以參考值表達的詮釋資料，以及一個私有資料。

Information about an Entity is detailed by a Descriptor. There are four types of Descriptor, defined in Section 6.2, Part 1 of the Standard.

- Identifier. For example: A Digital Object identifier

(info:doi/10.1126/science.275.5304.1320); a PubMed identifier

(info:pmid/9036860); an email address

(mailto:jane.doe@caltech.edu); a http URI

(http://links.caltech.edu/menu)

- By-Value Metadata. (Examples are given in Section 6 below)
- By-Reference Metadata. (Examples are given in Section 6 below)
- Private Data.

In KEV, an Entity may be detailed by multiple Identifier Descriptors. But it may have at most one each of By-Value Metadata, By-Reference Metadata and Private Data Descriptors.

5.個體描述

情境物件的六個個體中，每個體都可經由以下幾種方式說明：使用數個識別符描述符、使用以資料值表達的詮釋資料描述符、使用以參考值表達的詮釋資料描述符，或是私有的資料描述符。對一個個體而言，當情境物件中包含一個以上描述符時，所有描述符必須參考至相同個體。以下指南將針對每個個體做說明。

5.Entity Description

Each of the six Entities of a ContextObject may be detailed by: several Identifier Descriptors; a By-Value Metadata Descriptor; a By-Reference Metadata Descriptor; a Private Data Descriptor. When a ContextObject contains more than one Descriptor for an Entity all the Descriptors must refer to the same Entity. Guidelines are given below for the description of each Entity.

情境物件個體的鍵值定義在登錄的 Z39.88-2004 矩陣中

(<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:ctx>)。對每個個體之 KEV 中可用的鍵值將在後續的段落中說明。

Keys for ContextObject component Entities are defined by the Z39.88-2004

Matrix in the Registry at

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:ctx> . The Keys

available for use in KEV for each Entity are listed in the following subsections.

目前可使用的識別符描述符資料值為登錄中的 SAP1，第 6 節中有相關說明。

The values available for Identifier Descriptors are the SAP1 selection from the Registry, listed in Section 6.

私有資料描述符並沒有定義在 OpenURL 框架標準中。由於私有資料與特定的參考者有關，因此其內容需要參考者與解析器之間有預先的共同認知。實作者應注意一旦使用了私有資料描述符，其整體互運性可能會受到破壞。

Private Data Descriptors are not defined by the OpenURL Framework Standard.

Private data is specific to the providing Referrer, and thus its comprehension requires a prior understanding between a Referrer and a Resolver. Implementers should be aware that the use of Private Data Descriptors could compromise more general interoperability.

以資料值表達之詮釋資料和以參考值表達之詮釋資料描述都基於個體的類似詮釋資料描述，在 6.4 節中會說明針對詮釋資料格式使用的鍵值。兩者之間的

差異，在於以資料值表達的詮釋資料描述將詮釋資料內嵌在情境物件中，而以參考值表達的詮釋資料則將其另行置放在情境物件中所識別的網路位置。除此之外，以資料值表達的詮釋資料，其鍵值會以它們參照的個體為前綴。下列實作指南只說明以資料值表達的詮釋資料部份，但上述說明也可以應用在以參考值表達的詮釋資料上。請注意，個體只能使用單一的 KEV 詮釋資料格式，因此不能混合使用多種詮釋資料格式，例如：同時使用期刊詮釋資料以及簡易都柏林核心集詮釋資料的鍵值是不合標準的。

By-Value Metadata and By-Reference Metadata descriptions are both based on similar metadata descriptions of an Entity using metadata keys from the Metadata Formats described in Section 6.4. The difference is that for a By-Value Metadata description the metadata is contained within the ContextObject, whereas for a By-Reference Metadata description the metadata is held elsewhere at a network location identified in the ContextObject. Also By-Value Metadata keys are prefixed by an indicator of the Entity to which they refer. In the guidelines below only By-Value Metadata is described, but with the above provisos the guidelines also apply to By-Reference Metadata. Note that an Entity may be described by only one KEV Metadata Format, thus it is not possible to mix Metadata Formats, for example using Keys from both 'journal' metadata and Simple Dublin Core metadata is illegal.

5.1 參考對象(Referent)

每情境物件都必須有參考對象，亦即已產生的情境物件所參考的資源。在學術資訊社群中參考對象大都是文件類型的物件，如：書籍或是書的某部分、期刊出版物或其中的某部分，或是一份報告等等。

Every ContextObject must have a Referent, the referenced resource for which the ContextObject is created. Within the scholarly information community the Referent will probably be a document-like object, for instance: a book or part of a book; a journal publication or part of a journal; a report; etc.

表 5.1 中所列出的鍵值可用於描述參考對象。

The Keys listed in Table 5.1 may be used when describing a Referent.

表 5.1 KEV 格式的參考對象鍵值

鍵值	說明
rft_id	參考對象識別符
rft_val_fmt	以資料值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*)
rft_ref_fmt	以參考值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*) [也需要使用 rft_ref]
rft_ref	以參考值表達的詮釋資料位置 [也需要使用 rft_ref_fmt]
rft_dat	私有資料
rft.	詮釋資料鍵值前綴

Table 5.1 KEV Referent Keys

Key	Description
rft_id	Referent Identifier
rft_val_fmt	By-Value Metadata Format (info:ofi/fmt:kev:mtx:*)
rft_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [rft_ref also required]
rft_ref	By-Reference Metadata Location [rft_ref_fmt also required]
rft_dat	Private Data
rft.	Metadata Key Prefix

參考對象可透過識別符描述符加以指定。表 6.4 中列出學術資訊中大部分識別符所使用的命名空間，此係根據不同型態的資源而有不同的參考對象，如：太空物理 Bibcode(Astrophysics Bibcode)、數位物件識別符、ISBN、ISSN、OAI 識別符、PubMed 識別符、SICI 等。表 6.3 所列出的命名空間，適合學術資源使用的大概是美國國家書目號(National Bibliographic Number, NBN)。一參考對象可用多個識別符進行說明，此時所有的識別符都應該是指向相同的資源。範例 6.3 說明使用識別符描述符來指稱參考對象的實例。

A Referent may be specified using Identifier Descriptors. Identifiers from most of the Namespaces listed in Table 6.4 would be suitable for detailing a scholarly information Referent depending on the particular type of the resource: Astrophysics Bibcode; Digital Object Identifier; ISBN; ISSN; OAI identifier; PubMed identifier; SICI. From the Namespace listed in Table 6.3, a National Bibliographic Number would be a suitable Identifier for a scholarly resource. A Referent may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 6.3 shows a Referent detailed by Identifier Descriptors.

參考對象也可以使用詮釋資料描述符來指定。在 6.4.1-4 節所列的詮釋資料格式都可用來描述學術資訊參考對象。此係根據不同的資料型態使用不同的詮釋資料，如書籍、學術論文、期刊、專利等等。若參考對象同時使用詮釋資料和識別符進行說明，則它們都應該指向相同的資源。範例 6.5(期刊文章)以及 6.6(書籍)都說明使用詮釋資料描述符進行參考對象說明之實例。

A Referent may be specified using a Metadata Descriptor. Any of the Metadata Formats listed in Section 6.4.1-4 would be suitable for describing a scholarly information Referent depending on the particular type of the resource: Book; Dissertation; Journal; Patent. If a Referent is described by both metadata and Identifiers, these must refer to the same resource. Examples 6.5 (a journal article) and 6.6 (a book) show a Referent described by a Metadata Descriptor.

5.2 參考個體(ReferringEntity)

參考個體是用以參考參考對象(Referent)的個體，在情境物件中屬於選項。但學術資訊社群中，參考個體可以是引用參考對象的期刊文章，或是存在於摘要與索引資料庫中的記錄。

The ReferringEntity is the Entity that references the Referent. It is optional in the ContextObject. Within the scholarly information community the ReferringEntity could be a journal article that cites the Referent. Or it could be a record within an ‘abstracting and indexing’ database.

表 5.2 中列出可以用來描述參考個體的鍵值。

The Keys listed in Table 4.2 may be used when describing a ReferringEntity.

表5.2 KEV格式的參考個體鍵值

鍵值	說明
rfe_id	參考個體的識別符
rfe_val_fmt	以資料值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*)

rfe_ref_fmt	以參考值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*) [也需要使用 rft_ref]
rfe_ref	以參考值表達的詮釋資料位置 [也需要使用 rft_ref_fmt]
rfe_dat	私有資料
rfe.	詮釋資料鍵值前綴

Table 5.2 KEV ReferringEntity Keys

Key	Description
rfe_id	ReferringEntity Identifier
rfe_val_fmt	By-Value Metadata Format (info:ofi/fmt:kev:mtx:*)
rfe_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [rfe_ref also required]
rfe_ref	By-Reference Metadata Location [rfe_ref_fmt also required]
rfe_dat	Private Data
rfe.	Metadata Key Prefix

參考個體可以透過識別符描述符進行指定。表 6.4 列出大部分命名空間中的識別符適用於描述學術資訊參考個體，正如上述之參考對象。參考個體可用多個識別符進行說明，此時所有的識別符都應該指向相同的資源。範例 11.3.2 說明使用識別符描述符來指稱參考個體的實例。

A ReferringEntity may be specified using Identifier Descriptors. Identifiers from most of the Namespaces listed in Table 6.4 would be suitable for detailing a scholarly information ReferringEntity, as described above for a Referent. A ReferringEntity may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 11.3.2 shows a ReferringEntity detailed by Identifier Descriptors.

參考個體也可以使用詮釋資料描述符來指定。在 6.4.1-4 節所列的詮釋資料格式都可以用來描述學術資訊。此係根據不同的資料型態使用不同的詮釋資料，如書籍、學術論文、期刊、專利等等。如果參考個體同時使用詮釋資料和識別符進行說明，則它們都應該指向相同的資源。範例 6.6(期刊文章)以及 11.8.2(書籍)說明使用詮釋資料描述符進行參考個體說明的實例。

A ReferringEntity may be specified using a Metadata Descriptor. Any of the Metadata Formats listed in Section 6.4.1-4 would be suitable for describing a scholarly information ReferringEntity depending on the particular type of the resource: Book; Dissertation; Journal; Patent. If a ReferringEntity is described by both metadata and Identifiers, these must refer to the same resource. Example 6.6 (a journal article) and 11.8.2 (a book) show a ReferringEntity described by a Metadata Descriptor.

當一參考個體為存在於摘要與索引資料庫中的一筆記錄時，使用記錄識別符會比用詮釋資料進行描述要來得適當，這是因為參考個體的詮釋資料和參考對象會完全相同。範例 11.3.2 以及 11.4.2 分別說明參考個體使用公開或私有資訊服務記錄資料進行說明的實例。某些情況下，參考個體也有可能是網頁，例如研究者可能會引用出版在網頁上的文章。如果參考個體是網頁，通常可用網頁的 URL 網址作為其識別符，如範例 11.6.2 所述。

When a ReferringEntity is a record in an ‘abstracting and indexing’ database it is better to describe it by the record Identifier rather than by metadata, because the metadata for the ReferringEntity will be the same as that for the Referent. Examples 11.3.2 and 11.4.2 show ReferringEntities that are described by

public and private information service record data respectively. In some cases a ReferringEntity may be a Web page. For instance a researcher may cite published articles on a Home page. A ReferringEntity that is a Web page can be described by an Identifier that is the URL of the Web page, as in Example 11.6.2.

5.3 請求者(Requester)

請求者為請求有關於參考對象(Referent)服務的個體，在情境物件中屬於選擇性的個體。但學術資訊社群中，請求者通常是一個使用者端的點擊連結動作，而該連結是指向某個數位圖書館的應用。

The Requester is the Entity that requests services pertaining to the Referent. It is optional in the ContextObject. Within the scholarly information community the Requester is generally a human end-user who clicks a link within a digital library application.

表 5.3 列出可以用來描述請求者的鍵值。KEV 格式的情境物件定義也包含請求者的詮釋資料描述鍵值，但目前登錄中並沒有包含任何使用的詮釋資料格式。

The Keys listed in Table 5.3 may be used when describing a Requester. The KEV ContextObject definition also includes Keys for metadata description of a Requester, but the Registry does not currently include any appropriate Metadata Formats.

表5.3 KEV格式的請求者鍵值

鍵值	說明
req_id	請求者識別符

req_dat	私有資料
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Table 5.3 KEV Requester Keys

Key	Description
req_id	Requester Identifier
req_dat	Private Data

請求者可以透過識別符描述符進行指定。表 6.3 中列出請求者所適用識別符所使用的命名空間，包括 LDAP 以及 mailto。請求者可以用多個識別符進行說明，此時所有的識別符都應該是指向相同的資源。範例 6.2 說明使用識別符描述符來指稱請求者的實例。

A Requester may be specified using Identifier Descriptors. Identifiers from the Namespaces listed in Table 6.3 that would be suitable for detailing a Requester are: LDAP; mailto. A Requester may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 6.2 shows a Requester detailed by an Identifier Descriptor.

部份應用程式會希望傳遞請求者的相關認證資訊，此係用在認證系統上。或是請求者所屬的地點資訊，如機構或是公司等等，或是請求者在某系統中之偏好剖繪的相關資訊。目前這項資訊使用私有資料(Private Data)進行描述，因此需要參考對象與解析器先前有共同的認知。在請求者描述符中並不鼓勵內含認證的詳細資訊，如密碼等等，因為在目前 OpenURL 傳送的安全考量上，內含這樣的資訊可能會造成違反認證系統的使用條款。

Some applications may wish to pass Requester authentication related information. This may be the authentication system used. Or it could be the location information such as the institution or company to which the Requester

belongs. Or it could be an Identifier for the Requester that would indicate their preference profile within some system. At present this information would be described using Private Data and will depend on prior understanding by both Referrer and Resolver. It would be inadvisable to include authentication details such as passwords within a Requester Descriptor. As well as concerns about the security of the OpenURL Transport, including such detailed authentication data would probably contravene the terms and conditions of the authentication system in use.

5.4 服務型式(ServiceType)

服務型式是用來定義請求服務形式的個體，在情境物件中屬於選擇性的個體。但學術資訊社群中，服務型式通常是請求動作，對象可能是文章的全文資訊，或是館際借閱的請求等等。

The ServiceType is the Entity that defines the type of service requested. It is optional in the ContextObject. Within the scholarly information community the ServiceType could be a request for; the full text of an article; the abstract of an article; an inter-library loan request, etc.

表 5.4 中列出可用來描述服務型式的鍵值。KEV 格式的情境物件定義也包含服務型式的識別符描述鍵值，但目前登錄中並沒有包含任何使用的識別符。

The Keys listed in Table 5.4 may be used when describing a ServiceType. The KEV ContextObject definition also includes a Key for an Identifier description of a ServiceType, but the Registry does not currently include any appropriate Identifiers.

表5.4 KEV格式的服務型式鍵值

鍵值	說明
svc_val_fmt	以資料值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*)
svc_ref_fmt	以參考值表達的詮釋資料格式 (info:ofi/fmt:kev:mtx:*) [也需要使用 svc_ref]
svc_ref	以參考值表達的詮釋資料位置 [也需要使用 svc_ref_fmt]
svc_dat	私有資料
svc.	詮釋資料鍵值前綴

Table 5.4 KEV ServiceType Keys

Key	Description
svc_val_fmt	By-Value Metadata Format (info:ofi/fmt:kev:mtx:*)
svc_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [svc_ref also required]
svc_ref	By-Reference Metadata Location [svc_ref_fmt also required]
svc_dat	Private Data
svc.	Metadata Key Prefix

服務型式可以透過詮釋資料描述符進行指定。6.4.5 節中列出描述學術資訊服務型式所適用詮釋資料所使用的命名空間。範例 11.2.4 說明使用詮釋資料描述符來指稱服務型式的實例。

A ServiceType may be specified using a Metadata Descriptor. The Metadata Formats described in Section 6.4.5 would be suitable for describing a scholarly information ServiceType. Example 11.2.4 shows a ServiceType detailed by a Metadata Descriptor.

5.5 解析器(Resolver)

解析器是請求服務所指稱目標的個體，在情境物件中屬於選擇性的個體。它不必和 OpenURL 傳送(OpenURL Transport)中的基礎 URL(base URL)相同，同時也不會取代該項基礎 URL。

The Resolver is the Entity at which a request for services is targeted. It is optional in the ContextObject. This need not be the same Resolver as that specified as the base URL for an OpenURL Transport and does not replace that base URL.

表 5.6 中列出可用來描述解析器的鍵值。KEV 格式的 ContextObject 定義也包含解析器的詮釋資料描述鍵值，但目前登錄中並沒有包含任何使用的詮釋資料格式。

The Keys listed in Table 5.6 may be used when describing a Resolver. The KEV ContextObject definition also includes Keys for metadata description of a Resolver, but the Registry does not currently include any appropriate Metadata Formats.

表5.6 KEV格式的解析器鍵值

鍵值	說明
res_id	解析器識別符
res_dat	私有資料

Table 5.6 KEV Resolver Keys

Key	Description
res_id	Resolver Identifier

res_dat	Private Data
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解析器可以透過識別符描述符進行指定。表 6.3 中列出適合說明解析器的是 HTTP。解析器可以用多個識別符進行說明，此時所有的識別符都應該是指向相同的資源。

A Resolver may be specified using Identifier Descriptors. An Identifier from the Namespaces listed in Table 6.3 that would be suitable for detailing a Resolver is http. A Resolver may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource.

5.6 參考者(Referrer)

參考者是用來產生情境物件的個體，在情境物件中屬於選擇性的個體，但是強烈建議使用此個體。但學術資訊社群中，參考者可以是相關的資訊提供者，如電子期刊服務，或是摘要與索引服務。

The Referrer is the Entity that generated the ContextObject. It is optional in the ContextObject, but its inclusion is strongly encouraged. Within the scholarly information community the Referrer will be an information provider such as an electronic journal application or an ‘abstracting and indexing’ service.

表 5.7 中列出可用來描述參考者的鍵值。KEV 格式的情境物件定義也包含參考者的詮釋資料描述鍵值，但目前登錄中並沒有包含任何使用的詮釋資料格式。

The Keys listed in Table 5.7 may be used when describing a Referrer. The KEV ContextObject definition also includes Keys for metadata description of a Referrer, but the Registry does not currently include any appropriate Metadata Formats.

表5.7 KEV格式的參考者鍵值

鍵值	說明
rfr_id	解析器識別符
rfr_dat	私有資料

Table 5.7 KEV Referrer Keys

Key	Description
res_id	Referrer Identifier
res_dat	Private Data

參考者識別符定義在識別符命名空間中(‘info:ofi/nam:info:sid:’), 它們使用 ‘info:sid/’ 規格, 進行針對資訊資產集合的識別, 目前定義在登錄中 (<http://openurl.info/registry/docs/pdf/info-sid.pdf>)。這樣的集合可以是機構、網站、出版商或是資料庫。在參考者識別符的規格中, 包括 DNS 識別符(網際網路中的網域名稱、子網域、或是主機名稱), 跟著選擇性的名稱, 用來提供該項集合更多的詳細資訊, 如特定的服務或是資料庫。以下為兩個參考者識別符的範例: ‘info:sid/firstsearch.oclc.org:inspec’, ‘info:sid/wiley.com’。

Referrer Identifiers are defined in the source identifier Namespace ‘info:ofi/nam:info:sid:’. They are identified using the ‘info:sid/’ scheme for the identification of collections of information assets defined in the Registry at <http://openurl.info/registry/docs/pdf/info-sid.pdf>. Such a collection could be

an organization, a website, a publisher, or a database. Within this scheme a Referrer Identifier consists of a DNS identifier (Internet domain name, sub-domain or host name) for the Referrer's collection, followed by an optional name providing further details about the nature of the collection, for example a particular service or database. Example Referrer Identifiers are: 'info:sid/firstsearch.oclc.org:inspec'; 'info:sid/wiley.com'.

在此強烈建議將參考者識別符納入情境物件中。特別是情境物件中有參考者特定的私有資料者，參考者代碼更形需要。第 11 節有所有參考者使用識別符描述符之範例。解析器將會使用參考者識別符來避免循環連結的情形，同時也用其來進行使用統計。

It is strongly recommended that genuine Referrer Identifiers are included in ContextObjects. In particular a genuine Referrer Identifier is necessary if Referrer-specific Private Data is included in a ContextObject, in order to define the provenance of that private data. All the examples in Section 11 show Referrers detailed by Identifier Descriptors. Resolvers make use of Referrer Identifiers to avoid circular linking and to compile usage statistics.

請注意：參考者規格自本標準 1.4 版起已經改變取代了先前的 1.3 版本，因此 'ofi/rfr:db' 規格已不再適用

Note that the Referrer scheme changed from in version 1.4 of this document from version 1.3. The 'ofi/rfr:db' scheme is no longer available.

6. 登錄檔的選擇

以下由登錄所選錄出來的 KEV OpenURL 框架元件，將會適當地使用在學術資訊社群中。

6. Registry Selections

The following selection of KEV OpenURL Framework components from the Registry would be appropriate within the scholarly information community.

6.1 情境物件的格式 (ContextObject Format)

情境物件是使用鍵值或資料值 (Key/Encoded-Value, KEV) 格式來進行表達，且以使用“&”符號連結的字串來表示。每筆資料配對都是由標籤 (也就是鍵值) 及關連資料值所組成，以 URL 進行編碼 (URL-encoded)，使用等號“=”來進行區隔。所有 KEV 資料配對都必須透過 URL 進行編碼，以確保情境物件表示是可被傳送的 (‘transport ready’)。KEV 格式定義在原標準第 3 部份，而 URL 編碼方式則在本標準附錄 B.3 進行說明。KEV 格式的登錄識別符 (Registry Identifier) 為 ‘info:ofi/fmt:kev’。

ContextObjects are represented using the Key/Encoded-Value (KEV) Format, as a string of ampersand-delimited pairs. Each pair consists of a label (Key) and an associated Value that is URL-encoded, separated by an equals (‘=’). All values of KEV pairs must be URL-encoded so that the ContextObject Representation is ‘transport ready’. The KEV Format is defined in Part 3 of the Standard. URL-encoding is explained below in Annex B.3. The Registry Identifier of the KEV Format is ‘info:ofi/fmt:kev’.

KEV 情境物件的鍵值定義在 Z39.88-2004 MTX 限制定義 (Z39.88-2004 MTX

Constraint Definition)中，其登錄識別符(Registry Identifier)為
 ‘info:ofi/fmt:kev:mtx’，同時 KEV 情境物件的登錄識別符則為
 ‘info:ofi/fmt:kev:mtx:ctx’。

Keys for a KEV ContextObject are defined by the Z39.88-2004 MTX
 Constraint Definition. The Registry Identifier of the MTX Constraint
 Definition is ‘info:ofi/fmt:kev:mtx’ and the Registry Identifier of the KEV
 ContextObject Format is ‘info:ofi/fmt:kev:mtx:ctx’.

除了定義鍵值來進行針對情境物件中組件個體的描述之外(請見前述第四
 段)，KEV 情境物件也包含情境物件選擇性的管理鍵值。

As well as defining Keys used to describe the component entities of a
 ContextObject (see Section 4 above), the KEV ContextObject also includes
 optional administrative keys for the ContextObject.

表 6.1: KEV 情境物件的管理鍵值

鍵值	描述
ctx_ver	情境物件的版本，固定為： “‘Z39.88-2004’”(Z 必須大寫)
ctx_enc	所使用的字元編碼(請見下文 5.2)
ctx_id	情境物件的識別符
ctx_tim	情境物件的時戳(Timestamp)，是由 ISO8601 中的 W3CDTF 剖繪所定義，精細到秒，格式為 ‘YYYY-MM-DDThh:mm:ssTZD’或是 ‘YYYY-MM-DD’.

Table 6.1 KEV ContextObject Administrative Keys

Key	Description
ctx_ver	Version of the ContextObject. Fixed value: ‘Z39.88-2004’ (‘Z’ must be uppercase)

ctx_enc	Character Encoding used (see Section 5.2 below)
ctx_id	Identifier for the ContextObject
ctx_tim	Timestamp for the ContextObject, a date and time to the seconds level of the W3CDTF profile of ISO 8601, of the form 'YYYY-MM-DDThh:mm:ssTZD' or 'YYYY-MM-DD'

6.2 字元編碼(Character Encoding)

以下所使用到的 IANA(網際網路位址分配機構)字元編碼

(<http://www.iana.org/assignments/character-sets>)將會用在情境物件的 KEV 格式的資料值中。此情境物件會存在於登錄之中，此處也可以查詢更多的字元集。

The following Character Encodings from the IANA character sets

(<http://www.iana.org/assignments/character-sets>) to be used for Values within a KEV ContextObject are included in the initial Registry, where further description of these character sets may be found.

表6.2 KEV格式字元編碼表

編碼方式	登錄識別符
UTF-8 統一碼	info:ofi/enc:UTF-8
ISO Latin 1	info:ofi/enc:ISO-8859-1

Table 6.2 KEV Character Encodings

Encoding	Registry Identifier
UTF-8 Unicode	info:ofi/enc:UTF-8
ISO Latin 1	info:ofi/enc:ISO-8859-1

情境物件所使用的字元編碼方式透過 ctx_enc 鍵值來進行指定。預設的字元

編碼為 UTF-8，因此如果使用 UTF-8 編碼，則 `ctx_enc` 的鍵值可以被忽略。
對以參考值表達的詮釋資料(By-Reference Metadata)來說，預設使用 UTF-8
字元編碼，但仍可以自行宣告使用其他的編碼方式。

The Character Encoding used within a ContextObject is specified using the
`ctx_enc` Key. The default Character Encoding is UTF-8. Thus if UTF-8 is used
the `ctx_enc` Key may be omitted. For By-Reference Metadata UTF-8 Character
Encoding is the default, but it can declare its own encoding.

範例 6.1：字元編碼範例。

ISO Latin 1 字元編碼規格的表達方式為
&ctx_enc=info%3Aofi%2Fenc%3AISO-8859-1

Example 6.1 Character Encoding

Specification of ISO Latin 1 Character Encoding
&ctx_enc=info%3Aofi%2Fenc%3AISO-8859-1

當使用 UTF-8 編碼形成 OpenURL 網址時，最好的方式便是用統一碼正規化
表格 C(Unicode Normalization Form C)。減用統一碼而使用 ASCII 碼的情況
是不被鼓勵的。

When forming an OpenURL encoded using Unicode UTF-8, best practice is to
use Unicode Normalization Form C. The practice of reducing Unicode
characters to ASCII is discouraged.

未來也可能使用其他的編碼方案(只要該項編碼有登錄即可)，但是這些編碼
將不會涵括在學術資訊剖繪 SAP1 中。

Other encoding schemes may be used in the future, provided they are registered, but they will not be included in the scholarly information profile SAPI.

6.3 命名空間(Namespace)

以下段落將說明幾個學術資訊社群所會適用的識別符命名空間(Identifier Namespace)。這些命名空間在登錄中的識別符為‘info:ofi/nam:’。但是對一個識別符描述符來說，只需用 URI 即可。舉例來說，‘mailto’的登錄識別符為‘info:ofi/nam:mailto:’，但是在 6.2 節中舉例的識別符描述符可能是‘mailto:jane.doe@caltech.edu’。

The following sub-sections list the Identifier Namespaces appropriate for the scholarly information community. Namespaces have Registry Identifiers within the ‘info:ofi/nam:’ Namespace. But for an Identifier Descriptor just the URI is used. For example, the Registry Identifier for ‘mailto’ is ‘info:ofi/nam:mailto:’ but an Identifier Descriptor would be ‘mailto:jane.doe@caltech.edu’ as shown in Example 6.2.

請注意：此段文件內容在 1.1 與 1.2 版之間的變動相當大，所有的命名空間目前都遵循 URI 的規則，同時也揚棄之前使用的‘uri:’前綴。先前的 ORI 命名空間目前已成為‘info:’命名空間，私有的 XRI 命名空間則不再使用，而依個特定指稱對象的識別符則應該編入私有資料描述符(Private Data Descriptor)中。

Note that this section changed significantly from versions 1.1 to 1.2 of this document. All Namespaces now follow URI schemes and the ‘uri:’ prefix has been dropped. The previous ORI Namespaces are now URI ‘info:’ Namespaces.

The private XRI Namespace is no longer available and a Referrer-specific identifier should be encoded within a Private Data Descriptor.

6.3.1.命名空間(Namespace)

表 6.3 列出除了‘info:’以外適合學術資訊所使用的命名空間，這些命名空間的識別符都可以用來當作識別符描述符，同時也可以用來為以參考值表達的詮釋資料指定網路地點。範例 6.2 說明使用 mailto 識別符來形成的請求者資訊。

Table 6.3 lists the Namespaces suitable for scholarly information from URI schemes other than the ‘info:’ scheme. Identifiers from these Namespaces may be used as Identifier Descriptors. They may also be used to specify network locations for By-Reference Metadata descriptions. The following example, 6.2, shows a Requester detailed by a mailto Identifier.

範例 6.2：請求者的 URI 命名空間識別符描述符。

&req_id=mailto%3Ajane.doe%40caltech.edu

Example 5.2 Requester URI Namespace Identifier Descriptor

&req_id=mailto%3Ajane.doe%40caltech.edu

表 6.3 URI 命名空間

URI 命名空間	登錄識別符	URI
FTP	info:ofi/nam:ftp:	ftp:
HTTP	info:ofi/nam:http:	http:
LDAP	info:ofi/nam:ldap:	ldap:
mailto	info:ofi/nam:mailto:	mailto:
ISBN	info:ofi/nam:urn:ISBN:	urn:ISBN:

ISSN	info:ofi/nam:urn:ISSN:	urn:ISSN
National Bibliographic Number (NBN)	info:ofi/nam:urn:NBN	urn:NBN:

Table 6.3 URI Namespaces

URI Namespace	Registry Identifier	URI
FTP	info:ofi/nam:ftp:	ftp:
HTTP	info:ofi/nam:http:	http:
LDAP	info:ofi/nam:ldap:	ldap:
mailto	info:ofi/nam:mailto:	mailto:
ISBN	info:ofi/nam:urn:ISBN:	urn:ISBN:
ISSN	info:ofi/nam:urn:ISSN:	urn:ISSN
National Bibliographic Number (NBN)	info:ofi/nam:urn:NBN	urn:NBN:

6.3.2 ‘info’命名空間(‘info’ Namespaces)

表 6.4 列出 ‘info’URI 規範中適合學術資訊所使用的命名空間。以下範例

6.3 說明同時使用 PubMed 識別符以及數位物件識別符的參考對象。

Table 6.4 lists the Namespaces suitable for scholarly information from the ‘info’ URI scheme. Identifiers from these Namespaces may be used as Identifier Descriptors. The following example, 6.3, shows a Referent detailed by both a PubMed Identifier and a Digital Object Identifier.

範例 6.3：參考對象的 ‘info’命名空間識別符描述符。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_id=info:pmid/9036860

&rft_id=info:doi/10.1126/science.275.5304.1320

(URL 編碼過後)

&rft_id=info%3Apmid%2F9036860&rft_id=info%3Adoi%2F10.

1126%2Fscience.275.5304.1320

Example 6.3 : Referent 'info' Namespace Identifier Descriptors

(Not URL-encoded and with line breaks for readability)

&rft_id=info:pmid/9036860

&rft_id=info:doi/10.1126/science.275.5304.1320

(URL-encoded)

&rft_id=info%3Apmid%2F9036860&rft_id=info%3Adoi%2F

10.1126%2Fscience.275.5304.1320

表6.4 'info'命名空間

命名空間	登錄識別符	URI
Astrophysics Bibcode	info:ofi/nam:info:bibcode:	info:bibcode/
Digital Object Identifier	info:ofi/nam:info:doi:	info:doi/
CNRI Handle	info:ofi/nam:info:hdl:	info:hdl/
LCCN	Info:ofi/nam:info:lccn:	info:lccn/
Open Archives Initiative (OAI)	info:ofi/nam:info:oai:	info:oai/
OCLC WorldCat	info:ofi/nam:info:oclcnum:	info:oclcnum/
PubMed	info:ofi/nam:info:pmid:	info:pmid/
SICI	info:ofi/nam:info:sici:	info:sici/
Source Identifier	info:ofi/nam:info:sid:	info:sid/

Table 6.4 'info' Namespaces

Namespace	Registry Identifier	URI
Astrophysics Bibcode	info:ofi/nam:info:bibcode:	info:bibcode/
Digital Object Identifier	info:ofi/nam:info:doi:	info:doi/
CNRI Handle	info:ofi/nam:info:hdl:	info:hdl/
LCCN	Info:ofi/nam:info:lccn:	info:lccn/
Open Archives Initiative (OAI)	info:ofi/nam:info:oai:	info:oai/
OCLC WorldCat	info:ofi/nam:info:oclcnum:	info:oclcnum/

PubMed	info:ofi/nam:info:pmid:	info:pmid/
SICI	info:ofi/nam:info:sici:	info:sici/
Source Identifier	info:ofi/nam:info:sid:	info:sid/

6.4 詮釋資料格式 (Metadata Formats)

情境物件中的個體都可以使用詮釋資料進行描述。這些詮釋資料描述可以直接包含在情境物件本身，也就是以資料值表達的詮釋資料。或是將詮釋資料描述置於別處，此為以參考值表達的詮釋資料，其中詮釋資料的網路位址將會包含在情境物件中。當個體使用 KEV 格式的資料值表達詮釋資料進行描述時，詮釋資料鍵值必須包含指稱該項個體的前綴，且此詮釋資料鍵值前綴不能用在 KEV 格式的參考值表達詮釋資料中。

Entities within a ContextObject may be described by metadata. These metadata descriptions may be contained within the ContextObject itself, known as By-Value Metadata. Alternatively the metadata descriptions may be held elsewhere, in which case, known as By-Reference Metadata, the network location of the metadata is contained in the ContextObject. When an Entity is described by KEV By-Value Metadata the metadata keys must have a metadata prefix indicating the Entity. This metadata key prefix should not be used for KEV By-Reference Metadata.

表 6.5 列出最初定義的 KEV 詮釋資料格式。這些詮釋資料格式提供學術資訊社群描述資源的標準方式。以下章節將會有更詳細說明。

The initial KEV Metadata Formats are listed in Table 6.5. These Metadata Formats provide a means to describe resources within the scholarly

information community. They are described in more detail in the following sub-sections.

表6.5 鍵值/編碼資料的詮釋資料格式

詮釋資料格式	登陸識別符
書籍以及書內個體	info:ofi/fmt:kev:mtx:book
學術論文	info:ofi/fmt:kev:mtx:dissertation
期刊以及期刊個體	info:ofi/fmt:kev:mtx:journal
專利	info:ofi/fmt:kev:mtx:patent
學術服務型式	info:ofi/fmt:kev:mtx:sch_svc

Table 6.5 Key/Encoded-Value Metadata Formats

Metadata Format	Registry Identifier
Book and Book component	info:ofi/fmt:kev:mtx:book
Dissertation	info:ofi/fmt:kev:mtx:dissertation
Journal and Journal component	info:ofi/fmt:kev:mtx:journal
Patent	info:ofi/fmt:kev:mtx:patent
Scholarly Service Type	info:ofi/fmt:kev:mtx:sch_svc

6.4.1 期刊詮釋資料(Journal Metadata)

表達期刊出版物的詮釋資料格式在登錄中的 Z39.88-2004 矩陣可以找到 (<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:journal>)。此矩陣包含各詮釋資料項目的說明，詳細資訊本文不一一詳述，僅列出部份提供說明。該矩陣也定義了詮釋資料鍵值允許出現的次數。

The Metadata Format to represent a journal publication is defined by a Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:journal>. This Matrix includes a description for the use of each of the metadata items.

That information is not reproduced here but guidelines for a few of the

metadata items are given below. The Matrix defines the permissible occurrences of the metadata keys.

當參考對象(或是參考個體)以期刊論文詮釋資料格式中的資料值表達詮釋資料時：

(a)在情境物件中的鍵值 rft_val_fmt (或 rfe_val_fmt)其值為：

‘info:ofi/fmt:kev:mtx:journal’。

(b)詮釋資料鍵值必須以‘rft.’ (或 ‘rfe.’)為前綴。

When a Referent (or ReferringEntity) is described with By-Value Metadata using the journal Metadata Format:

- The rft_val_fmt (or rfe_val_fmt) Key in the ContextObject has the value: ‘info:ofi/fmt:kev:mtx:journal’
- The metadata keys must be prefixed with ‘rft.’ (or ‘rfe.’)

當參考對象(或參考個體)用期刊論文詮釋資料格式中的參考值表達詮釋資料時：

(a)情境物件中的鍵值 rft_val_fmt (或 rfe_val_fmt)的值為：

‘info:ofi/fmt:kev:mtx:journal’。

(b)詮釋資料的存放地點透過 KEV 格式之期刊論文詮釋資料格式中的

rft_ref (或 rfe_ref)予以指稱。

(c)詮釋資料的鍵值不可有前綴。

(d)預設的字元編碼為 UTF-8，但也可以自行宣告自己的編碼。

When a Referent (or ReferringEntity) is described with By-Reference Metadata using the journal Metadata Format:

- The rft_ref_fmt (or rfe_ref_fmt) Key in the ContextObject has the value: 'info:ofi/fmt:kev:mtx:journal'
- The metadata at the location specified by the rft_ref (or rfe_ref) Key is in KEV journal Metadata Format
- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

(1) 類型

期刊詮釋資料格式是通用的格式，用來描述期刊或是長期出版物中的各種層次，它也用在描述會議論文集，發表在期刊論文，或是長期出版物中的預印本。此存在於期刊出版型態中的資源特定類型便可以使用詮釋資料中的類型(genre)鍵值。此類型詮釋資料鍵值的可能資料值列於表 6.6，而特定的類型則應該配合使用合適層次的詮釋資料。舉例來說，描述“期別”類型的資源就應該擁有合適卷期/部份/期別(volume / part / issue)的詮釋資料。

(1) Genre

The journal Metadata Format is a general purpose Format to describe all levels within a journal or serial publication. It may also be used to describe a conference proceedings or paper where these are published in a journal, or a serial publication preprint. The specific genre of the resource within the journal publication type may be indicated by the genre metadata key. The possible values for the genre metadata key are shown in Table 6.6. It would be expected that the granularity of metadata provided would be consistent

with the specified genre. For example a resource described with a genre 'issue' would have appropriate volume / part / issue metadata.

表6.6 期刊論文詮釋資料類型值

類型值 (Genre Value)	描述
期刊論文 (journal)	多期別的刊物
期別 (issue)	期刊中的某期個體
文章 (article)	刊載於期刊中的文件
會議 (conference)	期刊中所記錄的會議
論文集 (proceeding)	在期刊中的單一會議出版物
預印本 (preprint)	刊載於期刊前的論文或是報告出版品
未知值 (unknown)	表達未知類型

Table 6.6 Journal Metadata Genre Values

Genre Value	Description
journal	Serial publication issued in several parts
issue	One instance of a serial publication
Article	Document published in a journal
conference	Record of a conference published in a journal
proceeding	Single conference presentation published in a journal
preprint	Single paper or report published prior to its publication in a journal
unknown	Unknown genre

(2) 作者

期刊詮釋資料格式提供了數個鍵值來詳細描述文章或是論文的作者。為了進行引用的配對，第一作者的姓名尤其重要。第一作者應該使用 `aulast` 鍵值來說明作者姓氏，同時另有一或多個 `aufirst`、`auinit`、`aunit1`、`auinitm` 鍵值來說明名字的其他部份。如果姓名的後綴很重要，則也有一個 `ausuffix` 鍵值可供使用。如果文件的主要建立者是機構的話，則可使用

aucorp 鍵值來進行說明。除此之外，還有通用的 au 鍵值，此鍵值用在當作者姓名無法適當區隔時，用來記錄作者的全名。但是如果可能的話，還是鼓勵使用 aulast 來記錄除了名字以外的其他部份。au 鍵值可以用在記錄其他共同作者之用，該項鍵值可重複。

(2) Author

The Journal Metadata Format provides several keys to detail the author of an article or paper. For the purpose of matching citations it is generally the first author's name that is significant. The first author should be specified using aulast to indicate their family name and one or more of aufirst, auinit, auinit1, auinitm for their given name or initials. An ausuffix key may also be used if a name suffix is significant. If the main creator of a document is an organization the aucorp key should be used instead. A general au key is also provided. This may be used to contain the full name of an author where splitting the author's name is not possible. But it is recommended that aulast, with separate family name or initials, be used to specify the first author rather than au whenever possible. The au key is repeatable so may be used to list the co-authors of an article.

下例說明論文詮釋資料格式的實際使用範例。範例 6.5 說明使用以資料值表達詮釋資料的參考對象，範例 6.6 足說明使用以參考值表達詮釋資料的參考個體。

The following examples show the use of the Journal Metadata Format.

Example 6.5 shows By-Value Metadata for a Referent. Example 6.6 shows By-Reference Metadata for a ReferringEntity.

範例 6.5：以資料值表達詮釋資料的參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article  
  
&rft.atitle=Isolation of a common receptor for coxsackie B  
  
&rft.jtitle=Science &rft.aulast=Bergelson &rft.auinit=J  
  
&rft.date=1997 &rft.volume=275 &rft.spage=1320  
  
&rft.epage=1323
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&  
  
rft.genre=article&rf  
  
t.atitle=Isolation+of+a+common+receptor+for+coxsackie+B&rf  
  
t.jtitle=Science&rft .aulast=Bergelson&rft.auinit=J&rft.date=19  
  
97&rft.volume=275&rft.spage=1320&rf t.epage=1323
```

Example 6.5: By-Value Journal Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article  
  
&rft.atitle=Isolation of a common receptor for coxsackie B  
  
&rft.jtitle=Science &rft.aulast=Bergelson &rft.auinit=J  
  
&rft.date=1997 &rft.volume=275 &rft.spage=1320  
  
&rft.epage=1323
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajourna
```

```
l&rft.genre=article&rft.
t.atitle=Isolation+of+a+common+receptor+for+coxsackie+B
&rft.jtitle=Science&rft .aulast=Bergelson&rft.auinit=J&rft.d
ate=1997&rft.volume=275&rft.spape=1320&rft.eape=1323
```

範例 6.6 以參考值表達詮釋資料的參考個體。

<p>情境物件中 (因閱讀需要，僅使用換行方式，不用URL編碼)</p> <pre>&rfe_ref_fmt=info:ofi/fmt:kev:mtx:journal &rfe_ref=http://www.example.org/temp/1234.txt</pre>
<p>http://www.example.org/temp/1234.txt中 (因閱讀需要，僅使用換行方式，不用URL編碼)</p> <pre>&genre=article &atitle=p27-p16 Chimera: A Superior Antiproliferative &jtitle=Molecular Theory &aulast=McArthur &aufirst=James &date=2001 &volume=3 &issue=1 &spage=8 &epage=13</pre>
<p>情境物件中 (URL編碼過後的KEV格式)</p> <pre>&rfe_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rfe_ref=http%3A% 2F%2Fwww.example.org%2Ftemp%2F1234.txt</pre>
<p>http://www.example.org/temp/1234.txt中 (URL編碼過後的KEV格式)</p> <pre>&genre=article&atitle=p27- p16+Chimera%3A+A+superior+Antiproliferative&jtitle=Molecular+Theory&aulast =McArthur&aufirst=James&date=2001&volume=3&issue=1&spage=8&epage=13</pre>

Example 6.6 By-Reference Metadata for a ReferringEntity

<p>Within the ContextObject: (Not URL-encoded and with line breaks for readability)</p> <pre>&rfe_ref_fmt=info:ofi/fmt:kev:mtx:journal &rfe_ref=http://www.example.org/temp/1234.txt</pre>
<p>At http://www.example.org/temp/1234.txt : (Not URL-encoded and with line breaks for readability)</p> <pre>&genre=article &atitle=p27-p16 Chimera: A Superior Antiproliferative &jtitle=Molecular Theory &aulast=McArthur &aufirst=James &date=2001 &volume=3 &issue=1 &spage=8 &epage=13</pre>
<p>Within the ContextObject: (URL-encoded KEV Format)</p> <pre>&rfe_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rfe_ref=http%3A% 2F%2Fwww.example.org%2Ftemp%2F1234.txt</pre>
<p>At http://www.example.org/temp/1234.txt : (URL-encoded KEV Format)</p> <pre>&genre=article&atitle=p27- p16+Chimera%3A+A+superior+Antiproliferative&jtitle=Molecular+Theory&aulast =McArthur&aufirst=James&date=2001&volume=3&issue=1&spage=8&epage=13</pre>

6.4.2 書籍及一般文件的詮釋資料(Book and General Document Metadata)

書籍，書中個體、報告、或是一般文件，都可用此種詮釋資料格式表達。

此格式在登錄中的 Z39.88-2004 矩陣可以找到

(<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:book>)。該矩陣包含各詮釋資料項目的說明，詳細資訊本文不一一詳述，僅列出部份提供說明。該矩陣也定義了詮釋資料鍵值允許出現的次數。

The Metadata Format to represent a book, book component, report or general document is defined by a Z39.88-2004 Matrix in the Registry at: <http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:book>. This Matrix includes a description for the use of each of the metadata items. That information is not reproduced here but guidelines for a few of the metadata items are given below. The Matrix defines the permissible occurrences of the metadata keys.

當參考對象(或是參考個體)以書籍詮釋資料格式中的資料值表達詮釋資料時：

(a)情境物件中之鍵值 rft_val_fmt (或 rfe_val_fmt)的值為：

‘info:ofi/fmt:kev:mtx:book’。

(b)詮釋資料鍵值必須以‘rft.’ (或 ‘rfe.’)為前綴。

When a Referent (or ReferringEntity) is described with By-Value Metadata using the book Metadata Format:

- The rft_val_fmt (or rfe_val_fmt) Key in the ContextObject has the value: ‘info:ofi/fmt:kev:mtx:book’
- The metadata keys must be prefixed with ‘rft.’ (or ‘rfe.’)

當參考對象(或是參考個體)以書籍詮釋資料格式中的資料值表達詮釋資料時：

(a)在情境物件中的鍵值 `rft_val_fmt` (或 `rfe_val_fmt`)的值是：

`'info:ofi/fmt:kev:mtx:book'`。

(b)詮釋資料的存放地點是透過 `KEV` 格式的書籍論文詮釋資料格式中的

`rft_ref` (或 `rfe_ref`)予以指稱。

(c)詮釋資料的鍵值不可以有前綴。

(d)預設的字元編碼為 `UTF-8`，但是也可以自行宣告自己的編碼。

When a Referent (or ReferringEntity) is described with By-Reference

Metadata using the book Metadata Format:

- The `rft_ref_fmt` (or `rfe_ref_fmt`) Key in the ContextObject has the value:
`'info:ofi/fmt:kev:mtx:book'`.
- The metadata at the location specified by the `rft_ref` (or `rfe_ref`) Key is in `KEV book`
- Metadata Format: The metadata keys must not be prefixed
- Character Encoding default is `UTF-8`, but it can declare its own encoding

(1) 類型

書籍詮釋資料格式是通用的格式，用來描述書籍、書本個體、以及類似的文件，同時它也用在描述會議論文集、論文、或是報告。書籍詮釋資料描述一般文件中的書目資訊，如已知的作者和題名，但是該項資源特別的型態在此則無法確定。這種詮釋資料也可以用在描述非文字型態的項目，如 6.4.7 節所述。此存在於期刊出版型態中的資源特定類型便可以使用詮釋資料中的類型(`genre`)鍵值。此類型詮釋資料鍵值的可能資料值列於表 6.7。

(1) Genre

The book Metadata Format is a general purpose Format to describe books, book components, and similar documents. It may be used to describe a conference proceedings or paper, or a report. Book metadata may also be used to describe a general document where some bibliographic information, such as author and title, are known, but the specific type of the resource cannot be determined. It could possibly be used to describe non-text items as described in Section 6.4.7. The specific genre of the resource within the book metadata type may be indicated by the genre metadata key. The possible values for the genre metadata key are shown in Table 6.7.

表6.7 書籍詮釋資料類型值

類型值 (Genre Value)	描述
書籍 (book)	書籍
書本個體 (bookitem)	書中的段落
會議 (conference)	會議的記錄
論文集 (proceeding)	單一的會議資料
報告 (report)	已出版的報告
文件 (document)	一般文件
未知值 (unknown)	表達未知類型

Table 6.7 Book Metadata Genre Values

Genre Value	Description
book	Book
bookitem	Section of a book
conference	Record of a conference
proceeding	Single conference presentation
report	Published report
document	General document
unknown	Unknown genre

(2) 作者

在此作者資訊的詳細描述與 6.4.1 節中的期刊詮釋資料格式建議相同。

(2) Author

The recommendations for detailing authors are the same as those for the Journal Metadata Format described in Section 6.4.1 above.

以下的範例 6.7 說明使用以資料值表達詮釋資料的參考對象。

The following example, 6.7, shows By-Value Book Metadata for a Referent.

範例 6.7：以資料值表達詮釋資料的參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book  
&rft.btitle=Professional XML Meta Data &rft.aulast=Dodds  
&rft.afirst=David &rft.date=2001 &rft.isbn=1861004516
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rft  
t.genre=book&rft.bti  
tle=Professional+XML+Meta+Data&rft.aulast=Dodds&rft.afirs  
t=David&rft.date=2 001&rft.isbn=1861004516
```

Example 6.7: By-Value Book Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book  
&rft.btitle=Professional XML Meta Data &rft.aulast=Dodds  
&rft.afirst=David &rft.date=2001 &rft.isbn=1861004516
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook  
&rft.genre=book&rft.b  
title=Professional+XML+Meta+Data&rft.aulast=Dodds&rft.af  
irst=David&rft.date=2001&rft.isbn=1861004516
```

6.4.3 學術論文詮釋資料(Dissertation Metadata)

用來表達學術論文所使用之詮釋資料格式。此格式在登錄中的

Z39.88-2004 矩陣可以找到

(<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:dissertation>)

。該矩陣包含各詮釋資料項目的說明，詳細資訊本文不一一詳述，僅列出部份提供說明。該矩陣也定義了詮釋資料鍵值允許出現的次數。

The Metadata Format to represent a dissertation is defined by a

Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:dissertation>.

This Matrix includes a description for the use of each of the metadata items, and defines the permissible occurrences of the metadata keys.

當參考對象(或是參考個體)以學術論文詮釋資料格式中的資料值表達詮釋資料時：

(a) 情境物件中的鍵值 rft_val_fmt (或 rfe_val_fmt) 的值為：

‘info:ofi/fmt:kev:mtx:dissertation’。

(b) 詮釋資料鍵值必須以 ‘rft.’ (或 ‘rfe.’) 為前綴。

When a Referent (or ReferringEntity) is described with By-Value Metadata using the dissertation Metadata Format:

- The rft_val_fmt (or rfe_val_fmt) Key in the ContextObject has the value: ‘info:ofi/fmt:kev:mtx:dissertation’
- The metadata keys must be prefixed with ‘rft.’ (or ‘rfe.’)

當參考對象(或是參考個體)以學術論文詮釋資料格式中的資料值表達詮釋資料時：

(a) 情境物件中的鍵值 rft_val_fmt (或 rfe_val_fmt) 的值為：

‘info:ofi/fmt:kev:mtx:dissertation’。

(b) 詮釋資料的存放地點是透過 KEV 格式的學術論文詮釋資料格式中的 rft_ref (或 rfe_ref) 予以指稱。

(c) 詮釋資料的鍵值不可以有前綴。

(d) 預設的字元編碼為 UTF-8，但是也可以自行宣告自己的編碼。

When a Referent (or ReferringEntity) is described with By-Reference Metadata using the dissertation Metadata Format:

- The rft_ref_fmt (or rfe_ref_fmt) Key in the ContextObject has the value:
‘info:ofi/fmt:kev:mtx:dissertation’
- The metadata at the location specified by the rft_ref (or rfe_ref) Key is in KEV dissertation Metadata Format

- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

(1) 作者

此作者資訊的詳細描述與 6.4.1 節中的期刊詮釋資料格式建議相同。

(1) Author

The recommendations for detailing authors are the same as those for the Journal Metadata Format described in Section 6.4.1 above.

範例 6.8 說明以資料值表達詮釋資料的參考對象。

The following example, 5.8, shows By-Value Dissertation Metadata for a Referent.

範例 6.8：以資料值表達詮釋資料的參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation &rft.title=The
effects of the rare earth elements yttrium, gadolinium and
dysprosium &rft.aulast=Apps &rft.afirst=Peter &rft.auinitm=J
&rft.date=2001 &rft.co=United Kingdom &rft.inst=University
of Manchester &rft.degree=PhD
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adissertat
ion&rft.title=The
```

```

effects+of+the+rare+earth+elements+yttrium%2C+gadolinium+
and+dysprosium

&rft.aulast=Apps&rft.afirst=Peter&rft.auinitm=J&rft.date=2001

&rft.co=United+Kin

gdom&rft.inst=University+of+Manchester&rft.degree=PhD

```

Example 6.8: By-Value Dissertation Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```

&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation

&rft.title=The effects of the rare earth elements yttrium,
gadolinium and dysprosium &rft.aulast=Apps

&rft.afirst=Peter &rft.auinitm=J &rft.date=2001

&rft.co=United Kingdom &rft.inst=University of Manchester

&rft.degree=PhD

```

(URL-encoded KEV Format)

```

&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adisser
tation&rft.title=The
effects+of+the+rare+earth+elements+yttrium%2C+gadolinu
m+and+dysprosium

&rft.aulast=Apps&rft.afirst=Peter&rft.auinitm=J&rft.date=2
001&rft.co=United+Kin

gdom&rft.inst=University+of+Manchester&rft.degree=PhD

```

6.4.4 專利詮釋資料(Patent Metadata)

用來表達專利資料，可以使用此詮釋資料格式。此格式可於登錄中的

Z39.88-2004 矩陣找到

(<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:patent>)。該矩陣包含各詮釋資料項目的說明，詳細資訊本文不一一詳述，僅列出部份提供說明。該矩陣也定義詮釋資料鍵值允許出現的次數。

The Metadata Format to represent a patent is defined by a Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:patent>. That Matrix includes a description for the use of each of the metadata items, and defines the permissible occurrences of the metadata keys.

.

當參考對象(或是參考個體)以專利詮釋資料格式中的資料值表達詮釋資料時：

(a) 在情境物件中的鍵值 `rft_val_fmt` (或 `rfe_val_fmt`)的值是：

`'info:ofi/fmt:kev:mtx:patent'`。

(b) 詮釋資料鍵值必須以 `'rft.'` (或 `'rfe.'`)為前綴。

When a Referent (or ReferringEntity) is described with By-Value Metadata using the patent Metadata Format:

- The `rft_val_fmt` (or `rfe_val_fmt`) Key in the ContextObject has the value: `'info:ofi/fmt:kev:mtx:patent'`
- The metadata keys must be prefixed with `'rft.'` (or `'rfe.'`)

當參考對象(或是參考個體)使用專利詮釋資料格式中的參考值表達詮釋資料時：

(a) 在情境物件中的鍵值 `rft_val_fmt` (或 `rfe_val_fmt`)的值是：

`'info:ofi/fmt:kev:mtx:dissertation'`。

- (b) 詮釋資料的存放地點是透過 KEV 格式的專利詮釋資料格式中的 `rft_ref` (或 `rfe_ref`) 予以指稱。
- (c) 詮釋資料的鍵值不可以有前綴。
- (d) 預設的字元編碼為 UTF-8, 但是也可以自行宣告自己的編碼。

When a Referent (or ReferringEntity) is described with By-Reference

Metadata using the patent Metadata Format:

- The `rft_ref_fmt` (or `rfe_ref_fmt`) Key in the ContextObject has the value:
`'info:ofi/fmt:kev:mtx:patent'`
- The metadata at the location specified by the `rft_ref` (or `rfe_ref`) Key is in KEV patent
- Metadata Format: The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

6.4.5 學術服務型式的詮釋資料(Scholarly Service Type Metadata)

用來表達學術服務型式資料, 可使用這樣的詮釋資料格式。此格式在登錄中的 Z39.88-2004 矩陣可以找到

(http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:sch_svc)。該矩陣包含各詮釋資料項目的說明, 詳細資訊本文不一一詳述, 僅列出部份提供說明。每個詮釋資料項目的可能資料值均為 'yes' 或是 'no'。該矩陣也定義了詮釋資料鍵值允許出現的次數。

The Metadata Format to represent a scholarly service type is defined by a

Z39.88-2004 Matrix in the Registry at:

http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:sch_svc. This

Matrix includes a description for the use of each of the metadata items.

That information is not reproduced here but the metadata items are listed

below. Possible values for each

metadata item are 'yes' or 'no'. The Matrix defines the permissible

occurrences of the metadata keys.

OpenURL 框架不會預先假設解析器的行為，對於情境物件中存在的任一
種服務型式詮釋資料的鍵值，框架對於解析器將提供的解析服務並不予
保證。請求的服務型式應視為針對解析器的提示(hint)，請注意：當請求
全文讀取時，不會覆蓋任何訂閱的限制。

Because the OpenURL Framework does not prescribe Resolver behavior
there is no guarantee that a Resolver will provide the requested service
when one of these ServiceType Metadata Keys is included in a
ContextObject. Requested ServiceTypes should be regarded as a hint to the
Resolver. In particular it should be noted that requesting 'fulltext' will not
override any subscription restrictions.

當服務型式是以資料值表達詮釋資料時：

(a) 情境物件中的鍵值 `svc_val_fmt` 的值為：

`'info:ofi/fmt:kev:mtx:sch_svc'`。

(b) 詮釋資料鍵值必須以 `'svc.'` 為前綴。

When a ServiceType is described with By-Value Metadata using the

scholarly service type Metadata Format:

- The `svc_val_fmt` Key in the ContextObject has the value:
`'info:ofi/fmt:kev:mtx:sch_svc'`
- The metadata keys must be prefixed with `'svc.'`

當服務型式以參考值表達詮釋資料時：

(a) 情境物件中的鍵值 `svc_ref_fmt` 的值為：

`'info:ofi/fmt:kev:mtx:sch_svc'`。

(b) 詮釋資料的存放地點是透過 KEV 格式的服務型式詮釋資料格式中的 `svc_ref` 予以指稱。

(c) 詮釋資料的鍵值不可以有前綴。

(d) 預設的字元編碼為 UTF-8，但是也可以自行宣告自己的編碼。

When a ServiceType is described with By-Reference Metadata using the scholarly service type Metadata Format:

- The `svc_ref_fmt` Key in the ContextObject has the value:
`'info:ofi/fmt:kev:mtx:sch_svc'`
- The metadata at the location specified by the `svc_ref` Key is in KEV scholarly service type Metadata Format
- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

表6.8 學術服務型式鍵值

鍵值 (Key)	描述
摘要 (abstract)	參考對象的摘要資訊
引用 (citation)	參考對象的書目引用資料

全文 (fulltext)	參考對象的全文資料
擁有權 (holdings)	參考對象的擁有權資訊
館際借閱 (ill)	參考對象的館際借閱請求
其他形式 (any)	泛指其他服務型式

Table 6.8 Scholarly Service Type Keys

Key	Description
abstract	Abstract of the Referent
citation	Bibliographic citation of the Referent
fulltext	Full text of the Referent
holdings	Holdings information related to the Referent
ill	Inter-library Loan request for the Referent
any	Any service type

以下範例說明使用學術服務型式詮釋資料之實例。

The following example shows the use of the scholarly service type Metadata Format.

範例 6.9：以資料值表達的學術詮釋資料。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc &svc.fulltext=yes

(URL 編碼過後的 KEV 格式)

&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_svc

&svc.fulltext=yes

Example 6.9: By-Value Scholarly Metadata for a ServiceType

(Not URL-encoded and with line breaks for readability)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc

&svc.fulltext=yes

(URL-encoded KEV Format)

```
&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_
svc&svc.fulltext=yes
```

備考：學術服務型式詮釋資料格式取代先前版本(1.3 以及更早版本)的服務型式識別符，舊版本的資訊已不再適用。

Note the scholarly service type Metadata Format supersedes the service type identifiers detailed in previous versions (1.3 and below) of this document, which are no longer available.

6.4.6 都柏林核心集詮釋資料格式(Dublin Core Metadata Format)

目前針對都柏林核心集詮釋資料的實驗性格式正在開發之中，且在登錄中的識別符為‘info:ofi/fmt:kev:mtx:dc’。它提供了都柏林核心集 (<http://www.dublincore.org>)中 15 個元素的詮釋資料鍵值，請見表 6.9。

An experimental metadata format for Simple Dublin Core is currently under development. Its eventual Identifier in the Registry will be ‘info:ofi/fmt:kev:mtx:dc’. It provides metadata Keys for the 15 elements of Simple Dublin Core (<http://www.dublincore.org>) listed in Table 6.9.

表6.9 都柏林核心集詮釋資料鍵值

鍵值(Key)	描述
題名(title)	資源名稱
作者(creator)	資源內容的原始建立者
主題(subject)	資源內容的主題
描述(description)	資源內容的描述
出版者(publisher)	出版該項資源的對象

貢獻者 (contributor)	資源內容的貢獻者
日期(date)	資源生命週期中的事件日期
型式(type)	資源內容的天然類型
格式(format)	資源的個體或是數位格式
識別符(identifier)	參考到該項資源的唯一參考
來源(source)	產生或提供該項資源的對象
語文(language)	資源內容的使用語文
關連(relation)	相關資源的參考資訊
涵蓋範圍 (coverage)	資源內容的使用範圍
權利(rights)	該項資源的擁有權說明

Table 6.9 Simple Dublin Core Metadata Keys

Key	Description
title	Name of the resource
creator	Primary creator of the content of the resource
subject	Topic of the content of the resource
description	Description of the content of the resource
publisher	Entity making resource available
contributor	Contributor to content of resource
date	Date of an event in lifecycle of resource
type	Nature or genre of content of resource
format	Physical or digital manifestation of resource
identifier	Unambiguous reference to resource in a given context
source	Resource from which this resource was derived
language	Language of intellectual content of resource
relation	Reference to a related resource
coverage	Extent or scope of content of resource
rights	Rights held in or over resource

以下範例說明使用都柏林核心集詮釋資料之實例(參考對象與服務型式)。

The following example shows a use of the simple Dublin Core Metadata

Format for a Referent and a ServiceType.

範例 6.10：以資料值表達的都柏林核心集詮釋資料。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=jstor business  
&rft.subject=business &svc_val_fmt=info:ofi/fmt:kev:mtx:dc  
&svc.format=text/xml
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adc&rft.  
title=jstor+business  
&rft.subject=business&svc_val_fmt=info%3Aofi%2Ffmt%3A  
kev%3Amtx%3Adc& svc.format=text%2Fxml
```

Example 6.10: By-Value Simple Dublin Core Metadata

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=jstor  
business &rft.subject=business  
&svc_val_fmt=info:ofi/fmt:kev:mtx:dc  
&svc.format=text/xml
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adc&r  
ft.title=jstor+business  
&rft.subject=business&svc_val_fmt=info%3Aofi%2Ffmt%3  
Akev%3Amtx%3Adc& svc.format=text%2Fxml
```

都柏林核心集詮釋資料格式可指稱個體的主題資訊，但特定個體值中的詮釋資料鍵值必須來自於同一種詮釋資料格式。

This Simple Dublin Core Metadata Format opens the possibility of indicating the ‘subject’ of an entity. But note that all metadata keys for a particular entity must be from the same Metadata Format.

6.4.7 非文字以及其他詮釋資料格式(Non-text and Other Metadata Formats)

上述段落所描述的各個詮釋資料格式只存在於登錄之中，或正由 NISO Committee AX 進行開發。但是對於特定應用領域應有特殊的詮釋資料規範。

At present the Metadata Formats described in the above subsections are the only ones in the Registry or under development by NISO Committee AX. But there will be requirements within particular application domains for metadata specific to them.

6.4.7.1 非文字詮釋資料(Non-text Metadata)

長期以來非文字性學術資訊項目(如影像、地圖、聲音等)的詮釋資料格式不斷地進行討論與開發。當這些開發完成之後，也會把相關成果加入登錄之中。而這類的項目可用兩種方式來建立其情境物件。

There has been some discussion and early development of Metadata Formats for non-text scholarly information items, such as images, maps and sound. When development of these is complete they will be added to the experimental Registry. In the meantime there are two options for

creating ContextObjects describing such items.

部份 OpenURL 的實作者針對非文字項目建立了 0.1 版的 OpenURL , 其中使用如 'title' 及作者資訊 , 但卻省略 'genre' 資訊。本選項可以在先前版本升級到 1.0 版時使用 , 最佳的做法就是使用 'book' 詮釋資料來建立針對參考對象的情境物件 , 先前的詮釋資料值如 'title' 以及作者的詳細資料便可以適當轉入 , 至於 'genre' 部份則可以設定成 “ 未知 ” (unknown) 或予以省略。

Some OpenURL implementers have created version 0.1 OpenURLs for non-text items by including the information they can such as 'title' and author information but omitting 'genre'. This option can be taken forward when upgrading to OpenURL version 1.0. Best practice will be to create a ContextObject describing the Referent using 'book' metadata. As previously metadata values such as 'title' and author details may be included. The 'genre' can either be set to 'unknown' or omitted.

範例 6.11 : 以資料值表達“書籍”詮釋資料的影像。

(因閱讀需要 , 僅使用換行方式 , 不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.title=My  
Photograph &rft.aulast=Apps &rft.aufirst=Ann  
&rft.genre=unknown
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook  
&rft.title=My+Photograph
```

ph&rft.aulast=Apps&rft.aufirst=Ann&rft.genre=unknown

Example 6.11: By-Value ‘Book’ Metadata for an Image

(Not URL-encoded and with line breaks for readability)

&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.title=My
Photograph &rft.aulast=Apps &rft.aufirst=Ann
&rft.genre=unknown

(URL-encoded KEV Format)

&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ab
ook&rft.title=My+Photogra
ph&rft.aulast=Apps&rft.aufirst=Ann&rft.genre=unknow
n

另一種方式是使用都柏林核心集詮釋資料格式。這種做法允許針對
‘title’以及‘creator’進行描述，同時它也提供了“型式”(type)以及
‘format’鍵值。最佳的使用建議為：針對‘type’使用 DCMI 型式辭典
(<http://dublincore.org/documents/dcmi-type-vocabulary/>)，及針對
‘format’使用 MIME 型式。

An alternative approach is to use the Simple Dublin Core Metadata
Format. This will allow the
inclusion of details such as ‘title’ and ‘creator’. It also provides keys
for genre (‘type’) and ‘format’. Suggested best practice would be to take
values from the DCMI Type Vocabulary
(<http://dublincore.org/documents/dcmi-type-vocabulary/>) for ‘type’ and

to use MIME types for ‘format’.

範例 6.12：以資料值表達都柏林核心集詮釋資料的影像。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=My  
Photograph &rft.creator=Ann Apps &rft.type=Image  
&rft.format=application/gif
```

(URL 編碼過後的 KEV 格式)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adc&  
rft.title=My+Photograph  
&rft.creator=Ann+Apps&rft.type=Image&rft.format=applic  
ation%2Fgif
```

Example 6.12: By-Value Simple Dublin Core Metadata for an Image

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=My  
Photograph &rft.creator=Ann Apps &rft.type=Image  
&rft.format=application/gif
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ad  
c&rft.title=My+Photograph  
&rft.creator=Ann+Apps&rft.type=Image&rft.format=app  
lication%2Fgif
```

6.4.7.2 其他詮釋資料(Other Metadata)

其他的 KEV 詮釋資料格式可定義用於區域型應用或是封閉的社群中。這種新的詮釋資料格式絕對不能使用‘ctx’作為開頭。

Other KEV Metadata Formats may be defined for use in local applications and possibly for eventual use within communities. The name of a new Metadata Format must not begin with the letters ‘ctx’.

至於定義 KEV 詮釋資料格式部份，就必須仿照附錄 B 中的定義，建立針對標準的 Z39.88-2004 矩陣。要建立註冊的詮釋資料格式如下列四個主要步驟，但目前在登錄代理者尚未指定以及定義登錄程序之前，只有第一與第三步驟可以實現。

To define a KEV Metadata Format it is necessary to define a Z39.88-2004 Matrix as defined in Annex B of the Standard. Four steps are involved in producing a registered Metadata Format. At present, until the Registration Agency has been appointed and the registration process defined, only the first and third steps are possible.

- (a) 在區域的(自己的)網站公佈定義新詮釋資料格式的 Z39.88-2004 矩陣，其識別符將會是其 URL 網址。如果此詮釋資料格式使用範圍僅限於區域型應用或是封閉的社群中，這將會是唯一需要的步驟。
- (b) 接著，將此新的詮釋資料格式加入實驗性的前置登錄點 (Pre-Registry)。這項動作將可以使你的新格式變成潛在可使用的

狀態。接著登錄代理者將會為其指定識別符。

- (c) 當此詮釋資料格式已被確定適合進行註冊之後，它就會被移至登錄之中，但仍會被標記為實驗使用階段('trial use')。接著需要註冊授權者的認證動作，這需要 NISO Committee AX 的審查。
- (d) 一旦註冊授權者認證完成，此詮釋資料格式就會被改為正式使用('official')的狀態，然後會被指定識別號('info:ofi/fmt:kev:mtx:***')，但此識別號可以與先在登錄代理者指定之前由 Committee 決定。

- Publish the Z39.88-2004 Matrix defining the new Metadata Format on a local website. Its identifier will be its URL. If this Metadata Format is for use within a local application or closed community, this is the only action required.
- Request that the new Metadata Format be added to the experimental Pre-Registry. This will make it potentially generally available. It will be assigned an identifier by the Registration Agency.
- When it is decided that the Metadata Format is suitable for registration it will be moved to the Registry, but flagged as being for 'trial use'. This will eventually require approval from the Registration Authority, but for the initial Registry it requires vetting by NISO Committee AX.
- Following further approval by the Registration Authority it will be moved to 'official' status in the Registry. A final 'info:ofi/fmt:kev:mtx:***' identifier will be assigned. (Again this can be decided by the Committee before the appointment of a

6.5 傳送(Transports)

KEV 格式的情境物件可以透過網路進行傳送，傳送方式(Transport)定義在表 6.10 中。更詳細有關 KEV 格式的 OpenURL 資訊則在第 7 節進行說明。

KEV ContextObjects may be transported over the network using the Transports listed in Table

6.10. Further details of transporting KEV OpenURLs are given in Section 7.

表6.10 SAPI傳送方式

傳送方式	登錄識別符
透過 HTTP 使用以參考值表達的 OpenURL	info:ofi/tsp:http:openurl-by-ref
透過 HTTP 使用以資料值表達的 OpenURL	info:ofi/tsp:http:openurl-by-val
透過 HTTP 使用以參數字串表達的 OpenURL	info:ofi/tsp:http:openurl-inline

Table 6.10 SAPI Transports

Transport	Registry Identifier
By-Reference OpenURL over HTTP	info:ofi/tsp:http:openurl-by-ref
By-Value OpenURL over HTTP	info:ofi/tsp:http:openurl-by-val
Inline OpenURL over HTTP	info:ofi/tsp:http:openurl-inline

6.6 剖繪(Profiles)

因應特殊領域應用而自登錄中選用的核心元件集合稱之為社群剖繪 (Community Profile)，社群剖繪的定義也涵括在登錄之中。目前最常見針對學術資訊社群提供 KEV 格式的情境物件的剖繪稱為 San Antonio Community Profile Level 1，它提供了針對學術資訊社群中 KEV 格式的情境物件支援。除此之外，也另有都柏林核心集的剖繪正在開發之中。

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile. The definitions of Community Profiles are also included in the Registry. The San Antonio Community Profile Level 1, provides KEV ContextObject support for the scholarly information community. There is also a Simple Dublin Core Community Profile under development.

San Antonio Profile Level 1 (SAP1)在本標準的附錄 C 中有其定義，同時在登錄中也以‘info:ofi/pro:sap1’識別符提供使用。SAP1 在登錄中的定義在 <http://www.openurl.info/registry/docs/info:ofi/pro:sap1>。有許多在登錄中的 SAP1 核心元件在本文中先前的段落已經提到過。

The San Antonio Profile Level 1 (SAP1) is defined in Annex C of the Standard, and identified in the Registry as ‘info:ofi/pro:sap1’. SAP1 is defined in the Registry at <http://www.openurl.info/registry/docs/info:ofi/pro:sap1> . Many of the core components of SAP1 from the Registry are listed in the above sections of this document.

社群剖繪 (Community Profile) 的主要目的是針對解析器或是 OpenURL 來源 (如參考者) 提供可供量測的校標 (benchmark)。因此它們是針對解析器或是參考者進行公佈或是銷售時用來支援其相容性或是需求相符之用。在情境物件中並沒有針對剖繪的相符資訊做任何描述，此外，特定的剖繪也不需要針對其情境物件涵括入任何有關需求說明的元件。剖繪的相符資訊應該在登錄的定義部份進行確認，但是原標準中也沒有自動的方式可詢問解析器所支援的剖繪類型，OpenURL 框架本身並非設計成協定來使用。

The main purpose of Community Profiles is to provide a ‘benchmark’ against which a Resolver or OpenURL source (ie. Referrer) can be measured. Thus they are for supporting compliance claims or requiring conformance when advertising or purchasing Resolvers and Referrers. There is no indication within a ContextObject of any Profile conformance. There is no requirement that a particular ContextObject contains only components from a particular Profile unless its creator wishes to claim conformance to that Profile. Claims of conformance to a Profile could be verified against its definition in the Registry, but there is no means provided by the Standard of automatically interrogating a Resolver to determine which Profiles it supports, the OpenURL Framework not being a protocol.

登錄中的詮釋資料格式與剖繪為相互獨立，剖繪可以選用特定的詮釋資料格式，故一種詮釋資料格式可應用在多個不同的剖繪中。詮釋資料格式才是真正能在特定個體情境物件中指定使用者，剖繪則不然。

Metadata Formats exist in the Registry independent of Profiles. Profiles subscribe to a selection of Metadata Formats. Thus one Metadata Format can be included in several profiles. Metadata Formats are indicated in actual ContextObjects for the particular Entities described by them, whereas Profiles are not.

7. OpenURL 傳送

KEV 格式的情境物件可以用 OpenURL 中的參數字串、資料值，或是參考值進行網路傳送。這三種傳送方式都是以 HTTP 協定為基礎，同時情境物件也可以透過 HTTP 的 GET 或 POST 方法進行遞送。OpenURL 傳送定義在原標準中的

第 5 部份，其中也包含針對這三種傳送方式使用 GET 與 POST 方法的範例。

7.OpenURL Transport

KEV ContextObjects are transported over the network using OpenURL as Inline, By-Value, or By-Reference. In all three cases this Transport uses the HTTP protocol. The ContextObjects may be conveyed using either GET or POST.

OpenURL Transport is defined in Part 5 of the Standard where there are several examples of using GET and POST and of the three methods

OpenURL 包括單一基本 URL，指網際網路上的主機、其使用的通訊埠(port)，及 HTTP 服務的路徑(OpenURL 解析器)，以上組成 OpenURL 傳送之目標。

An OpenURL includes a single base URL that specifies the internet host, port and path of an HTTP-based service, the OpenURL Resolver, that is the target of the Transport.

請注意：若使用 HTTPS(HTTP 的安全性兄弟版本)，必須針對它額外支援，但並不需要與目前的剖繪(如 SAP1)相符。

Note that HTTPS, the secure sibling of HTTP, could be supported additionally, but is not required for conformance to current Profiles such as SAP1.

(1) OpenURL 使用 GET 和 POST 方法

表 7.1 列出在 OpenURL 中所有使用的鍵值。至於使用其他方法的部份則在後面的段落進行說明(7.1~7.3 節)。

(1) OpenURL GET and POST

Table 7.1 lists Keys that are used in all OpenURLs. Further Keys used by the different methods are listed in the following subsections (7.1-7.3).

表 7.1 KEV OpenURL 鍵值

鍵 值	最低使 用次數	最高使 用次數	說 明
url_ver	1	1	OpenURL 版本。為一固定值： Z39.88-2004 (‘Z’ 必須大寫)
url_tim	0	1	OpenURL 建立時的時戳

Table 7.1 KEV OpenURL Keys

Key	Min	Max	Description
url_ver	1	1	OpenURL version. Fixed value: Z39.88-2004 (‘Z’ must be uppercase)
url_tim	0	1	OpenURL creation timestamp

(2) OpenURL GET 方法

在 HTTP GET 模式中，OpenURL 的鍵值/資料值配對將會以‘&’符號進行串接，而形成 HTTP GET 的查訊字串。此查詢字串會加入 OpenURL 解析器的基礎 URL 之後，中間則以‘?’區隔。而參數字串中的 OpenURL 資料值必須進行 URL 編碼。範例 11.1.6 說明使用 HTTP GET 方法的 OpenURL 參數字串，請注意：最好的實作方式並非在‘?’之後直接使用‘&’符號，也就是第一個 URL 鍵值之前不應該有‘&’。

(2) OpenURL GET

In HTTP GET mode the OpenURL Key/Value pairs, including the further Keys listed below, are concatenated by ampersand (‘&’) to form the query string of an HTTP GET request. This query string is appended to the base

URL of the target OpenURL Resolver, separated from it by a question mark ('?'). The query string including the values of OpenURL Keys must be URL-encoded. Example 11.1.6 shows the query string of an OpenURL using HTTP GET. Note that best practice is not to include a leading ampersand ('&') following the question mark ('?'), that is there should be no ampersand ('&') preceding the first OpenURL Key.

(3) OpenURL POST 方法

在 HTTP POST 模式中，如前述組成的參數字串，是透過 HTTP POST 方法的訊息本體(message body)進行承載。這種 HTTP 查詢的內容型式(Content-Type)必須訂為‘application/x-www-form-urlencoded’。因此訊息本體也必須進行 URL 編碼。範例 11.3.8 說明使用 HTTP POST 方法的 OpenURL。請注意：在 POST 訊息本體中的空白字元都會在處理之前被移除掉。

(3) OpenURL POST

In HTTP POST mode the query string, assembled as specified in the previous paragraph, is carried in the message body of the HTTP POST. The Content-Type of the HTTP request must be ‘application/x-www-form-urlencoded’. Thus the message body must be URL-encoded. Example 11.3.8 shows an OpenURL using HTTP POST. It should be noted that any whitespace within a POST body, possibly added by a transport agent for compatibility with legacy networks, has to be removed before processing.

7.1 以參數字串表達的 OpenURL(Inline OpenURL)

在以參數字串表達的 OpenURL 中，情境物件以一參數字串的形式進行傳送。表 7.2 說明以參數字串表達的 OpenURL 中其他的鍵值。

In an Inline OpenURL the ContextObject is transported as part of the query string. Table 7.2 shows the additional Keys for an Inline OpenURL.

表7.2 KEV格式的以參數字串表達OpenURL的鍵值

鍵 值	最低使 用 次 數	最高使 用 次 數	說 明
url_ctx_fmt	0	1	表示情境物件的格式，為一固定 值：info:ofi/fmt:kev:mtx:ctx

Table 7.2 KEV Inline OpenURL Keys

Key	Min	Max	Description
url_ctx_fmt	0	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx

對於用參數字串表達之 OpenURL 來說，其參數字串是透過‘&’分隔字元來將 OpenURL 鍵值/資料值配對進行組合(第一個參數之前沒有‘&’)。因為參數字串必須經過 URL 編碼，因此 OpenURL 鍵值/資料值配對必須經過 URL 編碼。同時在情境物件中的鍵值/資料值配對早已是經過 URL 編碼的狀態。範例 11.1.6、11.4.7、11.7.7 及 11.8.7 皆為以參數字串表達的 OpenURL 之實例。

For an Inline OpenURL the query string is assembled by concatenating using an ampersand (‘&’) separator, the OpenURL Key/Value pairs of the OpenURL and the ContextObject (but with no leading ‘&’). Because the query string must be URL-encoded, the OpenURL Key/Value pairs must be URL-encoded. The Key/Encoded-Value pairs of the ContextObject are already URL-encoded.

Examples 11.1.6, 11.4.7, 11.7.7 and 11.8.7 show Inline OpenURLs.

7.2 以資料值表達的 OpenURL(By-Value OpenURL)

對於以資料值表達的 OpenURL 來說，情境物件本身是以查詢字串中的鍵值資料進行傳送。表 7.3 說明以資料值表達的 OpenURL 中其他的鍵值。

In a By-Value OpenURL the ContextObject is transported as the Value of a Key in the query string. Table 7.3 shows the additional Keys for a By-Value OpenURL.

表7.3 KEV格式的以資料值表達OpenURL的鍵值

鍵 值	最低使 用 次 數	最高使 用 次 數	說 明
url_ctx_fmt	1	1	表示情境物件的格式，為一固定 值：info:ofi/fmt:kev:mtx:ctx
url_ctx_val	1	1	情境物件本身。

Table 7.3 KEV By-Value OpenURL Keys

Key	Min	Max	Description
url_ctx_fmt	1	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx
url_ctx_val	1	1	Representation of the ContextObject

以資料值表達的 OpenURL 中，情境物件本身就是 **url_ctx_val** 的資料值(第一個參數之前沒有‘&’)。若有其他鍵值/資料值同時出現在 OpenURL 中時，資料值都必須經過 URL 編碼。此會導致 OpenURL 中的情境物件經歷兩次 URL 編碼。範例 11.3.8 以及 11.6.8 說明以資料值表達的 OpenURL 之實例。

In a By-Value OpenURL the ContextObject is the Value of the url_ctx_val Key (with no leading '&'). Along with the other Key/Value pairs in the OpenURL, this Value must be URL-encoded. This will result in a double URL-encoding of the ContextObject within the OpenURL. Examples 11.3.8 and 11.6.8 show By-Value OpenURLs.

7.3 以參考值表達的 OpenURL(By-Reference OpenURL)

對於以參考值表達的 OpenURL 來說，情境物件的網路位置(並非情境物件本身)是以參數字串中的鍵值資料進行傳送。表 7.4 說明以參考值表達的 OpenURL 中其他的鍵值。

In a By-Reference OpenURL the network location of a ContextObject, rather than the actual Representation of the ContextObject, is transported as the Value of a Key in the query string. Table 7.4 shows the additional Keys for a By-Reference OpenURL.

表7.4 KEV格式的以參考值表達OpenURL的鍵值

鍵 值	最低使 用次數	最高使 用次數	說 明
url_ctx_fmt	1	1	表示情境物件的格式，為一固定值： info:ofi/fmt:kev:mtx:ctx
url_ctx_ref	1	1	情境物件的網路位置。

Table 7.4 KEV By-Reference OpenURL Keys

Key	Min	Max	Description
-----	-----	-----	-------------

url_ctx_fmt	1	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx
url_ctx_ref	1	1	Network location of the ContextObject

以參考值表達的 OpenURL 中，情境物件的網路位置定義在 url_ctx_ref 的資料值中。若有其他鍵值/資料值同時出現在 OpenURL 中，資料值都必須經過 URL 編碼。由於參考到的 KEV 格式情境物件本身已經是 URL 編碼過的狀態(之前並不包含'&'字元)。範例 11.2.8/9 以及 11.5.6/7 說明以資料值表達的 OpenURL 的實例。請注意在 KEV 格式中，以資料值表達的文件，其中可能包含經傳送代理者加入任何需要與傳統網路環境相容的空白字元，將會被移除。

In a By-Reference OpenURL the ContextObject is at the network location defined by the Value of the url_ctx_ref Key. Along with the other Key/Value pairs in the OpenURL, this Value must be URL-encoded. The referenced KEV ContextObject will by definition be URL-encoded (and should not have a leading '&'). Examples 11.2.8/9 and 11.5.6/7 show By-Reference OpenURLs. It should be noted that any whitespace within a KEV By-Reference document, possibly added by a transport agent for compatibility with legacy networks, has to be removed before processing.

8. OpenURL 參考者的指導方針

OpenURL 參考者(或稱 OpenURL 來源)即資訊提供者，這類角色通常會在其應用網頁中加入 OpenURL 來源連結之情形，包括電子論文應用程式，摘要與索引服務及圖書館線上公用目錄(OPAC)。

8.Guidelines for OpenURL Referrers

OpenURL Referrers (aka OpenURL Sources) are information providers who include OpenURL source links within the Web pages of their applications. They include electronic journal applications, ‘abstract and indexing’ services, and library OPACs.

OpenURL 參考者通常會被要求在 5.6 節中所述之情境物件中提供真實的參考者識別符，此係提升 OpenURL 之互通性，使得解譯區域性的識別符變得可能。亦要求解析器加入使用統計功能，以及避免循環連結(circular links)之情形。加入上述來源資訊是為表達 OpenURL 本身之品質，通常在含有參考者特定的私有資料時，需要真實的參考者識別符，用以說明私有資料的來源訊息。

OpenURL Referrers are strongly encouraged to provide a genuine Referrer Identifier within the ContextObject as specified in Section 5.6. This will assist general OpenURL interoperability enabling the interpretation of local Identifiers, as well as Resolver functionality such the provision of usage statistics, and the prevention of circular links. Inclusion of this provenance within an OpenURL is an indication of its quality. A genuine Referrer Identifier is necessary where a ContextObject includes Referrer-specific Private Data, in order to define the provenance of that private data.

OpenURL 參考者通常也被鼓勵在情境物件中儘可能提供更多的資訊。雖然並沒有針對參考者訂定最少需要提供的相關資訊數量(因為所有的項目都是選擇性提供的)，但是通常需針對特定的動作或服務提供足夠的資料。

OpenURL Referrers are encouraged to supply as much information within the

ContextObject as they have available. There is no minimum recommended information set that Referrers should supply, all items being optional, but common sense indicates that sufficient data should be included to produce the required action.

OpenURL 框架標準並沒有規範解析器之行為，故針對解析器對 OpenURL 之處理並無應採取何種動作的保證。特別是參考者通常會在 OpenURL 中遇到一個特別的服務型式時，仰賴解析器提供相關服務，此種特別的服務型式應視為對解析器的暗示(請見 6.4.5 節)。本標準不鼓勵於情境物件中使用私有資料，此會減低其互通性，參考者與解析器之間需先有共同認知。

Because the OpenURL Framework Standard does not prescribe Resolver behavior, there is no guarantee that Resolvers that process the OpenURLs will take action on all of this information. In particular, Referrers cannot rely on Resolvers providing the requested service when a particular ServiceType is included in an OpenURL. Requested ServiceTypes should be regarded as hints to the Resolver (see section 6.4.5). The use of Private Data within a ContextObject is discouraged because it reduces interoperability, requiring a prior understanding between a Referrer and Resolver.

所有 KEV 格式的 openURL 都必須經過 URL 編碼，規則說明請參見第 7 節。
URL 編碼之定義請參考附錄 B.3。

All KEV OpenURLs must be URL-encoded according to the rules given in Section 7 and the URL-encoding definition in Annex B.3.

OpenURL 參考者在實作上需注意從 OpenURL 0.1 版升級到 1.0 版時可能會發生的相關問題。針對 OpenURL 提供過渡性的混合格式建議請參考附錄 A.2。

Implementers of OpenURL Referrers should be aware of the problems associated with upgrading to OpenURL version 1.0 from OpenURL version 0.1. A recommendation on supplying ‘interim’ hybrid OpenURLs is given in Annex A.2.

9. OpenURL 解析器的指導方針

OpenURL 解析器是以 HTTP 為主的網際網路服務，其目的在於當使用者端啟動了一 OpenURL 來源連結時，提供將請求轉為服務的功能。通常解析器會透過 OpenURL 中的情境物件提供使用者端參考對象的服務集合，這些服務也會將使用者的所在地點以及相關權限進行適當處理。典型的 OpenURL 解析器會擁有記錄其訂閱、擁有之內容，以及偏好資訊的相關知識庫。

9. Guidelines for OpenURL Resolvers

An OpenURL Resolver is an HTTP-based Internet service that is the target of a request for services when an end-user activates an OpenURL source link.

Typically the Resolver will provide to the end-user a set of services that pertain to the Referent within the ContextObject of the OpenURL. These services will be appropriate for the end-user taking into account the user’s location and privileges. Typically OpenURL Resolvers include knowledge bases that record subscription, holdings and preference information for their organization.

剖繪的相容需要所有定義元件的支援(請見 6.6 節)。如果要宣稱與 San Antonio Level 1 Profile 相容，OpenURL 解析器必須要支援在第 6 節中所列的登錄選擇，

這些在標準中的附錄 C.5 有其定義。無論如何，OpenURL 框架標準都不會去規範解析器的行為，它也不是協定。因此解析器並不需要如預期地採用這些選擇。與 SAP1 相容的解析器應能夠解析所有 SAP1 的識別符命名空間及詮釋資料格式，同時也要能夠對無法解析的部份有適當的因應。

Conformance to Profiles requires support for all their defined components (see section 6.6). To claim conformance to the San Antonio Level 1 Profile, OpenURL Resolvers should support all the selections from the Registry listed in Section 6, as defined in Annex C.5 of the Standard. However, the OpenURL Framework Standard does not prescribe Resolver behavior, and it is not a protocol. Thus there is no requirement, beyond general expectation, for the actions that a Resolver should take on any of these selections. A SAP1 compliant Resolver should resolve all of the SAP1 Identifier Namespaces and Metadata Formats that it is capable of and handle gracefully the ones it cannot resolve.

通常解析器要能夠適當的處理外來的鍵值(請見附錄 B.2)，在過渡階段中參考者的實作部份可能會由 OpenURL 0.1 版升級到 1.0 版，此時解析器可能會接到兩種版本的資料，抑或是兩者的混合格式(請見附錄 A.2)。雖然原標準並不要求解析器的行為，但是共識上解析器應該持續接受 0.1 版的 OpenURL。

It is expected that Resolvers will deal gracefully with foreign keys (see Annex B.2). During an interim phase when implementers of Referrers are upgrading to OpenURL version 1.0 from OpenURL version 0.1, Resolvers should be aware that they may receive both forms of OpenURL as well as some hybrid ones (see Annex A.2). Although the Standard makes no requirements on Resolver behavior, it would seem reasonable that Resolvers should continue to accept version 0.1

OpenURLs for the time being.

由於 OpenURL 框架並不規範解析器的行為，故當 OpenURL 解析成一個以上的項目時，並無規範任何必要的動作，此時解析器可以傳回列表的項目，或是不傳回任何東西，此係根據不同解析器之選擇。

Because the OpenURL Framework does not prescribe Resolver behavior, there is no required action when a received OpenURL results in more than one item. A Resolver may return a list of items, or it may return nothing, dependent on the choice of the particular Resolver.

OpenURL 解析器在實作上應遵循附錄 B.4 的 URL 編碼指導方針及附錄 B.5 的參數字串解析規則。同時建議注意附錄 C 所提及的安全性考量以及先期注意事項，以及附錄 B.1 中針對 URL 長度的考量。如果部份解析器的運作包括將 OpenURL 導向其他的解析器或是目的地，則必須要遵循附錄 B.3 中的 URL 編碼，在 OpenURL 中忠實傳送所有的鍵值/資料值配對，不改變情境物件中所承載的任何項目。

Implementers of OpenURL Resolvers should follow the guidelines in Annex B.4 for URL-decoding and Annex B.5 for query string parsing. They are advised to be aware of the security considerations and precautions given in Annex C, and considerations on the length of URLs in Annex B.1. If part of a Resolver's operation involves redirecting OpenURLs to another OpenURL Resolver or target, it should follow the guidelines in Annex B.3 for URL-encoding, and should pass on all the Key/Value pairs in the OpenURL and its payload ContextObject without making any changes to them.

10.OpenURL‘link-to’解析器的指導方針

部份 OpenURL 解析器直接提供相容的‘link-to’語法，用來存取自身的內容，這些解析器並不針對參考者提供額外的服務，除了 Web 連結以及在正常服務中的 OpenURL 來源連結之外。

10.Guidelines for OpenURL ‘link-to’ Resolvers

Some OpenURL Resolvers just provide an OpenURL compliant ‘link-to’ syntax as an access point to their content. They do not provide further services related to the Referent, except for any Web links and OpenURL source links they may provide as part of their usual service.

這一類的解析器可能只實作出 OpenURL 的部份功能，只提供那些對應到自己應用以及資料的相關服務。因此這些解析器應該為了相容性公開它們所支援以及登記的功能。目前這類解析器可以宣稱其符合 SAP1 的部份功能。

It is probable that such Resolvers will implement only part of the functionality implied in an OpenURL. They will provide a service where the OpenURL maps onto their application and data. Thus it would be expected that they publish the OpenURL functionality supported and the expected result of OpenURL requests. In the future there may be an OpenURL ‘link-to’ Profile registered suitable for such Resolvers to indicate conformance. At present they could claim to be compliant with their published subset of SAP1.

11.使用範例

以下範例說明 OpenURL 的使用場合，這些範例分別說明學術資訊社群中使用以參數傳遞，使用資料值表達，以及使用參數值表達的鍵值/編碼資料格式的 OpenURL。這些範例對於 OpenURL 傳送中使用哪種方式並沒有絕對的選擇標準，這些範例只是要表達傳送的編碼方式，使用場合和傳送本身沒有絕對的關連。此外，除了範例 11.3 以外的其他例子中，只表示出 OpenURL 的參數字串部份，此部份必須使用‘?’區隔字元來和基礎 URL 連接，進而形成可運作的 OpenURL。

11.Example Scenarios

Following are some example scenarios where OpenURLs could be used. The examples show the use of Inline, By-Value and By-Reference KEV OpenURLs within the scholarly information community. The choice of OpenURL Transport used in these examples is arbitrary. It is used to illustrate the coding of the Transports and does not indicate any relationship between scenario and choice of Transport. In all the examples, except 11.3, the OpenURLs show only the query string. This would be appended to a base URL with a ‘?’ separator (and no leading ‘&’) to create an actionable OpenURL.

11.1 以參數字串表達的 OpenURL，參考自電子期刊服務的期刊文章

一篇在 D-Lib 雜誌中的期刊文章(ISSN 1082-9873)：

Caplan, Priscilla and Arms, William Y. 1999. “Reference Linking for Journal Articles.” D-Lib Magazine. 5(7/8).

<<http://www.dlib.org/dlib/july99/caplan/07caplan.html>>

<doi:10.1045/july99-caplan>

被引用在下面的期刊文章中：

Van de Sompel, Herbert and Beit-Arie, Oren. 2001. “Open Linking in the

Scholarly Information Environment Using the OpenURL Framework.”

D-Lib Magazine. 7(3).

<<http://www.dlib.org/dlib/march01/vandesompe/03vandesompe.html>>

<doi:10.1045/march2001-vandesompe>

11.1 Journal Article, Referenced from an Electronic Journal Service,

Inline OpenURL

A journal article in D-Lib Magazine (ISSN 1082-9873):

Caplan, Priscilla and Arms, William Y. 1999. “Reference Linking for Journal Articles.” D-Lib Magazine. 5(7/8).

<<http://www.dlib.org/dlib/july99/caplan/07caplan.html>>

<doi:10.1045/july99-caplan>

is cited in the journal article:

Van de Sompel, Herbert and Beit-Arie, Oren. 2001. “Open Linking in the Scholarly Information Environment Using the OpenURL Framework.”

D-Lib Magazine. 7(3).

<<http://www.dlib.org/dlib/march01/vandesompe/03vandesompe.html>>

<doi:10.1045/march2001-vandesompe>

(1) 參考對象(Referent)

參考對象為第一篇文章，可用識別符(Identifier)或詮釋資料進行描述，如範例 11.1.1 所述。

(1) Referent

The Referent is the first article. It could be described by an Identifier and also by metadata, as shown in Example 11.1.1.

範例 11.1.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_id=info:doi/10.1045/july99-caplan
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article
&rft.aulast=Caplan &rft.aufirst=Priscilla &rft.issn=1082-9873
&rft.volume=5 &rft.issue=7/8 &rft.date=1999
&rft.atitle=Reference Linking for Journal Articles

Example 11.1.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_id=info:doi/10.1045/july99-caplan
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=article &rft.aulast=Caplan &rft.aufirst=Priscilla
&rft.issn=1082-9873 &rft.volume=5 &rft.issue=7/8
&rft.date=1999 &rft.atitle=Reference Linking for Journal
Articles

(2) 參考個體(ReferringEntity)

所謂的參考個體就是指第二篇文章。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.1.2 所述。

(2) ReferringEntity

The ReferringEntity is the second article. It could be described by an Identifier and also by metadata, as shown in Example 11.1.2.

範例 11.1.2：參考個體。

(因閱讀需要，僅使用換行方式，不用URL編碼)

&rfe_id=info:doi/10.1045/march2001-vandesompel
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal &rfe.genre=article
&rfe.aulast=Van de Sompel &rfe.aufirst=Herbert
&rfe.issn=1082-9873 &rfe.volume=7 &rfe.issue=3
&rfe.date=2001 &rfe.atitle=Open Linking in the Scholarly
Information Environment using the OpenURL Framework

Example 11.1.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_id=info:doi/10.1045/march2001-vandesompel
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal
&rfe.genre=article &rfe.aulast=Van de Sompel
&rfe.aufirst=Herbert &rfe.issn=1082-9873 &rfe.volume=7

&rfe.issue=3 &rfe.date=2001 &rfe.atitle=Open Linking in
the Scholarly Information Environment using the OpenURL
Framework

(3) 請求者(Requester)

本範例中沒有有關請求者的相關資訊。

(3) Requester

No information about the Requester is included in this example.

(4) 服務型式(ServiceType)

本範例中沒有與服務型式有關的資訊。

(4) ServiceType

No information about the ServiceType is included in this example.

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

本例中的參考者就是 D-Lib 電子期刊應用。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.1.3 所述。

(6) Referrer

The Referrer is the D-Lib electronic journal application. It can be described by an Identifier as shown in Example 11.1.3.

範例 11.1.3：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/dlib.org:dlib

Example 11.1.3: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/dlib.org:dlib

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.1.4 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.1.4.

範例 11.1.4：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_1 &ctx_tim=2003-04-10T13:56:30TZD

Example 11.1.4: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_1 &ctx_tim=2003-04-10T13:56:30TZD

(8) OpenURL 鍵值

針對參數字串使用的 OpenURL 鍵值在以下範例 11.1.5 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.1.5.

範例 11.1.5：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

url_ver=Z39.88-2004 &url_tim=2003-04-10T13:57:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

Example 11.1.5: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

url_ver=Z39.88-2004 &url_tim=2003-04-10T13:57:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

(9) 使用參數字串表達的 OpenURL

上例中，使用參數字串表達出完整的 OpenURL 表示在範例 11.1.6 中。

Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.1.6.

範例 11.1.6：使用參數字串表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0410T13%3A57%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Act
x
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUT
F8&ctx_id=10_1&ctx_tim=2003-0410T13%3A56%3A30TZD
&rft_id=info%3Adoi%2F10.1045%2Fjuly99caplan&rft_val_f
mt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genr
e=art
icle&rft.aulast=Caplan&rft.aufirst=Priscilla&rft.issn=10829873
&rft.volume=5&rft.issue=7/8&rft.date=1999&rft.atitle=Refere
nce+Linking+for
+Journal+Articles&rfe_id=info%3Adoi%2F10.1045%2Fmarch
2001vandesompel&rfe_val_fmt=info%3Aofi%2Ffmt%3Akev
%3Amtx%3Ajournal&rfe.g
enre=article&rfe.aulast=Van+de+Sompel&rfe.aufirst=Herbert&
rfe.issn=10829873&rfe.volume=7&rfe.issue=3&rfe.date=2001
&rfe.atitle=Open+Linking+in+the+
Scholarly+Information+Environment+using+the+OpenURL+F
ramework&rfr_id=info%3Asid%2Fdl.org%3Adlib
```

Example 11.1.6: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T13%3A57%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3A
UTF8&ctx_id=10_1&ctx_tim=2003-0410T13%3A56%3A30
TZD&rft_id=info%3Adoi%2F10.1045%2Fjuly99caplan&rft
_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal
&rft.genre=art
icle&rft.aulast=Caplan&rft.aufirst=Priscilla&rft.issn=108298
73&rft.volume=5&rft.issue=7/8&rft.date=1999&rft.atitle=Re
ference+Linking+for
+Journal+Articles&rfe_id=info%3Adoi%2F10.1045%2Fmar
ch2001vandesompel&rfe_val_fmt=info%3Aofi%2Ffmt%3A
kev%3Amtx%3Ajournal&rfe.g
```

enre=article&rfe.aulast=Van+de+Sompel&rfe.aufirst=Herbert&rfe.issn=10829873&rfe.volume=7&rfe.issue=3&rfe.date=2001&rfe.atitle=Open+Linking+in+the+Scholarly+Information+Environment+using+the+OpenURL+Framework&rfr_id=in fo%3Aid%2Fidlib.org%3Adlib

11.2 以參考值表達的 OpenURL，參考自電子期刊服務的期刊文章

Jane Doe 是一位加州理工大學的學生，在 Elsevier ScienceDirect®文件集中讀取了以下文章：

McArthur, James G. et al. 2001. "p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia." *Molecular Therapy*. 3(1) 8-13.
<doi:10.1006/mthe.2000.0239>

11.2 Journal Article, Referenced from an Electronic Journal Service, By-Reference OpenURL

Jane Doe, a University student at Caltech, reads the following article in the Elsevier ScienceDirect® collection:

McArthur, James G. et al. 2001. "p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia." *Molecular Therapy*. 3(1) 8-13.
<doi:10.1006/mthe.2000.0239>

在該篇文章的參考列表中，該位學生發現了以下的參考文章，她想閱讀該篇文章之全文：

Bergelson, J. 1997. "Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5." *Science*. (275) 1320-1323.
<doi:10.1126/science.275.5304.1320> <pmid:9036860>

In the reference list of that article she finds a reference to the following article and would like to view its full text:

Bergelson, J. 1997. "Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5." *Science*. (275) 1320-1323.
<doi:10.1126/science.275.5304.1320> <pmid:9036860>

(1) 參考對象(Referent)

在此參考對象是指第二篇文章。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.2.1 所述。

(1) Referent

The Referent is the second article. It could be described by two Identifiers and also by metadata, as shown in Example 11.2.1.

範例 11.2.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_id=info:doi/10.1126/science.275.5304.1320

&rft_id=info:pmid/9036860

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article

&rft.aulast=Bergelson &rft.auinit=J &rft.jtitle=Science

&rft.volume=275 &rft.spage=1320 &rft.epage=1323

&rft.date=1997 &rft.atitle=Isolation of a common receptor for
coxsackie B viruses and adenoviruses 2 and 5

Example 11.2.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_id=info:doi/10.1126/science.275.5304.1320

&rft_id=info:pmid/9036860

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal

&rft.genre=article &rft.aulast=Bergelson &rft.auinit=J

&rft.jtitle=Science &rft.volume=275 &rft.spage=1320

&rft.epage=1323 &rft.date=1997 &rft.atitle=Isolation of a
common receptor for coxsackie B viruses and adenoviruses 2
and 5

(2) 參考個體(ReferringEntity)

在此參考個體是指第一篇文章。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.2.2 所述。

(2) ReferringEntity

The ReferringEntity is the first article. It could be described by an Identifier and also by metadata, as shown in Example 11.2.2.

範例 11.2.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rfe_id=info:doi/10.1006/mthe.2000.0239
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal &rfe.genre=article
&rfe.aulast=McArthur &rfe.aufirst=James &ref.auinitm=G
&rfe.jtitle=Molecular Therapy &rfe.volume=3 &rfe.issue=1
&rfe.date=2001 &rfe.atitle=p27-p16 Chimera: A Superior
Antiproliferative for the Prevention of Neointimal Hyperplasia
```

Example 11.2.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

```
&rfe_id=info:doi/10.1006/mthe.2000.0239
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal
&rfe.genre=article &rfe.aulast=McArthur
&rfe.aufirst=James &ref.auinitm=G &rfe.jtitle=Molecular
Therapy &rfe.volume=3 &rfe.issue=1 &rfe.date=2001
&rfe.atitle=p27-p16 Chimera: A Superior Antiproliferative
for the Prevention of Neointimal Hyperplasia
```

(3) 請求者(Requester)

在此請求者是指 Jane Doe，她可以使用她的 email 地址來進行識別，如範例 11.2.3 所述。

(3) Requester

The Requester is Jane Doe, who could be identified by her email address as shown in Example 11.2.3.

範例 11.2.3：請求者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&req_id=mailto:jane.doe@caltech.edu
```

Example 11.2.3: Requester

(Not URL-encoded and with line breaks for readability)

```
&req_id=mailto:jane.doe@caltech.edu
```

(4) 服務型式(ServiceType)

Jane 希望可以觀看參考對象文章的全文內容，此需求可以透過詮釋資料進行指稱，如範例 11.2.4 所述。

(4) ServiceType

Jane would like to view the full text of the Referent article. This could be indicated by metadata as shown in Example 11.2.4.

範例 11.2.4：服務型式。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc

&svc.fulltext=yes

Example 11.2.4: ServiceType

(Not URL-encoded and with line breaks for readability)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc

&svc.fulltext=yes

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

參考者就是 Elsevier's ScienceDirect®電子期刊應用。它可以使用識別符(Identifier)來進行描述，如範例 11.2.5 所述。

(6) Referrer

The Referrer is Elsevier's ScienceDirect® electronic journal application. It can be described by an Identifier as shown in Example 11.2.5.

範例 11.2.5：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/elsevier.com:ScienceDirect

Example 11.2.5: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/elsevier.com:ScienceDirect

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進 ContextObject 中，如範例 11.2.6 所述。

(7) ContextObject

The above Descriptors are combined into a ContextObject by including the Keys shown in Example 11.2.6.

範例 11.2.6：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_2 &ctx_tim=2003-04-10T14:25:30TZD
```

Example 11.2.6: ContextObject

(Not URL-encoded and with line breaks for readability)

```
ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_2 &ctx_tim=2003-04-10T14:25:30TZD
```

(8) OpenURL 鍵值

針對以參考值表達的 OpenURL 鍵值在以下範例 11.2.7 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for a By-Reference OpenURL are shown in Example 11.2.7.

範例 11.2.7：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
url_ver=Z39.88-2004 &url_tim=2003-04-10T14:28:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&url_ctx_ref=http://example.org/temp/10_2.txt
```

Example 11.2.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

```
url_ver=Z39.88-2004
&url_tim=2003-04-10T14:28:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&url_ctx_ref=http://example.org/temp/10_2.txt
```

(9) 使用參考值表達的 OpenURL

上例中，使用參數字串表達出完整的 OpenURL 表示在範例 11.2.8 中。其中存放於 http://example.org/temp/10_2.txt 中的情境物件則表示在範例 11.2.9 中。請注意情境物件中的詮釋資料鍵值都是有前綴串的，因為整個情境物件都放置在單一的位置。詮釋資料鍵值的前綴在當情境物件個體是使用以參考值表達的形式時是可以忽略的。

(9) By-Reference OpenURL

The complete query string for the OpenURL is shown in Example 11.2.8. The ContextObject that resides at http://example.org/temp/10_2.txt is shown in Example 11.2.9. Note that the Metadata Keys within the ContextObject are prefixed, because the entire ContextObject is located in one place. Metadata Key prefixes are omitted only when an Entity within a ContextObject is By-Reference.

範例 11.2.8：使用參考值表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0410T14%3A28%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&url_ctx_ref=http%3A//example.org/temp/10_2.txt
```

Example 11.2.8: By-Reference OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T14%3A28%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&url_ctx_ref=http%3A//example.org/temp/10_2.txt
```

範例 11.2.9：被參考的情境物件。

(URL 編碼過後的格式)

```
ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&ctx_id=10_2&ctx_tim=2003-0410T14%3A25%3A30TZD&rft_id=info%3Adoi%2F10.1126%2Fscience.275.5304.1320&rft_id=info%3Apmid%2F9036860&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=article&rft.aulast=Bergelson&rft
```

t.auinit=J&rft.jtitle=Sci
ence&rft.volume=275&rft.spag=1320&rft.epag=1323&rft
t.date=1997&rft.atitle=Is
olation+of+a+common+receptor+for+coxsackie+B+viruses
+and+adenoviruses+2
+and+5&rft_id=info%3Adoi%2F10.1006%2Fmthe.2000.0
239&rft_val_fmt=info%3
Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=articl
e&rft.aulast=McArthur&
rft.aufirst=James&ref.auinitm=G&rft.jtitle=Molecular+Th
erapy&rft.volume=3&rft.issue=1&rft.date=2001&rft.atitl
e=p27p16+Chimera%3A+A+Superior+Antiproliferative+fo
r+the+Prevention+of+Neointi
mal+Hyperplasia&rft_id=mailto%3AJane.doe%40caltech.
edu&rft_val_fmt=info
%3Aofi%2Ffmt%3Akev%3Amtx%3Aasch_svc&rft.fulltext
=yes&rft_id=info%3Aid
%2Felsevier.com%3AScienceDirect

Example 11.2.9: Referenced ContextObject

(URL-encoded)

ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3
AUTF8&ctx_id=10_2&ctx_tim=2003-0410T14%3A25%
3A30TZD&rft_id=info%3Adoi%2F10.1126%2Fscience.
275.5304.132
0&rft_id=info%3Apmid%2F9036860&rft_val_fmt=info
%3Aofi%2Ffmt%3Akev%3A
mtx%3Ajournal&rft.genre=article&rft.aulast=Bergelson
&rft.auinit=J&rft.jtitle=Sci
ence&rft.volume=275&rft.spag=1320&rft.epag=1323
&rft.date=1997&rft.atitle=Is
olation+of+a+common+receptor+for+coxsackie+B+virus
es+and+adenoviruses+2
+and+5&rft_id=info%3Adoi%2F10.1006%2Fmthe.2000
.0239&rft_val_fmt=info%3
Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=art
icle&rft.aulast=McArthur&
rft.aufirst=James&ref.auinitm=G&rft.jtitle=Molecular+

Therapy&rfe.volume=3&rfe.issue=1&rfe.date=2001&rfe.atitle=p27p16+Chimera%3A+A+Superior+Antiproliferative+for+the+Prevention+of+Neointimal+Hyperplasia&req_id=mailto%3Ajane.doe%40caltech.edu&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_svc&svc.fulltext=yes&rfr_id=info%3Asid%2Felsevier.com%3AScienceDirect

11.3 以資料值透過 POST 方法表達的 OpenURL，參考自電子期刊服務的期刊文章

以下這篇文章：

Sturino JM and Klaenhammer TR. 2002. "Expression of Antisense RNA Targeted against Streptococcus thermophilus Bacteriophages." Appl Environ Microbiol. 2002 Feb; 68(2):588-596

可以在Entrez PubMed中找到：

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?
cmd=Retrieve&db=PubMed&list_uids=11823195&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11823195&dopt=Abstract)

11.3 Journal Article, Referenced from an Abstracts Service, By-Value OpenURL, POST

This article:

Sturino JM and Klaenhammer TR. 2002. "Expression of Antisense RNA Targeted against Streptococcus thermophilus Bacteriophages." Appl Environ Microbiol. 2002 Feb; 68(2):588-596

can be found in Entrez PubMed:

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?
cmd=Retrieve&db=PubMed&list_uids=11823195&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11823195&dopt=Abstract)

(1) 參考對象(Referent)

在這裡參考對象就是這篇文章。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.3.1 所述。

(1) Referent

The Referent is the article. It can be described by metadata, as shown in Example 11.3.1.

範例 11.3.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article  
&rft.aulast=Sturino &rft.auinit=JM &rft.stitle=Appl Environ  
Microbiol &rft.volume=68 &rft.issue=2 &rft.spag=588  
&rft.epag=596 &rft.date=2002-02 &rft.atitle=Expression of  
Antisense RNA Targeted against Streptococcus thermophilus  
Bacteriophages
```

Example 11.3.1: Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal  
&rft.genre=article &rft.aulast=Sturino &rft.auinit=JM  
&rft.stitle=Appl Environ Microbiol &rft.volume=68  
&rft.issue=2 &rft.spag=588 &rft.epag=596  
&rft.date=2002-02 &rft.atitle=Expression of Antisense RNA  
Targeted against Streptococcus thermophilus Bacteriophages
```

(2) 參考個體(ReferringEntity)

在此參考個體就是指在 Entrez PubMed 中該篇文章的記錄。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.3.2 所述。

(2) ReferringEntity

The ReferringEntity is the record for the article in Entrez PubMed. It can be described by an Identifier, as shown in Example 11.3.2.

範例 11.3.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rfe_id=info:pmid/11823195
```

Example 11.3.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_id=info:pmid/11823195

(3) 請求者(Requester)

透過 Cubby 系統，PubMed 可以存放啟動該 OpenURL 的請求者的資訊，包括 email 地址。假設請求者是 Fred Bloggs，下例 11.3.3 中他可以使用 email 地址進行識別。

(3) Requester

Via the Cubby system, PubMed may hold information, such as the email address, about the Requester activating the OpenURL. If Requester is Fred Bloggs, he could be identified by his email address as shown in Example 11.3.3.

範例 11.3.3：請求者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&req_id=mailto:fred.bloggs@example.org

Example 11.3.3: Requester

(Not URL-encoded and with line breaks for readability)

&req_id=mailto:fred.bloggs@example.org

(4) 服務型式(ServiceType)

PubMed 使用者可能會希望閱讀該篇文章的全文內容。這可以透過詮釋資料進行識別，如範例 11.3.4 所述。

(4) ServiceType

A PubMed user would probably wish to view the full text of the Referent article. This could be identified by metadata as shown in Example 11.3.4.

範例 11.3.4：服務型式。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc &svc.fulltext=yes

Example 11.3.4: ServiceType

(Not URL-encoded and with line breaks for readability)

```
&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc  
&svc.fulltext=yes
```

(5) 解析器(Resolver)

解析器就是會送出查訊字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

在此參考者就是 PubMed。它可以使用識別符(Identifier)來進行描述，如範例 11.3.5 所述。

(6) Referrer

The Referrer is PubMed. It can be described by an Identifier as shown in Example 11.3.5.

範例 11.3.5：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rfr_id=info:sid/ncbi.nlm.nih.gov/pubmed
```

Example 11.3.5: Referrer

(Not URL-encoded and with line breaks for readability)

```
&rfr_id=info:sid/ncbi.nlm.nih.gov/pubmed
```

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.3.6 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.3.6.

範例 11.3.6：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
```

&ctx_id=10_3 &ctx_tim=2003-04-10T15:35:30TZD

Example 11.3.6: ContextObject

(Not URL-encoded and with line breaks for readability)

ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_3 &ctx_tim=2003-04-10T15:35:30TZD

(8) OpenURL 鍵值

使用資料值表達的 OpenURL 鍵值表示在範例 11.3.7 中。

(8) OpenURL Keys

The OpenURL Keys for a By-Value OpenURL are shown in Example 11.3.7.

範例 11.3.7：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

url_ver=Z39.88-2004 &url_tim=2003-04-10T15:37:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

Example 11.3.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

url_ver=Z39.88-2004 &url_tim=2003-04-10T15:37:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

(9) 以資料值表達的 OpenURL

範例 11.3.8 中說明完整的以資料值表達之 OpenURL，其中使用了 HTTP(S) POST 方法進行傳輸。請注意在情境物件中的資料值都經過了兩次 URL 編碼過程。

(9) By-Value OpenURL

The complete By-Value OpenURL is shown using HTTP(S) POST in Example 11.3.8. Note that the values within the ContextObject are double URL-encoded.

範例 11.3.8：使用 HTTP(S) POST 方法，以資料值表達的 OpenURL。

POST /myresolver HTTP/1.1 Host: www.example.org
Content-Length: 784 Content-Type:
application/x-www-form-urlencoded
url_ver=Z39.88-2004&url_tim=2003-0410T15%3A37%3A15T

ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
 &url_ctx_val=ctx_ver%3DZ39.882004%26ctx_enc%3Dinfo%
 253Aofi%252Fenc%253AUTF8%26ctx_id%3D11_3%26ctx_ti
 m%3D2003-0410T15%253A35%253A30TZD%26rft_val_fmt
 %3Dinfo%253Aofi%252Ffmt%253Ake
 v%253Amtx%253Ajournal%26rft.genre%3Darticle%26rft.aula
 st%3DSturino%26rft.auinit%3DJM%26rft.stitle%3DAppl%2B
 environ%2BMicrobiol%26rft.volume%3D6
 8%26rft.issue%3D2%26rft.spage%3D588%26rft.epage%3D59
 6%26rft.date%3D200
 202%26rft.atitle%3DExpression%2Bof%2Bantisense%2BRNA
 %2Btargeted%2Bagain
 st%2BStreptococcus%2Bthermophilus%2BBacteriophages%2
 6rft_id%3Dinfo%
 253Apmid%252F11823195%26req_id%3Dmailto%253Afred.b
 loggs%2540example.org%26svc_val_fmt%3Dinfo%253Aofi
 %252Ffmt%253Akev%253Amtx%253Asch_
 svc%26svc.fulltext%3Dyes%26rft_id%3Dinfo%253Asid%252
 Fncbi.nlm.nih.gov%253Apubmed

Example 11.3.8: By-Value OpenURL using HTTP(S) POST

POST /myresolver HTTP/1.1 Host: www.example.org
 Content-Length: 784 Content-Type:
 application/x-www-form-urlencoded
 url_ver=Z39.88-2004&url_tim=2003-0410T15%3A37%3A1
 5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
 3Actx
 &url_ctx_val=ctx_ver%3DZ39.882004%26ctx_enc%3Dinfo%
 %253Aofi%252Fenc%253AUTF8%26ctx_id%3D11_3%26c
 tx_tim%3D2003-0410T15%253A35%253A30TZD%26rft_v
 al_fmt%3Dinfo%253Aofi%252Ffmt%253Ake
 v%253Amtx%253Ajournal%26rft.genre%3Darticle%26rft.a
 ulast%3DSturino%26rft.auinit%3DJM%26rft.stitle%3DApp
 l%2Benviron%2BMicrobiol%26rft.volume%3D6
 8%26rft.issue%3D2%26rft.spage%3D588%26rft.epage%3D
 596%26rft.date%3D200
 202%26rft.atitle%3DExpression%2Bof%2Bantisense%2BRN

A%2Btargeted%2Bagai
nst%2Bstreptococcus%2Bthermophilus%2BBacteriophages
%26rfe_id%3Dinfo%
253Apmid%252F11823195%26req_id%3Dmailto%253Afre
d.bloggs%2540example.org%26svc_val_fmt%3Dinfo%253
Aofi%252Ffmt%253Akev%253Amtx%253Asch_
svc%26svc.fulltext%3Dyes%26rfr_id%3Dinfo%253Asid%2
52Fncbi.nlm.nih.gov%253Apubmed

11.4 以參數字串表達的 OpenURL，參考自內文目錄服務的會議論文

以下這篇會議論文發表在某個期刊中：

Apps A and MacIntyre R. 2002. "Prototyping Digital Library Technologies in zetoc." In:
ECDL 2002: European Conference on research and advanced technologies for digital
libraries. Lecture Notes in Computer Science. 2458:309-323. ISSN: 0302-9743. ISBN:
3540441786.

這篇文章是英國曼徹斯特大學的某位使用者在zetoc中所找到，zetoc是英國圖書館電
子目錄服務 (the British Library's Electronic Table of Contents current awareness
service) (<http://zetoc.mimas.ac.uk>)，該文的識別符為: CN045159474。

11.4 Conference Paper in a Journal, Referenced from a Table of Contents Service, Inline OpenURL

This conference paper, which is published in a journal:

Apps A and MacIntyre R. 2002. "Prototyping Digital Library Technologies in
zetoc." In: ECDL 2002: European Conference on research and advanced
technologies for digital libraries. Lecture Notes in Computer Science. 2458:309-323.
ISSN: 0302-9743. ISBN: 3540441786.

was found in zetoc, the British Library's Electronic Table of Contents current awareness
service (<http://zetoc.mimas.ac.uk>), with an identifier: CN045159474, by a user at The
University of Manchester in the UK.

(1) 參考對象(Referent)

在這裡參考對象就是這篇論文。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.4.1 所述。

(1) Referent

The Referent is the paper. It can be described by metadata, as shown in Example 11.4.1.

範例 11.4.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=proceeding &rft.aulast=Apps &rft.auinit=A
&rft.issn=0302-9743 &rft.jtitle=Lecture Notes in Computer
Science &rft.issue=2458 &rft.spage=309 &rft.epage=323
&rft.date=2002
&rft.atitle=Prototyping Digital Library Technologies in zetoc
```

Example 11.4.1: Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=proceeding &rft.aulast=Apps &rft.auinit=A
&rft.issn=0302-9743 &rft.jtitle=Lecture Notes in Computer
Science &rft.issue=2458 &rft.spage=309 &rft.epage=323
&rft.date=2002
&rft.atitle=Prototyping Digital Library Technologies in zetoc
```

(2) 參考個體(ReferringEntity)

在此參考個體就是指在 zetoc 中該篇論文的記錄。它可以使用私有資料中的區域識別符來進行描述，如範例 11.4.2 所述。此項資料是 zetoc 所定義的特定資料，也就是解析器必須先對這類資料有所了解。

(2) ReferringEntity

The ReferringEntity is the record for the paper in zetoc. It can be described by a local identifier within private data, as shown in Example 11.4.2. This data is specific to zetoc and will be understood by a Resolver only where a prior understanding exists between them.

範例 11.4.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfe_dat=zetocid:CN045159474

Example 11.4.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_dat=zetocid:CN045159474

(3) 請求者(Requester)

該位使用者在曼徹斯特大學中，而該大學使用的是 Athens 認證系統。因此請求者個體將會包含該使用者所在機構的資訊，也就是使用三個字元表達的前綴，附在 Athens 使用者名稱之前。它可以使用私有資料中的區域識別符來進行描述，如範例 11.4.3 所述，解析器必須先對這類資料有所了解。

(3) Requester

The user is at the University of Manchester, where the Athens authentication system is in use. The Requester Entity includes information about the user's institution, a three letter prefix of their Athens user name. This is described by a local identifier within private data, as shown in Example 11.4.3, which will not be understood by the Resolver unless some prior agreement has been made.

範例 11.4.3：請求者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&req_dat=athens:man

Example 11.4.3: Requester

(Not URL-encoded and with line breaks for readability)

&req_dat=athens:man

(4) 服務型式(ServiceType)

本例中沒有服務型式的相關資訊。

(4) ServiceType

No information about the ServiceType is included in this example.

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件

中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

在此參考者就是 zetoc 應用。它可以使用識別符(Identifier)來進行描述，如範例 11.4.4 所述。

(6) Referrer

The Referrer is the zetoc application. It can be described by an Identifier as shown in Example 11.4.4.

範例 11.4.4：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/mimas.ac.uk:zetoc

Example 11.4.4: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/mimas.ac.uk:zetoc

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.4.5 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.4.5.

範例 11.4.5：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&ctx_id=10_4 &ctx_tim=2003-04-10T16:23:30TZD

Example 11.4.5: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_id=10_4 &ctx_tim=2003-04-10T16:23:30TZD

(8) OpenURL 鍵值

針對參數字串使用的 OpenURL 鍵值在以下範例 11.4.6 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.4.6.

範例 11.4.6：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
url_ver=Z39.88-2004 &url_tim=2003-04-10T16:24:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx Inline OpenURL
```

Example 11.4.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

```
url_ver=Z39.88-2004 &url_tim=2003-04-10T16:24:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx Inline OpenURL
```

使用參數字串表達出完整的 OpenURL 表示在範例 11.4.7 中。

The complete query string for the OpenURL is shown in Example 11.4.7.

範例 11.4.7：使用參數字串表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A24%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Act
x
&ctx_id=10_4&ctx_tim=2003-0410T16%3A23%3A30TZD&r
ft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajour
nal&rft.genre=proceeding&rft.aulast=Apps&rft.auinit=A&rft.is
sn=03029743&rft.jtitle=Lecture+Notes+in+Computer+Science
&rft.issue=245&rft.spage=3
09&rft.epage=323&rft.date=2002&rft.atitle=Prototyping+Digit
al+Library+Technolo
gies+in+zetoc&rft_e_dat=zetocid%3ACN045159474&req_dat=at
hens%3Aman&rft_id=info%3Asid%2Fmimas.ac.uk%3Azetoc
```

Example 11.4.7: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A24%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
```

&ctx_id=10_4&ctx_tim=2003-0410T16%3A23%3A30TZD
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajour
nal&rft.genre=proceeding&rft.aulast=Apps&rft.auinit=A&rft
.issn=03029743&rft.jtitle=Lecture+Notes+in+Computer+Sci
ence&rft.issue=245&rft.spage=3
09&rft.epage=323&rft.date=2002&rft.atitle=Prototyping+Di
gital+Library+Technolo
gies+in+zetoc&rft_e_dat=zetocid%3ACN045159474&rft_req_dat=a
thens%3Aman&rft_id
=info%3Aid%2Fmimas.ac.uk%3Azetoc

11.5 以參數值表達的 OpenURL，參考自內文目錄服務的會議論文

以下這篇會議論文：

Apps A, MacIntyre R and Morris L. 2002. "Exposing Cross-Domain Resources for
Researchers and Learners." In: Dc-2002: Dublin and metadata for e-communities.
Firenze University Press. pp 71-80. ISBN: 8884530431.

這篇文章可以在zetoc中所找到，zetoc是英國圖書館電子目錄服務（the British
Library's Electronic Table of Contents service）(<http://zetoc.mimas.ac.uk>)，該文的識別
符為：CN046568515。

11.5 Conference Paper, Referenced from a Table of Contents Service, By-Reference OpenURL

This conference paper:

Apps A, MacIntyre R and Morris L. 2002. "Exposing Cross-Domain Resources for
Researchers and Learners." In: Dc-2002: Dublin and metadata for e-communities.
Firenze University Press. pp 71-80. ISBN: 8884530431.

can be found in zetoc, the British Library's Electronic Table of Contents service
(<http://zetoc.mimas.ac.uk>), with an identifier: CN046568515

(1) 參考對象(Referent)

在這裡參考對象就是這篇文章。它可以使用以參考值表達的詮釋資料來進

行描述，如範例 10.5.1 所述。請注意在以參考值表達的詮釋資料中，詮釋資料鍵值並沒有包含前綴。

(1) Referent

The Referent is the paper. It can be described by By-Reference Metadata, as shown in Example 10.5.1. Note that for By-Reference Metadata, the Metadata Keys are not prefixed.

範例 11.5.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_ref_fmt=info:ofi/fmt:kev:mtx:book

&rft_ref=http://www.example.org/myeg.txt

(在 <http://www.example.org/myeg.txt> 中因閱讀需要使用換行方式)

genre=proceeding &aulast=Apps &auinit=A

&isbn=8884530431 &pub=Firenze University Press

&date=2002 &spage=71 &epage=80 &atitle=Exposing

Cross-Domain Resources for Researchers and Learners

Example 11.5.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_ref_fmt=info:ofi/fmt:kev:mtx:book

&rft_ref=http://www.example.org/myeg.txt

(At <http://www.example.org/myeg.txt> and with line breaks for readability)

genre=proceeding &aulast=Apps &auinit=A

&isbn=8884530431 &pub=Firenze University Press

&date=2002 &spage=71 &epage=80 &atitle=Exposing

Cross-Domain Resources for Researchers and Learners

(2) 參考個體(ReferringEntity)

在此參考個體就是指在 `zetoc` 中該篇論文的記錄。它可以使用私有資料中的區域識別符來進行描述，如範例 11.5.2 所述。此項資料是 `zetoc` 所定義的特定資料，也就是解析器必須先對這類資料有所了解。

(2) ReferringEntity

The ReferringEntity is the record for the paper in `zetoc`. It can be described by a local identifier within private data, as shown in Example 11.5.2. This data is

specific to zetoc and will be understood by a Resolver only where a prior understanding exists between them.

範例 11.5.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfe_dat=zetocid:CN046568515

Example 11.5.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_dat=zetocid:CN046568515

(3) 請求者(Requester)

本例中沒有包含與請求者相關的資訊。

(3) Requester

No information about the Requester is included in this example.

(4) 服務型式(ServiceType)

本例中沒有包含與服務形態相關的資訊。

(4) ServiceType

No information about the ServiceType is included in this example.

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

在此參考者就是 zetoc。它可以使用識別符(Identifier)來進行描述，如範例 11.5.3 所述。

(6) Referrer

The Referrer is the zetoc application. It can be described by an Identifier as shown in Example 11.5.3.

範例 11.5.3：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/mimas.ac.uk:zetoc

Example 11.5.3: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/mimas.ac.uk:zetoc

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.5.4 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.5.4.

範例 11.5.4：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_5 &ctx_tim=2003-04-10T16:41:30TZD

Example 11.5.4: ContextObject

(Not URL-encoded and with line breaks for readability)

ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_5 &ctx_tim=2003-04-10T16:41:30TZD

(8) OpenURL 鍵值

針對以參考值表達的 OpenURL 鍵值在以下範例 11.5.5 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for a By-Reference OpenURL are shown in Example 11.5.5.

範例 11.5.5：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

url_ver=Z39.88-2004 &url_tim=2003-04-10T16:43:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

&url_ctx_ref=http://example.org/temp/10_5.txt

Example 11.5.5: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

```
url_ver=Z39.88-2004 &url_tim=2003-04-10T16:43:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&url_ctx_ref=http://example.org/temp/10_5.txt
```

(9) 使用參考值表達的 OpenURL

上例中，使用以參考值表達出完整的 OpenURL 表示在範例 11.5.6 中。其中情境物件存放在 http://example.org/temp/10_5.txt，表示於範例 11.5.7 中。

(9) By-Reference OpenURL

The complete query string for the OpenURL is shown in Example 11.5.6. The ContextObject that resides at http://example.org/temp/10_5.txt is shown in Example 11.5.7.

範例 11.5.6：使用參考值表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A43%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Act
x &url_ctx_ref=http%3A//example.org/temp/10_5.txt
```

Example 11.5.6: By-Reference OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A43%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx &url_ctx_ref=http%3A//example.org/temp/10_5.txt
```

範例 11.5.7：參考到的情境物件。

(URL 編碼過後的格式)

```
ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF
8&ctx_id=10_5&ctx_tim=2003-0410T16%3A41%3A30TZD&
rft_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Aboo
k&rft_ref=http%3A%2F%2Fwww.example.org%2Fmyeg.txt&
rfe_dat=zetocid%3A
CN046568515&rfr_id=info%3Asid%2Fmimas.ac.uk%3Azetoc
```

Example 11.5.7: Referenced ContextObject

(URL-encoded)

ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&ctx_id=10_5&ctx_tim=2003-0410T16%3A41%3A30TZD&rft_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rft_ref=http%3A%2F%2Fwww.example.org%2Fmyeg.txt&rfe_dat=zetocid%3ACN046568515&rfr_id=info%3Asid%2Fmimas.ac.uk%3Azetoc

11.6 以資料值表達的 OpenURL，參考自購物服務的書籍

以下這本書在Amazon上販售：

Professional XML Meta Data. 2001. By David Dodds, et al. ISBN: 1861004516.

<<http://www.amazon.com/exec/obidos/ASIN/1861004516>>

11.6 Book, Referenced from a Shopping Service, By-Value OpenURL

This book is available from Amazon:

Professional XML Meta Data. 2001. By David Dodds, et al. ISBN: 1861004516.

<<http://www.amazon.com/exec/obidos/ASIN/1861004516>>

(1) 參考對象(Referent)

在這裡參考對象就是這本書。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.6.1 所述。

(1) Referent

The Referent is the book. It could be described by an Identifier and also by metadata, as shown in Example 11.6.1.

範例 11.6.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_id=urn:isbn:1861004516

&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book

&rft.aulast=Dodds &rft.aufirst=David &rft.isbn=1861004516

&rft.date=2001 &rft.btitle=Professional XML Meta Data

Example 11.6.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_id=urn:isbn:1861004516
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.aulast=Dodds &rft.aufirst=David &rft.isbn=1861004516
&rft.date=2001 &rft.btitle=Professional XML Meta Data

(2) 參考個體(ReferringEntity)

在此參考個體就是指該書在 Amazon 中的網頁。它可以使用識別符 (Identifier) 來進行描述，如範例 11.6.2 所述。這些資訊可以用在當使用者完成購物車相關程序後回到原頁面之用。

(2) ReferringEntity

The ReferringEntity is the page within Amazon where the book was found. It can be described by an Identifier, as shown in Example 11.6.2. It could be used by Amazon to return the user back to the originating page after going through the “shopping cart” procedure.

範例 11.6.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)
&rfe_id=http://www.amazon.com/exec/obidos/ASIN/1861004516

Example 11.6.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_id=http://www.amazon.com/exec/obidos/ASIN/1861004516

(3) 請求者(Requester)

請求者在此可以定義為該名 Amazon 使用者的使用歷程(session)識別符。這項資訊可以使用 Amazon 特定的區域識別符做為私有資料，如範例 11.6.3 所述。

(3) Requester

The Requester may be the Identifier of the session for the user within Amazon. This can be described by a local Amazon-specific identifier within private data, as shown in Example 11.6.3.

範例 11.6.3：請求者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&req_dat=104-011434-4639158

Example 11.6.3: Requester

(Not URL-encoded and with line breaks for readability)

&req_dat=104-011434-4639158

(4) 服務型式(ServiceType)

在此服務型式就是 Amazon 特定的“加入購物車”服務。這項資訊可以使用 Amazon 特定的區域識別符做為私有資料，如範例 11.6.4 所述。

(4) ServiceType

The ServiceType is the Amazon-specific service “add to shopping cart” This can be described by a local identifier within private data, as shown in Example 11.6.4.

範例 11.6.4：服務型式。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&svc_dat=addToCart

Example 11.6.4: ServiceType

(Not URL-encoded and with line breaks for readability)

&svc_dat=addToCart

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

在此參考者就是 Amazon 應用。它可以使用識別符(Identifier)來進行描述，如範例 11.6.5 所述。

(6) Referrer

The Referrer is the Amazon application. It can be described by an Identifier as shown in Example 11.6.5.

範例 11.6.5：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/amazon.com

Example 11.6.5: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/amazon.com

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.6.6 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.6.6.

範例 11.6.6：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&ctx_id=10_6 &ctx_tim=2003-04-10T17:11:30TZD

Example 11.6.6: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_id=10_6 &ctx_tim=2003-04-10T17:11:30TZD

(8) OpenURL 鍵值

針對以資料值表達的 OpenURL 鍵值在以下範例 11.6.7 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for a By-Value OpenURL are shown in Example 11.6.7.

範例 11.6.7：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

url_ver=Z39.88-2004 &url_tim=2003-04-10T17:12:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

Example 11.6.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-10T17:12:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

(9) 以資料值表達的 OpenURL

上例中，使用資料值表達出完整的 OpenURL 參數字串表示在範例 11.6.8 中。請注意情境物件中的資料值都經過了兩次的 URL 編碼。

(9) By-Value OpenURL

The complete query string for the OpenURL is shown in Example 11.6.8. Note that the values within the ContextObject are double URL-encoded.

範例 11.6.8：以資料值表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0410T17%3A12%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Act
x
&url_ctx_val=%26ctx_id%3D11_6%26ctx_tim%3D2003-0410
T17%253A11%253A30TZD%26rft_id%3Durn%253Aisbn%2
53A1861004516%26r
ft_val_fmt%3Dinfo%253Aofi%252Ffmt%253Akev%253Amtx
%253Abook%26rft.ge
nre%3Dbook%26rft.aulast%3DDodds%26rft.aufirst%3DDavid
%26rft.isbn%3D186
1004516%26rft.date%3D2001%26rft.btitle%3DProfessional%
2BXML%2Bmeta%2B
Data%26rfe_id%3Dhttp%253A%252F%252Fwww.amazon.co
m%252Fexec%252Fo
bidos%252FASIN%252F1861004516%26req_dat%3D104-011
4344639158%26svc_dat%3DaddToCart%26rfr_id%3Dinfo%2
53Asid%252Famazon.com
```

Example 11.6.8: By-Value OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T17%3A12%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
&url_ctx_val=%26ctx_id%3D11_6%26ctx_tim%3D2003-04
```

10T17%253A11%253A30TZD%26rft_id%3Durn%253Aisbn%253A1861004516%26rft_val_fmt%3Dinfo%253Aofi%252Ffmt%253Akev%253Amtx%253Abook%26rft.genre%3Dbook%26rft.aulast%3DDodds%26rft.aufirst%3DDavid%26rft.isbn%3D1861004516%26rft.date%3D2001%26rft.btitle%3DProfessional%2BXML%2Bmeta%2BData%26rfe_id%3Dhttp%253A%252F%252Fwww.amazon.com%252Fexec%252Fobidos%252FASIN%252F1861004516%26req_dat%3D104-0114344639158%26svc_dat%3DaddToCart%26rfr_id%3Dinfo%253Asid%252Famazon.com

11.7 以參數字串表達的 OpenURL，參考自期刊指南(Serials Directory)的期刊

Ulrich的期刊目錄中有以下的期刊資料。這筆資料由Mary Smith透過她所在機構的Ulrich目錄複本所檢索到。接著她想要列出該期刊所有相關的服務，例如如何找到論文電子副本或是存放列印本的圖書館。

Title: European Journal of Pain

Abbreviate Title: Eur J Pain

Publisher: Harcourt Health Sciences

ISSN: 1090-3801

Accession Number: 14587033

11.7 Journal, Referenced from a Serials Directory, Inline OpenURL

Ulrich's Serials Directory records the following journal. The record is accessed by Mary Smith via her institution's copy of Ulrich's. She would like to find a list of services concerning this journal, for instance where she can find electronic copies and which libraries hold print copies.

Title: European Journal of Pain

Abbreviate Title: Eur J Pain

Publisher: Harcourt Health Sciences

ISSN: 1090-3801

Accession Number: 14587033

(1) 參考對象(Referent)

在這裡參考對象就是該期刊。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 10.7.1 所述。

(1) Referent

The Referent is the journal. It could be described by an Identifier and also by metadata, as shown in Example 10.7.1.

範例 11.7.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rft_id=urn:issn:1090-3801

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=journal

&rft.issn=1090-3801 &rft.jtitle=European Journal of Pain

&rft.stitle=Eur J Pain

Example 11.7.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_id=urn:issn:1090-3801

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal

&rft.genre=journal &rft.issn=1090-3801 &rft.jtitle=European

Journal of Pain &rft.stitle=Eur J Pain

(2) 參考個體(ReferringEntity)

在此參考個體就是指在 Ulrich 中該篇文章的記錄。它可以使用 Ulrich 的特定私有資料來進行描述，如範例 11.7.2 所述。

(2) ReferringEntity

The ReferringEntity is the record in Ulrich's. It could be described by Ulrich's-specific private data, as shown in Example 11.7.2.

範例 11.7.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfe_dat=14587033

Example 11.7.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_dat=14587033

(3) 請求者(Requester)

請求者就是 Mary Smith。因為她已經通過使用者認證並使用它機構中的 Ulrich 服務，因此請求者資訊可以使用她在該機構 LDAP 目錄中的識別資料，如範例 11.7.3 所述。

(3) Requester

The Requester is Mary Smith. Because she has been authenticated to use her institution's copy of Ulrich's, the Requester is described by an Identifier that is an entry in her institution's LDAP directory, as shown in Example 11.7.3.

範例 11.7.3：請求者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&req_id=ldap://ldap.auni.edu/cn=mary_smith

Example 11.7.3: Requester

(Not URL-encoded and with line breaks for readability)

&req_id=ldap://ldap.auni.edu/cn=mary_smith

(4) 服務型式(ServiceType)

本例中沒有包含與服務形態相關的資訊。Mary 所需要的只是該機構解析器提供的一般服務。

(4) ServiceType

No information about the ServiceType is included in this example. The service Mary wants is the usual service provided by her institution's Resolver.

(5) 解析器(Resolver)

解析器就是會送出參數字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

參考這就是該機構的區域 Ulrich 服務。它可以使用私有資料來進行描述，如範例 11.7.4 所述。

(6) Referrer

The Referrer is the local institution's version of Ulrich's. It may be described by private data as shown in Example 11.7.4.

範例 11.7.4：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/auni.edu:ULRICH

Example 11.7.4: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/auni.edu:ULRICH

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.7.5 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.7.5.

範例 11.7.5：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&ctx_id=10_7 &ctx_tim=2003-04-11T09:35:30TZD OpenURL
Keys

Example 11.7.5: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_id=10_7 &ctx_tim=2003-04-11T09:35:30TZD
OpenURL Keys

以參數字表達的 OpenURL 鍵值表示在範例 11.7.6 中。

The OpenURL Keys for an Inline OpenURL are shown in Example 11.7.6.

範例 11.7.6：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
url_ver=Z39.88-2004 &url_tim=2003-04-11T09:36:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
```

Example 11.7.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

```
url_ver=Z39.88-2004 &url_tim=2003-04-11T09:36:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
```

(8) 以參數字串表達的 OpenURL

上例中，使用參數字串表達出完整的 OpenURL 表示在範例 11.7.7 中。

(8) Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.7.7.

範例 11.7.7：以參數字串表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0411T09%3A36%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&ctx_id=10_7&ctx_tim=2003-0411T09%3A35%3A30TZD&rft
_id=urn%3Aissn%3A10903801&rft_val_fmt=info%3Aofi%2Ff
mt%3Akev%3Amtx%3Ajournal&rft.genre=jour
nal&rft.issn=10903801&rft.jtitle=European+Journal+of+Pain&r
ft.stitle=Eur+J+Pain&rfe_dat=145870
33&req_id=ldap:%2F%2Fldap.auni.edu%2Fcn%3DMary_smith
&rfr_id=info%3Aisi%2Ffauni.edu%3AULRICH
```

Example 11.7.7: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0411T09%3A36%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
&ctx_id=10_7&ctx_tim=2003-0411T09%3A35%3A30TZD
&rft_id=urn%3Aissn%3A10903801&rft_val_fmt=info%3Ao
fi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=jour
nal&rft.issn=10903801&rft.jtitle=European+Journal+of+Pain
&rft.stitle=Eur+J+Pain&rfe_dat=145870
33&req_id=ldap:%2F%2Fldap.auni.edu%2Fcn%3DMary_sm
ith&rfr_id=info%3Aisi%2Ffauni.edu%3AULRICH
```

11.8 以參數字串表達的 OpenURL，參考自一本書的書籍

該書：Vergnaud, J.-R.在1985年所著的 “Dépendances et niveaux de représentation en syntaxe.” Amsterdam, Philadelphia. Benjamins在以下的書中被參引到：Chomsky, N.在1995年所著 “The Minimalist Program.” Cambridge, Mass: The MIT Press. ISBN 0262531283.

11.8 Book, Referenced from a Book, Inline OpenURL

This book: Vergnaud, J.-R. 1985 “Dépendances et niveaux de représentation en syntaxe.”
Amsterdam, Philadelphia: Benjamins is cited in the following book: Chomsky, N. 1995. “The Minimalist Program.” Cambridge, Mass: The MIT Press. ISBN 0262531283

(1) 參考對象(Referent)

在這裡參考對象就是第一本書。它可以使用詮釋資料來進行描述，如範例 11.8.1 所述。

(1) Referent

The Referent is the first book. It could be described by metadata, as shown in Example 11.8.1.

範例 11.8.1：參考對象。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.aulast=Vergnaud &rft.auinit=J.-R.
&rft.btitle=Dépendances et niveaux de représentation en
syntaxe &rft.date=1985 &rft.pub=Benjamins
&rft.place=Amsterdam, Philadelphia

Example 11.8.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.aulast=Vergnaud &rft.auinit=J.-R.
&rft.btitle=Dépendances et niveaux de représentation en
syntaxe &rft.date=1985 &rft.pub=Benjamins
&rft.place=Amsterdam, Philadelphia

這本書使用了法文書名，其中兩個 e 字母都標上了重音標記，這些字元必須使用情境物件特定的字元編碼方式進行編碼，本例中使用了 UTF-8 (請見下方範例 11.8.5)。標上了重音標記的 e 字母經 UTF-8 編碼過後的字串為‘0xc3 0xa9’。而再經過 URL 編碼之後則會得到‘%C3%A9’ (在範例 11.8.7 的完整 OpenURL 中可以看到)。

The title of this book is in French and includes two occurrences of ‘e’ with an acute accent. These characters must be encoded according to the Character Encoding specified for the ContextObject, in this case UTF-8 (see Example 10.8.5 below). The UTF-8 encoding for ‘Latin Small Letter E with Acute’ is ‘0xc3 0xa9’. After URL-encoding this becomes ‘%C3%A9’ (as shown in the complete OpenURL in Example 10.8.7).

(2) 參考個體(ReferringEntity)

在這裡參考對象是第二本書。它可以使用識別符(Identifier)或詮釋資料來進行描述，如範例 11.8.2 所述。

(2) ReferringEntity

The ReferringEntity is the second book. It could be described by an Identifier and also by metadata, as shown in Example 11.8.2.

範例 11.8.2：參考個體。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

```
&rfe_id=urn:isbn:0262531283
&rfe_val_fmt=info:ofi/fmt:kev:mtx:book &rfe.genre=book
&rfe.aulast=Chomsky &rfe.init=N &rfe.btitle=The Minimalist
Program &rfe.isbn=0262531283 &rfe.date=1995
&rfe.pub=The MIT Press &rfe.place=Cambridge, Mass
```

Example 11.8.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

```
&rfe_id=urn:isbn:0262531283
&rfe_val_fmt=info:ofi/fmt:kev:mtx:book &rfe.genre=book
&rfe.aulast=Chomsky &rfe.init=N &rfe.btitle=The
Minimalist Program &rfe.isbn=0262531283 &rfe.date=1995
&rfe.pub=The MIT Press &rfe.place=Cambridge, Mass
```

(3) 請求者(Requester)

本例中沒有包含請求者的資訊。

(3) Requester

No information about the Requester is included in this example.

(4) 服務型式(ServiceType)

請求者可能會想閱覽參引書籍的摘要，這種需求可以使用詮釋資料進行描述，如範例 11.8.3 所示。

(4) ServiceType

The Requester would like to see an abstract of the cited book. This can be described by metadata, as shown in Example 11.8.3.

範例 11.8.3：服務型式。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

`&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc &svc.abstract=yes`

Example 11.8.3: ServiceType

(Not URL-encoded and with line breaks for readability)

`&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc`

`&svc.abstract=yes`

(5) 解析器(Resolver)

解析器就是會送出查詢字串的基礎 URL，它並沒有外顯地包含在情境物件中。

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) 參考者(Referrer)

在此參考者就是使用者正在閱覽第二本書所使用的電子書應用。它可以使用識別符(Identifier)來進行描述，如範例 11.8.4 所述。

(6) Referrer

The Referrer is the electronic book application in which the user is reading the second book. It may be described by an Identifier as shown in Example 11.8.4.

範例 11.8.4：參考者。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&rfr_id=info:sid/ebookco.com:bookreader

Example 11.8.4: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/ebookco.com:bookreader

(7) 情境物件(ContextObject)

上述的描述符都可以使用相關鍵值整合進情境物件中，如範例 11.8.5 所述。

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.8.5.

範例 11.8.5：情境物件。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_8 &ctx_tim=2003-04-11T10:08:30TZD

Example 11.8.5: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_8 &ctx_tim=2003-04-11T10:08:30TZD

(8) OpenURL 鍵值

針對參數字串使用的 OpenURL 鍵值在以下範例 11.8.6 中進行說明。

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.8.6.

範例 11.8.6：OpenURL 鍵值。

(因閱讀需要，僅使用換行方式，不用 URL 編碼)

url_ver=Z39.88-2004 &url_tim=2003-04-11T10:09:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

Example 11.8.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-11T10:09:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

(9) 使用參數字串表達的 OpenURL

上例中，使用參數字串表達出完整的 OpenURL 表示在範例 11.8.7 中。

(9) Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.8.7.

範例 11.8.7：使用參數字串表達的 OpenURL。

(URL 編碼過後的格式)

```
url_ver=Z39.88-2004&url_tim=2003-0411T10%3A09%3A15T
ZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Act
x
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUT
F8&ctx_id=10_8&ctx_tim=2003-0411T10%3A08%3A30TZD
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Aboo
k&rft.genre=book&rft.aulast=Vergnaud&rft.auinit=J.R.&rft.bti
tle=D%C3%A9pendances+et+niveaux+de+repr%C3%A9sentat
ion
en+syntaxe&rft.date=1985&rft.pub=Benjamins&rft.place=Am
sterdam%2C+Philad
elphia&rfe_id=urn%3Aisbn%3A0262531283&rfe_val_fmt=inf
o%3Aofi%2Ffmt%3A
kev%3Amtx%3Abook&rfe.genre=book&rfe.aulast=Chomsky
&rfe.init=N&rfe.btitle
=The+Minimalist+Program&rfe.isbn=0262531283&rfe.date=1
995&rfe.pub=The+MI
T+Press&rfe.place=Cambridge%2C+Mass&svc_val_fmt=info
%3Aofi%2Ffmt%3Ak
ev%3Amtx%3Asch_svc&svc.abstract=yes&rfr_id=info%3Aid
%2Febookco.com %3Abookreader
```

Example 11.8.7: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0411T10%3A09%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
```

3Actx
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&ctx_id=10_8&ctx_tim=2003-0411T10%3A08%3A30TZD&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rft.genre=book&rft.aulast=Vergnaud&rft.auinit=J.R.&rft.btitle=D%C3%A9pendances+et+niveaux+de+repr%C3%A9sentation+en+syntaxe&rft.date=1985&rft.pub=Benjamins&rft.place=Amsterdam%2C+Philadelphia&rfe_id=urn%3Aisbn%3A0262531283&rfe_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rfe.genre=book&rfe.aulast=Chomsky&rfe.init=N&rfe.btitle=The+Minimalist+Program&rfe.isbn=0262531283&rfe.date=1995&rfe.pub=The+MIT+Press&rfe.place=Cambridge%2C+Mass&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_svc&svc.abstract=yes&rfr_id=info%3Asid%2Febookco.com %3Abookreader

附錄 A

升級到 OpenURL 1.0 版

相較於OpenURL 0.1版，1.0版看似過於複雜，以至於很難實作出來。但無論如何，以下使用學術資訊社群上的San Antonio Level 1 Profile(SAP1)，將會說明如何使用參數字串形式的OpenURL，讓0.1版升級到1.0版不至於那麼困難。OpenURL 1.0版中提供許多額外附加功能，主要目的在於提供更大的通用性以及與其他社群與應用領域的延伸性。而部份OpenURL中的項目元素實際上早已出現在0.1版本的私有資料規格中，因此將這些原來是私有資料的資訊透過一個正式的方式編碼表達，將會有助於往後OpenURLs之互通性。

Annex A

Upgrading to OpenURL version 1.0

At first sight it seems that OpenURL version 1.0 has become over-complicated and more difficult to implement than the original draft OpenURL version 0.1. However, following the San Antonio Level 1 Profile for the scholarly information community, and using an Inline OpenURL it is possible to upgrade current version 0.1 OpenURLs to version 1.0 OpenURLs without too much difficulty. The purpose of much of the extra functionality provided by version 1.0 OpenURL is to enable its generalisation and thus its extension to other communities and application domains. Some of the apparent new items within an OpenURL were, in reality, already being carried in version 0.1 OpenURLs as Private Data. Formalising the method of encoding this currently private information will increase the interoperability of OpenURLs.

A.1 1.0版使用參數字串的OpenURL和0.1版OpenURL的差異

以下引用第四段中的範例，將0.1版的OpenURL表示在範例A.1中。

A.1 Difference between version 1.0 Inline OpenURL and version 0.1 OpenURL

Taking the example shown in Section 4, a version 0.1 OpenURL could be as in Example A.1.

範例A.1 OpenURL0.1版之範例

(因閱讀需要，僅使用換行方式，不用URL編碼)

```
http://example.org/myResolver? sid=myid:mydb &id=doi:10.1126/science.275.5304.1320
&id=pmid:9036860 &genre=article &atitle=Isolation of a common receptor for coxsackie B
&title=Science &aulast=Bergelson &aunit=J &date=1997 &volume=275 &spage=1320 &epage=1323
```

Example A.1 A version 0.1 OpenURL

(Not URL-encoded and with line breaks for readability)

```
http://example.org/myResolver? sid=myid:mydb &id=doi:10.1126/science.275.5304.1320
&id=pmid:9036860 &genre=article &atitle=Isolation of a common receptor for coxsackie B
&title=Science &aulast=Bergelson &aunit=J &date=1997 &volume=275 &spage=1320 &epage=1323
```

(URL編碼過後的格式)

```
http://example.org/myResolver?sid=myid%3Amydb&id=doi%3A10.1126%2Fscien
ce.275.5304.1320&id=pmid%3A9036860&genre=article&atitle=Isolation+of+a+co
mmon+receptor+for+coxsackie+B&title=Science&aulast=Bergelson&aunit=J&d
ate=1997&volume=275&spage=1320&epage=1323
```

(URL-encoded)

```
http://example.org/myResolver?sid=myid%3Amydb&id=doi%3A10.1126%2Fscien
ce.275.5304.1320&id=pmid%3A9036860&genre=article&atitle=Isolation+of+a+co
mmon+receptor+for+coxsackie+B&title=Science&aulast=Bergelson&aunit=J&d
ate=1997&volume=275&spage=1320&epage=1323
```

以參數傳遞的OpenURL 1.0版如範例A.2所示。

A version 1.0 Inline OpenURL for this example could be as in Example A.2.

範例A.2使用參數字串傳遞的OpenURL1.0版範例

(因閱讀需要，僅使用換行方式，不用URL編碼)

```
http://example.org/myResolver? url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rft_id=info:sid/myid.com:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:pmid/9036860 &rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article
&rft.atitle=Isolation of a common receptor for coxsackie B &rft.jtitle=Science &rft.aulast=Bergelson
&rft.auinit=J &rft.date=1997 &rft.volume=275 &rft.spage=1320 &rft.epage=1323
```

(URL編碼過後的格式)

```
http://example.org/myResolver?url_ver=Z39.882004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rft_id=info%3Asid
%2Fmyid.com%3Amydb&rft_id=info%3Adoi%2F10.1126%2Fscience.275.5304.13
20&rft_id=info%3Apmid%2F9036860&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+receptor+fo
r+coxsackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.date=199
7&rft.volume=275&rft.spage=1320&rft.epage=1323
```

Example A.2 A version 1.0 Inline OpenURL

(Not URL-encoded and with line breaks for readability)

```
http://example.org/myResolver? url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rft_id=info:sid/myid.com:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:pmid/9036860 &rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article
&rft.atitle=Isolation of a common receptor for coxsackie B &rft.jtitle=Science &rft.aulast=Bergelson
&rft.auinit=J &rft.date=1997 &rft.volume=275 &rft.spage=1320 &rft.epage=1323
```

(URL-encoded)

```
http://example.org/myResolver?url_ver=Z39.882004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rft_id=info%3Asid
%2Fmyid.com%3Amydb&rft_id=info%3Adoi%2F10.1126%2Fscience.275.5304.13
20&rft_id=info%3Apmid%2F9036860&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+receptor+fo
r+cox sackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.date=199
7&rft.volume=275&rft.spag e=1320&rft.epag e=1323
```

比較一下兩個範例，可發現由OpenURL 0.1版升級到1.0版之後的幾項改變：

- (1) 必要的url_ver鍵值加入，用來表示OpenURL的版本，0.1版中的OpenURL並沒有這樣的鍵值，同時也假設版本為0.1版。
- (2) 加入url_ctx_fmt鍵值，以ContextObject Format為鍵值/編碼資料。
- (3) 原有的sid鍵值改為rft_id，同時參考者識別代碼也改變成為需要使用‘info:sid/’規格。
- (4) 原有的id鍵值改為rft_id，同時識別代碼也改變成為需要使用‘info’命名空間的識別代碼。
- (5) 新加入rft_val_fmt鍵值，用來表示OpenURL中期刊型態參考對象的資料值詮釋資料。
- (6) 詮釋資料鍵值都會以rft_val_fmt作為前綴，用來標示應用在參考對象個體的詮釋資料。
- (7) 期刊的詮釋資料鍵值改為使用一般較為偏好使用的‘jtitle’。

Comparing these two examples it can be seen that the following changes have been made to upgrade the OpenURL from version 0.1 to version 1.0:

- (1) The required Key url_ver has been added to indicate the version of the OpenURL. OpenURLs with no version Key are assumed to be version 0.1
- (2) The Key url_ctx_fmt has been added to indicate that the ContextObject Format is KEV.
- (3) The sid Key has become the rft_id Key and the encoding of the Referrer Identifier has been

altered to follow the required syntax of the 'info:sid/' scheme.

- (4) The id Keys have become rft_id Keys. The encoding of the Identifiers has been altered to use 'info:' Namespace Identifiers.
- (5) The rft_val_fmt Key has been added to indicate that the OpenURL contains By-Value Metadata for a journal-type Referent.
- (6) The metadata Keys have been prefixed by 'rft.' to indicate that the metadata applies to the Referent Entity.
- (7) The metadata Key for the journal has been changed to the preferred form of 'jtitle'.

此兩個OpenURL都包含以下元素：

- (1) 參考對象(Referent)，是使用兩個識別代碼以及以資料值表達的詮釋資料進行描述。
- (2) 參考者(Referrer)，在OpenURL 0.1版中即為'sid'。
- (3) 解析器(Resolver)，即為基礎URL，在1.0版的OpenURL中也可能將解析器涵括在情境物件中，但為選擇性的。

Both of these OpenURLs contain:

- Referent, described by two Identifiers and also By-Value Metadata
- Referrer. In OpenURL version 0.1 this is the 'sid'.
- Resolver, as a base URL. In a version 1.0 it is also possible to include the Resolver within the ContextObject, but this is optional.

1.0版的OpenURL還包括：參考個體(ReferringEntity)、請求者(Requester)及服務型式(serviceType)，這些是新增部份。但這些資訊在0.1版中的OpenURL中，卻已常用私有資料的形式進行描述。

The version 1.0 OpenURL could also contain: ReferringEntity; Requester; and ServiceType. These appear to be new additions. But, in fact, experience has shown that this information is regularly

described in the Private Data area of version 0.1 OpenURLs.

A.1.1 非文字項目

6.4.7.1中說明如何將非文字項目的描述自0.1版的OpenURL進行升級。

A.1.1 Non-text Items

Guidelines for upgrading version 0.1 OpenURLs describing non-text items are given in section 6.4.7.1.

A.2 混合型態的OpenURL

OpenURL從0.1版升級的過程中，有許多應用場合需要這樣的過渡期。此過渡期對參考者而言會產生一些困難，爲了提供使用者一定品質的服務，參考者必須持續支援0.1版本的OpenURL，直到所有解析器都升級完成爲止。對於一個大型的資訊提供者來說，其實很難去詳細了解客戶所使用的OpenURL版本爲何，另一方面，本標準亦鼓勵參考者升級到1.0版，日後才能提供更多的功能以及更好的互通性。

A.2 Hybrid OpenURLs

There will be a transition period, of indeterminate length, when applications using OpenURLs are upgrading to version 1.0. This transition period poses a particular problem for Referrers. In order to continue providing a quality service to their end users they will have to continue supplying version 0.1 OpenURLs until they are certain that all their clients' Resolvers have been upgraded. For a large information provider it may be difficult to know what version of OpenURL is in use by their customers. On the other hand, Referrers are encouraged to upgrade to version 1.0 because of the eventual increased functionality and interoperability this will provide.

面對這樣的現象，一種針對參考者可能的解決方法是提供混合式的OpenURL處理方式，同時容

納1.0版以及0.1版不同的鍵值。在此同時，OpenURL解析器也必須針對那些外來無法處理的鍵值予以適當應對(也就是適時忽略它們)，範例A.3說明按上例表示的混合式OpenURL。

A possible solution to this dilemma is for Referrers to supply hybrid OpenURLs that contain both version 1.0 and version 0.1 Keys where these differ. It is expected that OpenURL Resolvers will deal gracefully with foreign Keys that they do not understand by ignoring them. Example A.3 shows a hybrid OpenURL built from the above examples.

範例A.3 混合式的OpenURL

(因閱讀需要，僅使用換行方式，不用URL編碼)

```
http://example.org/myResolver? url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rft_id=info:sid/myid.com:mydb &sid=myid:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:ofi/pmid:9036860 &id=doi:10.1126/science.275.5304.1320 &id=pmid:9036860
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article &rft.atitle=Isolation of a common
receptor for coxsackie B &rft.jtitle=Science &rft.aulast=Bergelson &rft.auinit=J &rft.date=1997
&rft.volume=275 &rft.spag=1320 &rft.epag=1323&genre=article &atitle=Isolation of a common
receptor for coxsackie B &title=Science &aulast=Bergelson &auinit=J &date=1997 &volume=275
&spag=1320 &epag=1323
```

(URL編碼過後的格式)

```
http://example.org/myResolver?url_ver=Z39.882004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rft_id=info%3Asid
%2Fmyid.com%3Amydb&sid=myid%3Amydb&rft_id=info%3Adoi%2F10.1126%2F
science.275.5304.1320&rft_id=info%3Apmid%2F9036860&id=doi%3A10.1126%2F
science.275.5304.1320&id=pmid%3A9036860&rft_val_fmt=info%3Aofi%2Ffmt%3
Akev%3Amtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+re
```

ceptor+for+coxsackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.
date=1997&rft.volume=275&rft.spage=1320&rft.epage=1323&genre=article&atitle
=Isolation+of+a+common+receptor+for+coxsackie+B&title=Science&aulast=Ber
gelson&auinit=J&date=1997&volume=275&spage=1320&epage=1323

Example A.3 A Hybrid OpenURL

(Not URL-encoded and with line breaks for readability)

http://example.org/myResolver? url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rft_id=info:sid/myid.com:mydb &sid=myid:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:ofi/ovid:9036860 &id=doi:10.1126/science.275.5304.1320 &id=pmid:9036860
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article &rft.atitle=Isolation of a common
receptor for coxsackie B &rft.jtitle=Science &rft.aulast=Bergelson &rft.auinit=J &rft.date=1997
&rft.volume=275 &rft.spage=1320 &rft.epage=1323&genre=article &atitle=Isolation of a common
receptor for coxsackie B &title=Science &aulast=Bergelson &auinit=J &date=1997 &volume=275
&spage=1320 &epage=1323

(URL-encoded)

http://example.org/myResolver?url_ver=Z39.88-2004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rft_id=info%3Asid
%2Fmyid.com%3Amydb&sid=myid%3Amydb&rft_id=info%3Adoi%2F10.1126%2F
science.275.5304.1320&rft_id=info%3Apmid%2F9036860&id=doi%3A10.1126%2F
science.275.5304.1320&id=pmid%3A9036860&rft_val_fmt=info%3Aofi%2Ffmt%3
Akev%3Amtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+re
ceptor+for+coxsackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.
date=1997&rft.volume=275&rft.spage=1320&rft.epage=1323&genre=article&atitle
=Isolation+of+a+common+receptor+for+coxsackie+B&title=Science&aulast=Ber

gelson&auinit=J&date=1997&volume=275&spage=1320&epage=1323

附錄 B

URL 的考量

B.1 HTTP GET方法下的URL長度

使用HTTP GET方法進行傳送的方式會受限於URI GET方法長度。儘管OpenURL並沒有針對OpenURL有長度上的限制，但實際上OpenURL解析器必須要能夠接受編碼過後至多255位元組長的OpenURL，以及至多2048位元組的OpenURL。實作者在規劃儲存OpenURL的資料庫時(如E-Res或其他類似的系統)，應該要能夠預期處理這種非常長的URL字串，同時將字串長度設定在適當的變數中。目前使用HTTP GET方法且大於2048位元組的OpenURL並無法在微軟的Internet Explorer中運作，因此較長的OpenURL應該要使用HTTP Post來運作較好。

Annex B

URL Considerations

B.1 Length of HTTP GET URLs

Transport techniques based on HTTP GET are subject to length limitations on the GET URI. The OpenURL Standard does not place any a priori limit on the length of an OpenURL. However, OpenURL Resolvers must be able to accept OpenURLs as long as 255 bytes after encoding and should be able to accept OpenURLs as long as 2048 bytes. Implementers planning to store OpenURLs in databases for E-Res or similar systems should anticipate very long URL strings and should set the variable length to an appropriate value.) HTTP GET OpenURLs longer than 2048 bytes do not work in Microsoft Internet Explorer, so long OpenURLs are better sent over HTTP POST.

B.2 外來資料鍵值

外來鍵值就是那些不屬於OpenURL鍵值，KEV格式的情境物件，或是KEV格式詮釋資料的部份。這些外來鍵值對OpenURL框架來說，並不具有何意義。

B.2 Foreign Keys

Foreign keys are any keys that are not OpenURL keys, KEV ContextObject Keys, or KEV

Metadata keys. Foreign keys have no meaning assigned by the OpenURL Framework.

B.3 URL編碼

在HTTP GET或POST方法的參數字串中，使用URL編碼以及解碼動作可避免特殊字元遭到錯誤地解讀。

B.3 URL Encoding

URL Encoding and Decoding of HTTP GET and POST querystring values prevents the misinterpretation of special characters occurring in these values.

使用URL編碼程序將一個資料值變成編碼過後的資料值需要以下步驟：

1. 數字以及英文字母 “a” 到 “z”、“A” 到 “Z” 及 “0” 到 “9” 維持不變。
2. 部份特別的字元維持不變，如 “.”，“-”，“*”，以及 “_”。
3. 空白字元 “ ” 將會被取代成 “+”或是 “%20”字串(不含引號)。
4. 所有其他的字元都屬不安全字元，因此它們需要先根據UTF-8編碼規則轉為一或多個位元組的資料(或其他由情境物件指定的編碼格式)，然後每一個位元組再表達為一個三位元組的字串 “%xy”，其中xy為該位元組的兩個十六進位數值的表示方式。

To form an Encoded Value from a Value, a procedure called URL encoding is used:

1. The alphanumeric characters “a” through “z”, “A” through “Z”, and “0” through “9” remain unchanged.
2. The special characters “.”, “-”, “*”, and “_” remain unchanged.
3. The space character “ ” is replaced with a plus sign “+” or the character string “%20” (quotes not included).
4. All other characters are unsafe. They are first converted into one or more bytes using the UTF-8 encoding method (or another encoding if specified by the ContextObject Format). Then, each byte is

represented by the 3-byte string “%xy”, where xy is the two-digit hexadecimal representation of the byte.

B.4 URL解碼

使用URL解碼程序將一個編碼過後的資料值還原成原資料值需要以下步驟：

1. 加號“+”會以空白字元取代。
2. 每一個三位元組的字串 “%xy”(xy為該位元組的兩個十六進位數值的表示方式)都會還原成位元組資料值。
3. 除了情境物件中所使用的其他格式外，這些位元組資料值再經過UTF-8還原成原來的統一碼字元。

B.4 URL Decoding

To form a Value from an Encoded Value, a procedure called URL decoding is used. It reverses the URL encoding procedure:

1. The plus sign “+” is replaced by space “ ”.
2. Each instance of a 3-byte string “%xy”, where xy is a hexadecimal number, is replaced with the corresponding byte.
3. The bytes are converted to Unicode characters using UTF-8, unless otherwise specified by a ContextObject Format.

B.5 剖析HTTP查詢字串

解析器收到OpenURL請求後，就會開始剖析的步驟，同時將參數字串使用URL解碼還原成一組鍵值/編碼資料值配對。根據OpenURL傳送的型態，OpenURL解析器可能會遇到三種可能鍵值：OpenURL鍵值，KEV格式的情境物件鍵值，以及其他外來鍵值：

1. 所有使用OpenURL鍵值(請見第7節)的OpenURL傳送，這些都有前綴 ‘url_’。
2. 除了OpenURL鍵值之外，以餐數字串傳遞的OpenURL傳送也使用了KEV格式情境物件的鍵

值(請見第5節以及6.1)。這些鍵值包括：

- (1) 管理用鍵值(前綴為'ctx_')。
 - (2) 個體鍵值(前綴為 'rft_'、'rfe_'、'req_'、'rfr_'、'res_'、'svc_')。
 - (3) 由KEV格式詮釋資料所使用的鍵值(前綴為 'rft.'、'rfe.'、'req.'、'rfr.'、'res.'、'svc.')。
3. 其他外來鍵值(請見C.2節)。

B.5 Parsing of HTTP Querystrings

Upon receiving an OpenURL request, the Resolver may parse and URL-decode the querystring into a set of Key/Encoded-Value pairs. Depending on the type of OpenURL Transport, an OpenURL Resolver may encounter three types of keys: OpenURL keys, KEV ContextObject keys, and foreign keys:

1. All OpenURL Transports use OpenURL keys (see Section 7). They have a prefix 'url_'.
2. In addition to the OpenURL keys, the Inline OpenURL Transport also uses keys from the KEV ContextObject Format (see Sections 5 and 6.1). These keys are:
 - (1)Administrative keys (prefixed by 'ctx_')
 - (2)Entity keys (prefixed by 'rft_', 'rfe_', 'req_', 'rfr_', 'res_', or 'svc_').
 - (3)Keys from the KEV Metadata Formats (prefixed by 'rft.', 'rfe.', 'req.', 'rfr.', 'res.', or 'svc.').
3. Foreign keys (see Section C.2).

一旦這些鍵值自參數字串取出之後，自參數字串中取得情境物件的作業便可以開始進行。

Once keys and values have been extracted from the querystring, the acquisition of the ContextObject from the querystring may proceed.

附錄 C

安全性考量以及先期注意事項

C.1 一般性的安全考量

在使用以參考值進行的傳送中，情境物件或情境物件的個體都會面臨安全性問題。特別是經由某個解析器取用網路上特定位置資源的請求時，更需特別留意。

Annex C

Security Considerations and Precautions

C.1 General Security Considerations

By-Reference Transport, either of Context object or entities within ContextObjects, introduces certain security risks. In particular, the ability for a request to specify arbitrary network-locations from which the Resolver is expected to fetch documents raises particular concerns.

OpenURL 1.0版的實作者必須要注意到許多可能會導致安全性攻擊的部份：

1. 當OpenURL解析器進行需要特殊授權存取的動作時(如一個以IP進行授權的內容)，就有可能會發生攻擊者使用參考URL送出這樣的OpenURL。解析器必須注意不能讓這些授權的詮釋資料傳送給未經授權的使用者。
2. 在跨網站的script攻擊(cross-site scripting attack)中，有所謂編造的網頁會將內含程式碼的網頁送給使用者，這些程式碼可能會暗藏外來的資料內容，或是盜取使用者的資料，如cookie中的認證資料或是密碼資料。
3. 在稱為漩渦攻擊的種類中，一個透過參考值表示的URL以及相關資料會以無限次數的形式不斷傳回使用者端，因此解析器必須要辨認那些可能會產生無限迴圈的傳送協定以及服務，以避免這樣的攻擊擴大。

OpenURL 1.0 implementers must be aware of several possible attacks that could compromise security.

1. When an OpenURL Resolver has privileged access to resources, such as IP-authenticated

licensed content, it is possible that an attacker could hijack this access by sending OpenURL with by-reference URLs. Resolvers should take care not to expose licensed metadata by returning the resulting metadata to unprivileged users.

2. In a cross-site scripting attack, crafted data values are used to insert code into a webpage seen by a user. This code can be used to insert foreign content or steal personal data, such as authentication data or passwords from a user's "cookie" file.
3. In a vortex or maelstrom attack, By-Reference URLs and the data they return might be constructed in such a way that an endless series of requests is generated. Where possible, Resolvers may need to recognize protocols and services which that might generate such endless loops and prevent their propagation.

C.2 OpenURL解析器的先期注意事項

以設計上而言，OpenURL解析系統並不需要特別的行為需求規範，但必須要知道，即便是在潛在惡意攻擊或是錯誤使用的前提下，OpenURL解析器必須要能夠穩定且安全地運作。原標準建議，解析器需要預先注意將這些在數位資訊環境中可能會出現造成不穩定的行為予以避免。

C.2 Precautions for OpenURL Resolvers

By design, there are no requirements on the behavior of OpenURL resolving systems. However, in recognition that a network of OpenURL Resolvers must perform robustly and securely even in the presence of potentially malicious attack or inadvertent misuse, this Standard recommends that Resolvers take precautions to avoid behaviors that might be exploited to destabilize a digital information environment.

以下是需預先注意的範例：

1. OpenURL解析器不論是在以參考值表示的詮釋資料或是以參考值傳送的情境物件情形下，都

不應該去取得詮釋資料。此外，如果網路位址URL會導向另一個認定為OpenURL的位址時，解析器不應該跟隨該導向。

2. OpenURL解析器不應該使用錯誤版本的OpenURL來取用詮釋資料。

An example of such a precaution is the following:

1. The OpenURL Resolver does not fetch metadata, whether for By-Reference Metadata or for By-Reference Transport of ContextObjects, from URLs that can be identified as OpenURLs. In addition, if a network-location URL is redirected to a URL that can be identified as an OpenURL, the Resolver does not follow the redirect.
2. The OpenURL Resolver does not fetch metadata from a network location specified in an OpenURL with an invalid version string.

英中名詞對照表

-A-

-B-

-C-

Community Profile
ContextObject

社群剖繪
情境物件

-D-

Descriptor
Digital Object Identifier , DOI
Dublin Core

描述符
數位物件識別符
都柏林核心集

-E-

Entity

個體

-F-

-G-

-H-

-I-

Identifier Descriptor

識別符描述符

-J-

-K-

-L-

-M-

Machine Readable

機讀

-N-

National Bibliographic Number, NBN

美國國家書目號

-O-

	-P-	
	-Q-	
	-R-	
Referrer Identifier		參考者識別符
Referent		參考對象
Referrer		參考者
ReferringEntity		參考個體
Registry Identifier		登錄識別符
Requester		請求者
Representation		表示
Resolver		解析器
	-S-	
ServiceType		服務型式
	-T-	
	-U-	
	-V-	
	-W-	
	-X-	
	-Y-	
	-Z-	

The OpenURL Framework for Context-Sensitive Services
The Key/Encoded-Value (KEV) Format
Implementation Guidelines

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1.Scope

Within the scholarly information community the major application of the OpenURL Framework is to enable context-sensitive linking from a reference in a scholarly information system to resources relevant to the referenced item. Prior to the publication of the OpenURL Framework Standard, applications have been based on the draft OpenURL (now known as version 0.1). The traditional use of the OpenURL Framework is when a user clicks a link or button in an HTML page, typically within an ‘abstracting and indexing’ database application or the reference list of an electronic journal article. The result of activating this link is to transport a description of a scholarly resource, such as a journal article, to a linking server along with information about the dynamic context of the reference. Passing the dynamic context enables the provision of a list of relevant services appropriate for the user. The Transport is based on HTTP(S) GET or POST and is referred to as “an OpenURL”. Using OpenURL version 0.1, the information, or “payload” of the OpenURL, is transported inline as the “query string” of a URL. The Key/Encoded-Value Format provides a similar means of transporting a description of a reference and its context. The XML Format allows XML descriptions to be transported.

This document provides implementation guidelines for the Key/Encoded-Value Format. It is not an integral part of the Standard and is for information only. These guidelines will evolve over time as implementation experience is gained. Although it is intended that the OpenURL Framework Standard and the pre-defined content of the Registry will remain static, these guidelines may be updated when deemed appropriate. But note that there were some changes to the Registry during the ‘draft standard for trial use’ period.

This document follows the notational convention used in the Standard in that terms defined in the Glossary of the Standard are shown in *italics font*.

1.1 Community Profile

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile. The definitions of Community Profiles are also included in the Registry. The San Antonio Community Profiles, Level 1 (KEV) and Level 2 (XML), provide support for the scholarly information community, the community in which the OpenURL Framework originated. The San Antonio Profiles are defined in Appendices C and D of the Standard. They have machine readable definitions and identifiers in the Registry. There is also a Simple Dublin Core Community Profile under development.

2. Terms and definitions

2.1 ContextObject

The description of a referenced resource, and the descriptions of the associated resources that comprise the context of the reference, bundled together are called a ContextObject.

2.2 ServiceType

The Entity that defines the type of service requested.

2.3 Community Profile

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile.

2.4 Referrer

The Entity that generated the ContextObject.

2.5 ReferringEntity

The Entity that references the Referent.

2.6 Referent

The Entity about which the ContextObject was created – a referenced resource.

2.7 Dublin Core

The March 1995 Metadata Workshop, sponsored by the Online Computer Library Center (OCLC) and the National Center for Supercomputing Applications (NCSA), convened 52 selected researchers and professionals from librarianship, computer science, text encoding, and related areas, to advance the state of the art in the development of resource description (or metadata) records for networked electronic information objects.

2.8 Resolver

The Entity at which a request for services is targeted.

2.9 DOI (Digital Object Identifier)

A character string used in a System conforming to the rules of, and deposited in the Directory administered by, the IDF.

2.10 Requester

The Entity that requests services pertaining to the Referent.

3. Normative reference

ANSI/NISO Z39.88-2004. The OpenURL Framework for Context-Sensitive Services

Registry for the OpenURL Framework. <http://www.openurl.info/registry/>

OpenURL Syntax Description, Draft version 0.1.

<http://www.openurl.info/registry/docs/pdf/openurl-01.pdf>

Dublin Core Community Profile (DCCP) for Simple Dublin Core in KEV.

<http://www.openurl.info/registry/docs/pdf/DublinCoreProfile.pdf>

4. The ContextObject, its Entities and their Descriptors

The description of a referenced resource, and the descriptions of the associated resources that comprise the context of the reference, bundled together are called a ContextObject. It is a Representation of a ContextObject that is transported when a user makes a request by clicking a link. A KEV OpenURL may contain only one ContextObject.

The ContextObject may contain up to six Entities. One of these, the Referent, conveys information about the referenced item. It must always be included in a ContextObject. The other five entities – ReferringEntity, Requester, Resolver, ServiceType and Referrer – hold information about the context of the reference and are optional.

Bergelson, J. 1997. "Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5." *Science*. (275) 1320-1323.

<doi:10.1126/science.275.5304.1320> <pmid:9036860>

The following scenario is used for illustration (this is the same scenario used in Section 5, Part 1, of the Standard):

Jane Doe, a University student at Caltech, reads the following article in the Elsevier ScienceDirect® collection: McArthur, James G. et al. 2001. “p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia.” Molecular Therapy. 3(1) 8-13. <doi:10.1006/mthe.2000.0239>

In the reference list of that article she finds a reference to the following article and would like to view its full text:

Bergelson, J. 1997. “Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5.” Science. (275) 1320-1323.
<doi:10.1126/science.275.5304.1320> <pmid:9036860>

The Entities of a ContextObject and the constraints on their maximum (Max) and minimum (Min) occurrence are given in Table 3.1. Although the OpenURL Framework allows multiple Resolvers and ServiceTypes their maximum is constrained to one for current KEV community profiles.

Table 4.1 ContextObject Entities

Entity	Definition	Min	Max	Example
Referent	The Entity about which the ContextObject was created – a referenced resource	1	1	The article by Bergelson
ReferringEntity	The Entity that references the Referent	0	1	The article by McArthur
Requester	The Entity that requests services pertaining to the Referent	0	1	Jane Doe
ServiceType	The Entity that defines the type of service requested	0	1	Jane requests the full text of the Bergelson

				article
Resolver	The Entity at which a request for services is targeted	0	1	The Caltech linking server
Referrer	The Entity that generated the ContextObject	0	1	Elsevier's ScienceDirect®

Information about an Entity is detailed by a Descriptor. There are four types of Descriptor, defined in Section 6.2, Part 1 of the Standard.

- Identifier. For example: A Digital Object identifier
(info:doi/10.1126/science.275.5304.1320); a PubMed identifier
(info:pmid/9036860); an email address
(mailto:jane.doe@caltech.edu); a http URI
(http://links.caltech.edu/menu)
- By-Value Metadata. (Examples are given in Section 6 below)
- By-Reference Metadata. (Examples are given in Section 6 below)
- Private Data.

In KEV, an Entity may be detailed by multiple Identifier Descriptors. But it may have at most one each of By-Value Metadata, By-Reference Metadata and Private Data Descriptors.

5.Entity Description

Each of the six Entities of a ContextObject may be detailed by: several Identifier Descriptors; a By-Value Metadata Descriptor; a By-Reference Metadata

Descriptor; a Private Data Descriptor. When a ContextObject contains more than one Descriptor for an Entity all the Descriptors must refer to the same Entity.

Guidelines are given below for the description of each Entity.

Keys for ContextObject component Entities are defined by the Z39.88-2004

Matrix in the Registry at

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:ctx> . The Keys available for use in KEV for each Entity are listed in the following subsections.

The values available for Identifier Descriptors are the SAP1 selection from the Registry, listed in Section 5.

Private Data Descriptors are not defined by the OpenURL Framework Standard. Private data is specific to the providing Referrer, and thus its comprehension requires a prior understanding between a Referrer and a Resolver. Implementers should be aware that the use of Private Data Descriptors could compromise more general interoperability.

By-Value Metadata and By-Reference Metadata descriptions are both based on similar metadata descriptions of an Entity using metadata keys from the Metadata Formats described in Section 6.4. The difference is that for a By-Value Metadata description the metadata is contained within the ContextObject, whereas for a By-Reference Metadata description the metadata is held elsewhere at a network location identified in the ContextObject. Also By-Value Metadata keys are prefixed by an indicator of the Entity to which they refer. In the guidelines below only By-Value Metadata is described, but with the above provisos the guidelines

also apply to By-Reference Metadata. Note that an Entity may be described by only one KEV Metadata Format, thus it is not possible to mix Metadata Formats, for example using Keys from both 'journal' metadata and Simple Dublin Core metadata is illegal.

5.1 Referent

Every ContextObject must have a Referent, the referenced resource for which the ContextObject is created. Within the scholarly information community the Referent will probably be a document-like object, for instance: a book or part of a book; a journal publication or part of a journal; a report; etc.

The Keys listed in Table 5.1 may be used when describing a Referent.

Table 5.1 KEV Referent Keys

Key	Description
rft_id	Referent Identifier
rft_val_fmt	By-Value Metadata Format (info:ofi/fmt:kev:mtx:*)
rft_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [rft_ref also required]
rft_ref	By-Reference Metadata Location [rft_ref_fmt also required]
rft_dat	Private Data
rft.	Metadata Key Prefix

A Referent may be specified using Identifier Descriptors. Identifiers from most of the Namespaces listed in Table 6.4 would be suitable for detailing a scholarly information Referent depending on the particular type of the resource: Astrophysics Bibcode; Digital Object Identifier; ISBN; ISSN;

OAI identifier; PubMed identifier; SICI. From the Namespace listed in Table 6.3, a National Bibliographic Number would be a suitable Identifier for a scholarly resource. A Referent may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 6.3 shows a Referent detailed by Identifier Descriptors.

A Referent may be specified using a Metadata Descriptor. Any of the Metadata Formats listed in Section 6.4.1-4 would be suitable for describing a scholarly information Referent depending on the particular type of the resource: Book; Dissertation; Journal; Patent. If a Referent is described by both metadata and Identifiers, these must refer to the same resource. Examples 6.5 (a journal article) and 6.6 (a book) show a Referent described by a Metadata Descriptor.

5.2 ReferringEntity

The ReferringEntity is the Entity that references the Referent. It is optional in the ContextObject. Within the scholarly information community the ReferringEntity could be a journal article that cites the Referent. Or it could be a record within an ‘abstracting and indexing’ database.

The Keys listed in Table 4.2 may be used when describing a ReferringEntity.

Table 5.2 KEV ReferringEntity Keys

Key	Description
rfe_id	ReferringEntity Identifier
rfe_val_fmt	By-Value Metadata Format

	(info:ofi/fmt:kev:mtx:*)
rfe_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [rfe_ref also required]
rfe_ref	By-Reference Metadata Location [rfe_ref_fmt also required]
rfe_dat	Private Data
rfe.	Metadata Key Prefix

A ReferringEntity may be specified using Identifier Descriptors. Identifiers from most of the Namespaces listed in Table 5.4 would be suitable for detailing a scholarly information ReferringEntity, as described above for a Referent. A ReferringEntity may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 11.3.2 shows a ReferringEntity detailed by Identifier Descriptors.

A ReferringEntity may be specified using a Metadata Descriptor. Any of the Metadata Formats listed in Section 6.4.1-4 would be suitable for describing a scholarly information ReferringEntity depending on the particular type of the resource: Book; Dissertation; Journal; Patent. If a ReferringEntity is described by both metadata and Identifiers, these must refer to the same resource. Example 6.6 (a journal article) and 11.8.2 (a book) show a ReferringEntity described by a Metadata Descriptor.

When a ReferringEntity is a record in an ‘abstracting and indexing’ database it is better to describe it by the record Identifier rather than by metadata, because the metadata for the ReferringEntity will be the same as that for the Referent. Examples 11.3.2 and 11.4.2 show ReferringEntities that are described by public and private information service record data respectively. In some cases

a ReferringEntity may be a Web page. For instance a researcher may cite published articles on a Home page. A ReferringEntity that is a Web page can be described by an Identifier that is the URL of the Web page, as in Example 11.6.2.

5.3 Requester

The Requester is the Entity that requests services pertaining to the Referent. It is optional in the ContextObject. Within the scholarly information community the Requester is generally a human end-user who clicks a link within a digital library application.

The Keys listed in Table 5.3 may be used when describing a Requester. The KEV ContextObject definition also includes Keys for metadata description of a Requester, but the Registry does not currently include any appropriate Metadata Formats.

Table 5.3 KEV Requester Keys

Key	Description
req_id	Requester Identifier
req_dat	Private Data

A Requester may be specified using Identifier Descriptors. Identifiers from the Namespaces listed in Table 6.3 that would be suitable for detailing a Requester are: LDAP; mailto. A Requester may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource. Example 6.2 shows a Requester detailed by an Identifier Descriptor.

Some applications may wish to pass Requester authentication related information. This may be the authentication system used. Or it could be the location information such as the institution or company to which the Requester belongs. Or it could be an Identifier for the Requester that would indicate their preference profile within some system. At present this information would be described using Private Data and will depend on prior understanding by both Referrer and Resolver. It would be inadvisable to include authentication details such as passwords within a Requester Descriptor. As well as concerns about the security of the OpenURL Transport, including such detailed authentication data would probably contravene the terms and conditions of the authentication system in use.

5.4 ServiceType

The ServiceType is the Entity that defines the type of service requested. It is optional in the ContextObject. Within the scholarly information community the ServiceType could be a request for; the full text of an article; the abstract of an article; an inter-library loan request, etc.

The Keys listed in Table 5.4 may be used when describing a ServiceType. The KEV ContextObject definition also includes a Key for an Identifier description of a ServiceType, but the Registry does not currently include any appropriate Identifiers.

Table 5.4 KEV ServiceType Keys

Key	Description
-----	-------------

svc_val_fmt	By-Value Metadata Format (info:ofi/fmt:kev:mtx:*)
svc_ref_fmt	By-Reference Metadata Format (info:ofi/fmt:kev:mtx:*) [svc_ref also required]
svc_ref	By-Reference Metadata Location [svc_ref_fmt also required]
svc_dat	Private Data
svc.	Metadata Key Prefix

A ServiceType may be specified using a Metadata Descriptor. The Metadata Formats described in Section 6.4.5 would be suitable for describing a scholarly information ServiceType. Example 6.2.4 shows a ServiceType detailed by a Metadata Descriptor.

5.5 Resolver

The Resolver is the Entity at which a request for services is targeted. It is optional in the ContextObject. This need not be the same Resolver as that specified as the base URL for an OpenURL Transport and does not replace that base URL.

The Keys listed in Table 5.6 may be used when describing a Resolver. The KEV ContextObject definition also includes Keys for metadata description of a Resolver, but the Registry does not currently include any appropriate Metadata Formats.

Table 5.6 KEV Resolver Keys

Key	Description
res_id	Resolver Identifier
res_dat	Private Data

A Resolver may be specified using Identifier Descriptors. An Identifier from the Namespaces listed in Table 6.3 that would be suitable for detailing a Resolver is http. A Resolver may be detailed by multiple Identifiers, in which case all the Identifiers must identify the same resource.

5.6 Referrer

The Referrer is the Entity that generated the ContextObject. It is optional in the ContextObject, but its inclusion is strongly encouraged. Within the scholarly information community the Referrer will be an information provider such as an electronic journal application or an ‘abstracting and indexing’ service.

The Keys listed in Table 5.7 may be used when describing a Referrer. The KEV ContextObject definition also includes Keys for metadata description of a Referrer, but the Registry does not currently include any appropriate Metadata Formats.

Table 5.7 KEV Referrer Keys

Key	Description
res_id	Referrer Identifier
res_dat	Private Data

Referrer Identifiers are defined in the source identifier Namespace ‘info:ofi/nam:info:sid:’. They are identified using the ‘info:sid/’ scheme for the identification of collections of information assets defined in the Registry at <http://openurl.info/registry/docs/pdf/info-sid.pdf>. Such a collection could be

an organization, a website, a publisher, or a database. Within this scheme a Referrer Identifier consists of a DNS identifier (Internet domain name, sub-domain or host name) for the Referrer's collection, followed by an optional name providing further details about the nature of the collection, for example a particular service or database. Example Referrer Identifiers are: 'info:sid/firstsearch.oclc.org:inspec'; 'info:sid/wiley.com'.

It is strongly recommended that genuine Referrer Identifiers are included in ContextObjects. In particular a genuine Referrer Identifier is necessary if Referrer-specific Private Data is included in a ContextObject, in order to define the provenance of that private data. All the examples in Section 11 show Referrers detailed by Identifier Descriptors. Resolvers make use of Referrer Identifiers to avoid circular linking and to compile usage statistics.

Note that the Referrer scheme changed from in version 1.4 of this document from version 1.3. The 'ofi/rfr:db' scheme is no longer available.

6. Registry Selections

The following selection of KEV OpenURL Framework components from the Registry would be appropriate within the scholarly information community.

6.1 ContextObject Format

ContextObjects are represented using the Key/Encoded-Value (KEV) Format, as a string of ampersand-delimited pairs. Each pair consists of a label (Key) and an associated Value that is URL-encoded, separated by an equals ('='). All values of KEV pairs must be URL-encoded so that the ContextObject

Representation is ‘transport ready’. The KEV Format is defined in Part 3 of the Standard. URL-encoding is explained below in Appendix B.3. The Registry Identifier of the KEV Format is ‘info:ofi/fmt:kev’.

Keys for a KEV ContextObject are defined by the Z39.88-2004 MTX Constraint Definition. The Registry Identifier of the MTX Constraint Definition is ‘info:ofi/fmt:kev:mtx’ and the Registry Identifier of the KEV ContextObject Format is ‘info:ofi/fmt:kev:mtx:ctx’.

As well as defining Keys used to describe the component entities of a ContextObject (see Section 4 above), the KEV ContextObject also includes optional administrative keys for the ContextObject.

Table 6.1 KEV ContextObject Administrative Keys

Key	Description
ctx_ver	Version of the ContextObject. Fixed value: ‘Z39.88-2004’ (‘Z’ must be uppercase)
ctx_enc	Character Encoding used (see Section 5.2 below)
ctx_id	Identifier for the ContextObject
ctx_tim	Timestamp for the ContextObject, a date and time to the seconds level of the W3CDTF profile of ISO 8601, of the form ‘YYYY-MM-DDThh:mm:ssTZD’ or ‘YYYY-MM-DD’

6.2 Character Encoding

The following Character Encodings from the IANA character sets (<http://www.iana.org/assignments/character-sets>) to be used for Values within a KEV ContextObject are included in the initial Registry, where further description of these character sets may be found.

Table 6.2 KEV Character Encodings

Encoding	Registry Identifier
UTF-8 Unicode	info:ofi/enc:UTF-8
ISO Latin 1	info:ofi/enc:ISO-8859-1

The Character Encoding used within a ContextObject is specified using the `ctx_enc` Key. The default Character Encoding is UTF-8. Thus if UTF-8 is used the `ctx_enc` Key may be omitted. For By-Reference Metadata UTF-8 Character Encoding is the default, but it can declare its own encoding.

Example 5.1 Character Encoding

Specification of ISO Latin 1 Character Encoding

`&ctx_enc=info%3Aofi%2Fenc%3AISO-8859-1`

When forming an OpenURL encoded using Unicode UTF-8, best practice is to use Unicode Normalization Form C. The practice of reducing Unicode characters to ASCII is discouraged.

Other encoding schemes may be used in the future, provided they are registered, but they will not be included in the scholarly information profile SAP1.

6.3 Namespaces

The following sub-sections list the Identifier Namespaces appropriate for the scholarly information community. Namespaces have Registry Identifiers within the ‘info:ofi/nam:’ Namespace. But for an Identifier Descriptor just the URI is used. For example, the Registry Identifier for ‘mailto’ is ‘info:ofi/nam:mailto:’ but an Identifier Descriptor would be

‘mailto:jane.doe@caltech.edu’ as shown in Example 6.2.

Note that this section changed significantly from versions 1.1 to 1.2 of this document. All Namespaces now follow URI schemes and the ‘uri:’ prefix has been dropped. The previous ORI Namespaces are now URI ‘info:’ Namespaces. The private XRI Namespace is no longer available and a Referrer-specific identifier should be encoded within a Private Data Descriptor.

6.3.1.Namespaces

Table 6.3 lists the Namespaces suitable for scholarly information from URI schemes other than the ‘info:’ scheme. Identifiers from these Namespaces may be used as Identifier Descriptors. They may also be used to specify network locations for By-Reference Metadata descriptions. The following example, 6.2, shows a Requester detailed by a mailto Identifier.

Example 5.2 Requester URI Namespace Identifier Descriptor

&req_id=mailto%3Ajane.doe%40caltech.edu

Table 6.3 URI Namespaces

URI Namespace	Registry Identifier	URI
FTP	info:ofi/nam:ftp:	ftp:
HTTP	info:ofi/nam:http:	http:
LDAP	info:ofi/nam:ldap:	ldap:
mailto	info:ofi/nam:mailto:	mailto:
ISBN	info:ofi/nam:urn:ISBN:	urn:ISBN:
ISSN	info:ofi/nam:urn:ISSN:	urn:ISSN
National Bibliographic Number (NBN)	info:ofi/nam:urn:NBN	urn:NBN:

6.3.2 'info' Namespaces

Table 6.4 lists the Namespaces suitable for scholarly information from the 'info' URI scheme. Identifiers from these Namespaces may be used as Identifier Descriptors. The following example, 6.3, shows a Referent detailed by both a PubMed Identifier and a Digital Object Identifier.

Example 6.3 : Referent 'info' Namespace Identifier Descriptors

(Not URL-encoded and with line breaks for readability)

&rft_id=info:pmid/9036860

&rft_id=info:doi/10.1126/science.275.5304.1320

(URL-encoded)

&rft_id=info%3Apmid%2F9036860&rft_id=info%3Adoi%2F10.1126%2Fscience.275.5304.1320

Table 6.4 'info' Namespaces

Namespace	Registry Identifier	URI
Astrophysics Bibcode	info:ofi/nam:info:bibcode:	info:bibcode/
Digital Object Identifier	info:ofi/nam:info:doi:	info:doi/
CNRI Handle	info:ofi/nam:info:hdl:	info:hdl/
LCCN	Info:ofi/nam:info:lccn:	info:lccn/
Open Archives Initiative (OAI)	info:ofi/nam:info:oai:	info:oai/
OCLC WorldCat	info:ofi/nam:info:oclcnum:	info:oclcnum/
PubMed	info:ofi/nam:info:pmid:	info:pmid/
SICI	info:ofi/nam:info:sici:	info:sici/
Source Identifier	info:ofi/nam:info:sid:	info:sid/

6.4 Metadata Formats

Entities within a ContextObject may be described by metadata. These metadata

descriptions may be contained within the ContextObject itself, known as By-Value Metadata. Alternatively the metadata descriptions may be held elsewhere, in which case, known as By-Reference Metadata, the network location of the metadata is contained in the ContextObject. When an Entity is described by KEV By-Value Metadata the metadata keys must have a metadata prefix indicating the Entity. This metadata key prefix should not be used for KEV By-Reference Metadata.

The initial KEV Metadata Formats are listed in Table 6.5. These Metadata Formats provide a means to describe resources within the scholarly information community. They are described in more detail in the following sub-sections.

Table 6.5 Key/Encoded-Value Metadata Formats

Metadata Format	Registry Identifier
Book and Book component	info:ofi/fmt:kev:mtx:book
Dissertation	info:ofi/fmt:kev:mtx:dissertation
Journal and Journal component	info:ofi/fmt:kev:mtx:journal
Patent	info:ofi/fmt:kev:mtx:patent
Scholarly Service Type	info:ofi/fmt:kev:mtx:sch_svc

6.4.1 Journal Metadata

The Metadata Format to represent a journal publication is defined by a

Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:journal>. This

Matrix includes a description for the use of each of the metadata items.

That information is not reproduced here but guidelines for a few of the

metadata items are given below. The Matrix defines the permissible

occurrences of the metadata keys.

When a Referent (or ReferringEntity) is described with By-Value Metadata using the journal Metadata Format:

- The `rft_val_fmt` (or `rfe_val_fmt`) Key in the ContextObject has the value: `'info:ofi/fmt:kev:mtx:journal'`
- The metadata keys must be prefixed with `'rft.'` (or `'rfe.'`)

When a Referent (or ReferringEntity) is described with By-Reference Metadata using the journal Metadata Format:

- The `rft_ref_fmt` (or `rfe_ref_fmt`) Key in the ContextObject has the value: `'info:ofi/fmt:kev:mtx:journal'`
- The metadata at the location specified by the `rft_ref` (or `rfe_ref`) Key is in KEV journal Metadata Format
- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

(1) Genre

The journal Metadata Format is a general purpose Format to describe all levels within a journal or serial publication. It may also be used to describe a conference proceedings or paper where these are published in a journal, or a serial publication preprint. The specific genre of the resource within the journal publication type may be indicated by the genre metadata key. The possible values for the genre metadata key are shown in Table 6.6. It would be expected that the granularity of metadata provided would be consistent with the specified genre. For example a resource described with a genre

‘issue’ would have appropriate volume / part / issue metadata.

Table 6.6 Journal Metadata Genre Values

Genre Value	Description
journal	Serial publication issued in several parts
issue	One instance of a serial publication
Article	Document published in a journal
conference	Record of a conference published in a journal
proceeding	Single conference presentation published in a journal
preprint	Single paper or report published prior to its publication in a journal
unknown	Unknown genre

(2) Author

The Journal Metadata Format provides several keys to detail the author of an article or paper. For the purpose of matching citations it is generally the first author’s name that is significant. The first author should be specified using `aulast` to indicate their family name and one or more of `aufirst`, `auinit`, `auinit1`, `auinitm` for their given name or initials. An `ausuffix` key may also be used if a name suffix is significant. If the main creator of a document is an organization the `aucorp` key should be used instead. A general `au` key is also provided. This may be used to contain the full name of an author where splitting the author’s name is not possible. But it is recommended that `aulast`, with separate family name or initials, be used to specify the first author rather than `au` whenever possible. The `au` key is repeatable so may be used to list the co-authors of an article.

The following examples show the use of the Journal Metadata Format.

Example 6.5 shows By-Value Metadata for a Referent. Example 6.6 shows By-Reference Metadata for a ReferringEntity.

Example 6.5: By-Value Journal Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article
&rft.atitle=Isolation of a common receptor for coxsackie B
&rft.jtitle=Science &rft.aulast=Bergelson &rft.auinit=J
&rft.date=1997 &rft.volume=275 &rft.spage=1320
&rft.epage=1323
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal
&rft.genre=article&rft.atitle=Isolation+of+a+common+receptor+for+coxsackie+B
&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.date=1997&rft.volume=275&rft.spage=1320&rft.epage=1323
```

Example 6.6 By-Reference Metadata for a ReferringEntity

Within the ContextObject:

(Not URL-encoded and with line breaks for readability)

```
&rfe_ref_fmt=info:ofi/fmt:kev:mtx:journal
&rfe_ref=http://www.example.org/temp/1234.txt
```

At <http://www.example.org/temp/1234.txt> :

(Not URL-encoded and with line breaks for readability)

&genre=article &atitle=p27-p16 Chimera: A Superior Antiproliferative &jtitle=Molecular Theory &aulast=McArthur &aufirst=James &date=2001 &volume=3 &issue=1 &spage=8 &epage=13
Within the ContextObject: (URL-encoded KEV Format) &rfe_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rfe_ref=http%3A%2F%2Fwww.example.org%2Ftemp%2F1234.txt
At http://www.example.org/temp/1234.txt : (URL-encoded KEV Format) &genre=article&atitle=p27-p16+Chimera%3A+A+superior+Antiproliferative&jtitle=Molecular+Theory&aulast=McArthur&aufirst=James&date=2001&volume=3&issue=1&spage=8&epage=13

6.4.2 Book and General Document Metadata

The Metadata Format to represent a book, book component, report or general document is defined by a Z39.88-2004 Matrix in the Registry at: <http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:book>. This Matrix includes a description for the use of each of the metadata items. That information is not reproduced here but guidelines for a few of the metadata items are given below. The Matrix defines the permissible occurrences of the metadata keys.

When a Referent (or ReferringEntity) is described with By-Value Metadata using the book Metadata Format:

- The rft_val_fmt (or rfe_val_fmt) Key in the ContextObject has the value: 'info:ofi/fmt:kev:mtx:book'
- The metadata keys must be prefixed with 'rft.' (or 'rfe.')

When a Referent (or ReferringEntity) is described with By-Reference

Metadata using the book Metadata Format:

- The rft_ref_fmt (or rfe_ref_fmt) Key in the ContextObject has the value:

'info:ofi/fmt:kev:mtx:book'.
- The metadata at the location specified by the rft_ref (or rfe_ref) Key is in KEV book
- Metadata Format: The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

(1) Genre

The book Metadata Format is a general purpose Format to describe books, book components, and similar documents. It may be used to describe a conference proceedings or paper, or a report. Book metadata may also be used to describe a general document where some bibliographic information, such as author and title, are known, but the specific type of the resource cannot be determined. It could possibly be used to describe non-text items as described in Section 6.4.7. The specific genre of the resource within the book metadata type may be indicated by the genre metadata key. The possible values for the genre metadata key are shown in Table 6.7.

Table 6.7 Book Metadata Genre Values

Genre Value	Description
book	Book
bookitem	Section of a book
conference	Record of a conference
proceeding	Single conference presentation
report	Published report
document	General document
unknown	Unknown genre

(2) Author

The recommendations for detailing authors are the same as those for the Journal Metadata Format described in Section 6.4.1 above.

The following example, 6.7, shows By-Value Book Metadata for a Referent.

Example 6.7: By-Value Book Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.btitle=Professional XML Meta Data &rft.aulast=Dodds
&rft.afirst=David &rft.date=2001 &rft.isbn=1861004516
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook
&rft.genre=book&rft.b
itle=Professional+XML+Meta+Data&rft.aulast=Dodds&rft.af
irst=David&rft.date=2 001&rft.isbn=1861004516
```

6.4.3Dissertation Metadata

The Metadata Format to represent a dissertation is defined by a

Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:dissertation>.

This Matrix includes a description for the use of each of the metadata items, and defines the permissible occurrences of the metadata keys.

When a Referent (or ReferringEntity) is described with By-Value Metadata using the dissertation Metadata Format:

- The rft_val_fmt (or rfe_val_fmt) Key in the ContextObject has the value: 'info:ofi/fmt:kev:mtx:dissertation'
- The metadata keys must be prefixed with 'rft.' (or 'rfe.')

When a Referent (or ReferringEntity) is described with By-Reference Metadata using the dissertation Metadata Format:

- The rft_ref_fmt (or rfe_ref_fmt) Key in the ContextObject has the value:
'info:ofi/fmt:kev:mtx:dissertation'
- The metadata at the location specified by the rft_ref (or rfe_ref) Key is in KEV dissertation Metadata Format
- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

(1) Author

The recommendations for detailing authors are the same as those for the

Journal Metadata Format described in Section 6.4.1 above.

The following example, 5.8, shows By-Value Dissertation Metadata for a Referent.

Example 6.8: By-Value Dissertation Metadata for a Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation
&rft.title=The effects of the rare earth elements yttrium,
gadolinium and dysprosium &rft.aulast=Apps
&rft.afirst=Peter &rft.auinitm=J &rft.date=2001
&rft.co=United Kingdom &rft.inst=University of Manchester
&rft.degree=PhD
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adisser
tation&rft.title=The
effects+of+the+rare+earth+elements+yttrium%2C+gadolinu
m+and+dysprosium
&rft.aulast=Apps&rft.afirst=Peter&rft.auinitm=J&rft.date=2
001&rft.co=United+Kin
gdom&rft.inst=University+of+Manchester&rft.degree=PhD
```

6.4.4 Patent Metadata

The Metadata Format to represent a patent is defined by a Z39.88-2004 Matrix in the Registry at:

<http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:patent>. That Matrix includes a description for the use of each of the metadata items, and defines the permissible occurrences of the metadata keys.

When a Referent (or ReferringEntity) is described with By-Value Metadata using the patent Metadata Format:

- The `rft_val_fmt` (or `rfe_val_fmt`) Key in the ContextObject has the value: `'info:ofi/fmt:kev:mtx:patent'`
- The metadata keys must be prefixed with `'rft.'` (or `'rfe.'`)

When a Referent (or ReferringEntity) is described with By-Reference Metadata using the patent Metadata Format:

- The `rft_ref_fmt` (or `rfe_ref_fmt`) Key in the ContextObject has the value:
`'info:ofi/fmt:kev:mtx:patent'`
- The metadata at the location specified by the `rft_ref` (or `rfe_ref`) Key is in KEV patent
- Metadata Format: The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own encoding

6.4.5 Scholarly Service Type Metadata

The Metadata Format to represent a scholarly service type is defined by a Z39.88-2004 Matrix in the Registry at:

http://www.openurl.info/registry/docs/info:ofi/fmt:kev:mtx:sch_svc. This Matrix includes a description for the use of each of the metadata items.

That information is not reproduced here but the metadata items are listed below. Possible values for each metadata item are ‘yes’ or ‘no’. The Matrix defines the permissible occurrences of the metadata keys.

Because the OpenURL Framework does not prescribe Resolver behavior there is no guarantee that a Resolver will provide the requested service when one of these ServiceType Metadata Keys is included in a ContextObject. Requested ServiceTypes should be regarded as a hint to the Resolver. In particular it should be noted that requesting ‘fulltext’ will not override any subscription restrictions.

When a ServiceType is described with By-Value Metadata using the scholarly service type Metadata Format:

- The `svc_val_fmt` Key in the ContextObject has the value:
‘info:ofi/fmt:kev:mtx:sch_svc’
- The metadata keys must be prefixed with ‘svc.’

When a ServiceType is described with By-Reference Metadata using the scholarly service type Metadata Format:

- The `svc_ref_fmt` Key in the ContextObject has the value:
‘info:ofi/fmt:kev:mtx:sch_svc’
- The metadata at the location specified by the `svc_ref` Key is in KEV scholarly service type Metadata Format
- The metadata keys must not be prefixed
- Character Encoding default is UTF-8, but it can declare its own

encoding

Table 6.8 Scholarly Service Type Keys

Key	Description
abstract	Abstract of the Referent
citation	Bibliographic citation of the Referent
fulltext	Full text of the Referent
holdings	Holdings information related to the Referent
ill	Inter-library Loan request for the Referent
any	Any service type

The following example shows the use of the scholarly service type Metadata Format.

Example 6.9: By-Value Scholarly Metadata for a ServiceType

(Not URL-encoded and with line breaks for readability)

```
&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc
```

```
&svc.fulltext=yes
```

(URL-encoded KEV Format)

```
&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_
```

```
svc&svc.fulltext=yes
```

Note the scholarly service type Metadata Format supersedes the service type identifiers detailed in previous versions (1.3 and below) of this document, which are no longer available.

6.4.6 Dublin Core Metadata Format

An experimental metadata format for Simple Dublin Core is currently under

development. Its eventual Identifier in the Registry will be 'info:ofi/fmt:kev:mtx:dc'. It provides metadata Keys for the 15 elements of Simple Dublin Core (<http://www.dublincore.org>) listed in Table 6.9.

Table 6.9 Simple Dublin Core Metadata Keys

Key	Description
title	Name of the resource
creator	Primary creator of the content of the resource
subject	Topic of the content of the resource
description	Description of the content of the resource
publisher	Entity making resource available
contributor	Contributor to content of resource
date	Date of an event in lifecycle of resource
type	Nature or genre of content of resource
format	Physical or digital manifestation of resource
identifier	Unambiguous reference to resource in a given context
source	Resource from which this resource was derived
language	Language of intellectual content of resource
relation	Reference to a related resource
coverage	Extent or scope of content of resource
rights	Rights held in or over resource

The following example shows a use of the simple Dublin Core Metadata Format for a Referent and a ServiceType.

Example 6.10: By-Value Simple Dublin Core Metadata

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=jstor
business &rft.subject=business
```

&svc_val_fmt=info:ofi/fmt:kev:mtx:dc

&svc.format=text/xml

(URL-encoded KEV Format)

&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Adc&r

ft.title=jstor+business

&rft.subject=business&svc_val_fmt=info%3Aofi%2Ffmt%3

Akev%3Amtx%3Adc& svc.format=text%2Fxml

This Simple Dublin Core Metadata Format opens the possibility of indicating the ‘subject’ of an entity. But note that all metadata keys for a particular entity must be from the same Metadata Format.

6.4.7 Non-text and Other Metadata Formats

At present the Metadata Formats described in the above subsections are the only ones in the Registry or under development by NISO Committee AX. But there will be requirements within particular application domains for metadata specific to them.

6.4.7.1 Non-text Metadata

There has been some discussion and early development of Metadata Formats for non-text scholarly information items, such as images, maps and sound. When development of these is complete they will be added to the experimental Registry. In the meantime there are two options for creating ContextObjects describing such items.

Some OpenURL implementers have created version 0.1 OpenURLs for

non-text items by including the information they can such as ‘title’ and author information but omitting ‘genre’. This option can be taken forward when upgrading to OpenURL version 1.0. Best practice will be to create a ContextObject describing the Referent using ‘book’ metadata. As previously metadata values such as ‘title’ and author details may be included. The ‘genre’ can either be set to ‘unknown’ or omitted.

Example 6.11: By-Value ‘Book’ Metadata for an Image

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.title=My  
Photograph &rft.aulast=Apps &rft.aufirst=Ann  
&rft.genre=unknown
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ab  
ook&rft.title=My+Photogra  
ph&rft.aulast=Apps&rft.aufirst=Ann&rft.genre=unknow  
n
```

An alternative approach is to use the Simple Dublin Core Metadata Format. This will allow the inclusion of details such as ‘title’ and ‘creator’. It also provides keys for genre (‘type’) and ‘format’. Suggested best practice would be to take values from the DCMI Type Vocabulary (<http://dublincore.org/documents/dcmi-type-vocabulary/>) for ‘type’ and to use MIME types for ‘format’.

Example 6.12: By-Value Simple Dublin Core Metadata for an Image

(Not URL-encoded and with line breaks for readability)

```
&rft_val_fmt=info:ofi/fmt:kev:mtx:dc &rft.title=My  
Photograph &rft.creator=Ann Apps &rft.type=Image  
&rft.format=application/gif
```

(URL-encoded KEV Format)

```
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ad  
c&rft.title=My+Photograph  
&rft.creator=Ann+Apps&rft.type=Image&rft.format=app  
lication%2Fgif
```

6.4.7.2 Other Metadata

Other KEV Metadata Formats may be defined for use in local applications and possibly for eventual use within communities. The name of a new Metadata Format must not begin with the letters ‘ctx’.

To define a KEV Metadata Format it is necessary to define a Z39.88-2004 Matrix as defined in Appendix B of the Standard. Four steps are involved in producing a registered Metadata Format. At present, until the Registration Agency has been appointed and the registration process defined, only the first and third steps are possible.

- Publish the Z39.88-2004 Matrix defining the new Metadata Format

on a local website. Its identifier will be its URL. If this Metadata Format is for use within a local application or closed community, this is the only action required.

- Request that the new Metadata Format be added to the experimental Pre-Registry. This will make it potentially generally available. It will be assigned an identifier by the Registration Agency.
- When it is decided that the Metadata Format is suitable for registration it will be moved to the Registry, but flagged as being for ‘trial use’. This will eventually require approval from the Registration Authority, but for the initial Registry it requires vetting by NISO Committee AX.
- Following further approval by the Registration Authority it will be moved to ‘official’ status in the Registry. A final ‘info:ofi/fmt:kev:mtx:***’ identifier will be assigned. (Again this can be decided by the Committee before the appointment of a Registration Agency.)

6.5 Transports

KEV ContextObjects may be transported over the network using the Transports listed in Table

6.10. Further details of transporting KEV OpenURLs are given in Section 7.

Table 6.10 SAPI Transports

Transport	Registry Identifier
-----------	---------------------

By-Reference OpenURL over HTTP	info:ofi/tsp:http:openurl-by-ref
By-Value OpenURL over HTTP	info:ofi/tsp:http:openurl-by-val
Inline OpenURL over HTTP	info:ofi/tsp:http:openurl-inline

6.6 Profiles

A selection from the Registry of a consistent core set of components appropriate to a particular application domain is a Community Profile. The definitions of Community Profiles are also included in the Registry. The San Antonio Community Profile Level 1, provides KEV ContextObject support for the scholarly information community. There is also a Simple Dublin Core Community Profile under development.

The San Antonio Profile Level 1 (SAP1) is defined in Appendix C of the Standard, and identified in the Registry as 'info:ofi/pro:sap1'. SAP1 is defined in the Registry at <http://www.openurl.info/registry/docs/info:ofi/pro:sap1> . Many of the core components of SAP1 from the Registry are listed in the above sections of this document.

The main purpose of Community Profiles is to provide a 'benchmark' against which a Resolver or OpenURL source (ie. Referrer) can be measured. Thus they are for supporting compliance claims or requiring conformance when advertising or purchasing Resolvers and Referrers. There is no indication within a ContextObject of any Profile conformance. There is no requirement that a particular ContextObject contains only components from a particular Profile unless its creator wishes to claim conformance to that Profile. Claims of conformance to a Profile could be verified against its definition in the

Registry, but there is no means provided by the Standard of automatically interrogating a Resolver to determine which Profiles it supports, the OpenURL Framework not being a protocol.

Metadata Formats exist in the Registry independent of Profiles. Profiles subscribe to a selection of Metadata Formats. Thus one Metadata Format can be included in several profiles. Metadata Formats are indicated in actual ContextObjects for the particular Entities described by them, whereas Profiles are not.

7. OpenURL Transport

KEV ContextObjects are transported over the network using OpenURL as Inline, By-Value, or By-Reference. In all three cases this Transport uses the HTTP protocol. The ContextObjects may be conveyed using either GET or POST.

OpenURL Transport is defined in Part 5 of the Standard where there are several examples of using GET and POST and of the three methods

An OpenURL includes a single base URL that specifies the internet host, port and path of an HTTP-based service, the OpenURL Resolver, that is the target of the Transport.

Note that HTTPS, the secure sibling of HTTP, could be supported additionally, but is not required for conformance to current Profiles such as SAP1.

(1) OpenURL GET and POST

Table 7.1 lists Keys that are used in all OpenURLs. Further Keys used by the different methods are listed in the following subsections (7.1-7.3).

Table 7.1 KEV OpenURL Keys

Key	Min	Max	Description
url_ver	1	1	OpenURL version. Fixed value: Z39.88-2004 ('Z' must be uppercase)
url_tim	0	1	OpenURL creation timestamp

(2) OpenURL GET

In HTTP GET mode the OpenURL Key/Value pairs, including the further Keys listed below, are concatenated by ampersand ('&') to form the query string of an HTTP GET request. This query string is appended to the base URL of the target OpenURL Resolver, separated from it by a question mark ('?'). The query string including the values of OpenURL Keys must be URL-encoded. Example 11.1.6 shows the query string of an OpenURL using HTTP GET. Note that best practice is not to include a leading ampersand ('&') following the question mark ('?'), that is there should be no ampersand ('&') preceding the first OpenURL Key.

(3) OpenURL POST

In HTTP POST mode the query string, assembled as specified in the previous paragraph, is carried in the message body of the HTTP POST. The Content-Type of the HTTP request must be 'application/x-www-form-urlencoded'. Thus the message body must be URL-encoded. Example 11.3.8 shows an OpenURL using HTTP POST. It

should be noted that any whitespace within a POST body, possibly added by a transport agent for compatibility with legacy networks, has to be removed before processing.

7.1 Inline OpenURL

In an Inline OpenURL the ContextObject is transported as part of the query string. Table 7.2 shows the additional Keys for an Inline OpenURL.

Table 7.2 KEV Inline OpenURL Keys

Key	Min	Max	Description
url_ctx_fmt	0	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx

For an Inline OpenURL the query string is assembled by concatenating using an ampersand ('&') separator, the OpenURL Key/Value pairs of the OpenURL and the ContextObject (but with no leading '&'). Because the query string must be URL-encoded, the OpenURL Key/Value pairs must be URL-encoded. The Key/Encoded-Value pairs of the ContextObject are already URL-encoded. Examples 11.1.6, 11.4.7, 11.7.7 and 11.8.7 show Inline OpenURLs.

7.2 By-Value OpenURL

In a By-Value OpenURL the ContextObject is transported as the Value of a Key in the query string. Table 7.3 shows the additional Keys for a By-Value OpenURL.

Table 7.3 KEV By-Value OpenURL Keys

Key	Min	Max	Description
url_ctx_fmt	1	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx
url_ctx_val	1	1	Representation of the ContextObject

In a By-Value OpenURL the ContextObject is the Value of the url_ctx_val Key (with no leading '&'). Along with the other Key/Value pairs in the OpenURL, this Value must be URL-encoded. This will result in a double URL-encoding of the ContextObject within the OpenURL. Examples 11.3.8 and 11.6.8 show By-Value OpenURLs.

7.3 By-Reference OpenURL

In a By-Reference OpenURL the network location of a ContextObject, rather than the actual Representation of the ContextObject, is transported as the Value of a Key in the query string. Table 7.4 shows the additional Keys for a By-Reference OpenURL.

Table 7.4 KEV By-Reference OpenURL Keys

Key	Min	Max	Description
url_ctx_fmt	1	1	Format of the ContextObject. Fixed value: info:ofi/fmt:kev:mtx:ctx
url_ctx_ref	1	1	Network location of the ContextObject

In a By-Reference OpenURL the ContextObject is at the network location defined by the Value of the url_ctx_ref Key. Along with the other Key/Value pairs in the OpenURL, this Value must be URL-encoded. The referenced KEV ContextObject will by definition be URL-encoded (and should not have a leading '&'). Examples 11.2.8/9 and 11.5.6/7 show By-Reference OpenURLs.

It should be noted that any whitespace within a KEV By-Reference document, possibly added by a transport agent for compatibility with legacy networks, has to be removed before processing.

8.Guidelines for OpenURL Referrers

OpenURL Referrers (aka OpenURL Sources) are information providers who include OpenURL source links within the Web pages of their applications. They include electronic journal applications, ‘abstract and indexing’ services, and library OPACs.

OpenURL Referrers are strongly encouraged to provide a genuine Referrer Identifier within the ContextObject as specified in Section 5.6. This will assist general OpenURL interoperability enabling the interpretation of local Identifiers, as well as Resolver functionality such the provision of usage statistics, and the prevention of circular links. Inclusion of this provenance within an OpenURL is an indication of its quality. A genuine Referrer Identifier is necessary where a ContextObject includes Referrer-specific Private Data, in order to define the provenance of that private data.

OpenURL Referrers are encouraged to supply as much information within the ContextObject as they have available. There is no minimum recommended information set that Referrers should supply, all items being optional, but common sense indicates that sufficient data should be included to produce the required action.

Because the OpenURL Framework Standard does not prescribe Resolver behavior, there is no guarantee that Resolvers that process the OpenURLs will take action on all of this information. In particular, Referrers cannot rely on Resolvers providing the requested service when a particular ServiceType is included in an OpenURL. Requested ServiceTypes should be regarded as hints to the Resolver (see section 6.4.5). The use of Private Data within a ContextObject is discouraged because it reduces interoperability, requiring a prior understanding between a Referrer and Resolver.

All KEV OpenURLs must be URL-encoded according to the rules given in Section 7 and the URL-encoding definition in Appendix B.3.

Implementers of OpenURL Referrers should be aware of the problems associated with upgrading to OpenURL version 1.0 from OpenURL version 0.1. A recommendation on supplying ‘interim’ hybrid OpenURLs is given in Appendix A.2.

9.Guidelines for OpenURL Resolvers

An OpenURL Resolver is an HTTP-based Internet service that is the target of a request for services when an end-user activates an OpenURL source link.

Typically the Resolver will provide to the end-user a set of services that pertain to the Referent within the ContextObject of the OpenURL. These services will be appropriate for the end-user taking into account the user’s location and privileges. Typically OpenURL Resolvers include knowledge bases that record subscription, holdings and preference information for their organization.

Conformance to Profiles requires support for all their defined components (see section 6.6). To claim conformance to the San Antonio Level 1 Profile, OpenURL Resolvers should support all the selections from the Registry listed in Section 6, as defined in Appendix C.5 of the Standard. However, the OpenURL Framework Standard does not prescribe Resolver behavior, and it is not a protocol. Thus there is no requirement, beyond general expectation, for the actions that a Resolver should take on any of these selections. A SAPI compliant Resolver should resolve all of the SAPI Identifier Namespaces and Metadata Formats that it is capable of and handle gracefully the ones it cannot resolve.

It is expected that Resolvers will deal gracefully with foreign keys (see Appendix B.2). During an interim phase when implementers of Referrers are upgrading to OpenURL version 1.0 from OpenURL version 0.1, Resolvers should be aware that they may receive both forms of OpenURL as well as some hybrid ones (see Appendix A.2). Although the Standard makes no requirements on Resolver behavior, it would seem reasonable that Resolvers should continue to accept version 0.1 OpenURLs for the time being.

Because the OpenURL Framework does not prescribe Resolver behavior, there is no required action when a received OpenURL results in more than one item. A Resolver may return a list of items, or it may return nothing, dependent on the choice of the particular Resolver.

Implementers of OpenURL Resolvers should follow the guidelines in Appendix B.4 for URL-decoding and Appendix B.5 for query string parsing. They are

advised to be aware of the security considerations and precautions given in Appendix C, and considerations on the length of URLs in Appendix B.1. If part of a Resolver's operation involves redirecting OpenURLs to another OpenURL Resolver or target, it should follow the guidelines in Appendix B.3 for URL-encoding, and should pass on all the Key/Value pairs in the OpenURL and its payload ContextObject without making any changes to them.

10.Guidelines for OpenURL 'link-to' Resolvers

Some OpenURL Resolvers just provide an OpenURL compliant 'link-to' syntax as an access point to their content. They do not provide further services related to the Referent, except for any Web links and OpenURL source links they may provide as part of their usual service.

It is probable that such Resolvers will implement only part of the functionality implied in an OpenURL. They will provide a service where the OpenURL maps onto their application and data. Thus it would be expected that they publish the OpenURL functionality supported and the expected result of OpenURL requests. In the future there may be an OpenURL 'link-to' Profile registered suitable for such Resolvers to indicate conformance. At present they could claim to be compliant with their published subset of SAP1.

11.Example Scenarios

Following are some example scenarios where OpenURLs could be used. The examples show the use of Inline, By-Value and By-Reference KEV OpenURLs

within the scholarly information community. The choice of OpenURL Transport used in these examples is arbitrary. It is used to illustrate the coding of the Transports and does not indicate any relationship between scenario and choice of Transport. In all the examples, except 11.3, the OpenURLs show only the query string. This would be appended to a base URL with a '?' separator (and no leading '&') to create an actionable OpenURL.

11.1 Journal Article, Referenced from an Electronic Journal Service, Inline OpenURL

A journal article in D-Lib Magazine (ISSN 1082-9873):

Caplan, Priscilla and Arms, William Y. 1999. "Reference Linking for Journal Articles." D-Lib Magazine. 5(7/8).

<<http://www.dlib.org/dlib/july99/caplan/07caplan.html>>

<[doi:10.1045/july99-caplan](https://doi.org/10.1045/july99-caplan)>

is cited in the journal article:

Van de Sompel, Herbert and Beit-Arie, Oren. 2001. "Open Linking in the Scholarly Information Environment Using the OpenURL Framework." D-Lib Magazine. 7(3).

<<http://www.dlib.org/dlib/march01/vandesompel/03vandesompel.html>>

<[doi:10.1045/march2001-vandesompel](https://doi.org/10.1045/march2001-vandesompel)>

(1) Referent

The Referent is the first article. It could be described by an Identifier and also by metadata, as shown in Example 11.1.1.

Example 11.1.1: Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_id=info:doi/10.1045/july99-caplan
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=article &rft.aulast=Caplan &rft.aufirst=Priscilla
&rft.issn=1082-9873 &rft.volume=5 &rft.issue=7/8
&rft.date=1999 &rft.atitle=Reference Linking for Journal
Articles
```

(2) ReferringEntity

The ReferringEntity is the second article. It could be described by an Identifier and also by metadata, as shown in Example 11.1.2.

Example 11.1.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

```
&rfe_id=info:doi/10.1045/march2001-vandesompel
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal
&rfe.genre=article &rfe.aulast=Van de Sompel
&rfe.aufirst=Herbert &rfe.issn=1082-9873 &rfe.volume=7
&rfe.issue=3 &rfe.date=2001 &rfe.atitle=Open Linking in
the Scholarly Information Environment using the OpenURL
Framework
```

(3) Requester

No information about the Requester is included in this example.

(4) ServiceType

No information about the ServiceType is included in this example.

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the D-Lib electronic journal application. It can be described by an Identifier as shown in Example 11.1.3.

Example 11.1.3: Referrer

(Not URL-encoded and with line breaks for readability)

```
&rfr_id=info:sid/dlib.org:dlib
```

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.1.4.

Example 11.1.4: ContextObject

(Not URL-encoded and with line breaks for readability)
&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_1 &ctx_tim=2003-04-10T13:56:30TZD

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.1.5.

Example 11.1.5: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-10T13:57:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

(9) Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.1.6.

Example 11.1.6: Inline OpenURL

(URL-encoded)
url_ver=Z39.88-2004&url_tim=2003-0410T13%3A57%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3A
UTF8&ctx_id=10_1&ctx_tim=2003-0410T13%3A56%3A30
TZD&rft_id=info%3Adoi%2F10.1045%2Fjuly99caplan&rft
_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal
&rft.genre=art
icle&rft.aulast=Caplan&rft.aufirst=Priscilla&rft.issn=108298
73&rft.volume=5&rft.issue=7/8&rft.date=1999&rft.atitle=Re
ference+Linking+for
+Journal+Articles&rfe_id=info%3Adoi%2F10.1045%2Fmar
ch2001vandesompel&rfe_val_fmt=info%3Aofi%2Ffmt%3A
kev%3Amtx%3Ajournal&rfe.g
enre=article&rfe.aulast=Van+de+Sompel&rfe.aufirst=Herber

t&rfe.issn=10829873&rfe.volume=7&rfe.issue=3&rfe.date=2001&rfe.atitle=Open+Linking+in+the+Scholarly+Information+Environment+using+the+OpenURL+Framework&rfr_id=info:fo%3Aid%2Fdl.org%3Adlib

11.2 Journal Article, Referenced from an Electronic Journal Service, By-Reference

OpenURL

Jane Doe, a University student at Caltech, reads the following article in the Elsevier

ScienceDirect® collection:

McArthur, James G. et al. 2001. "p27-p16 Chimera: A Superior Antiproliferative for the Prevention of Neointimal Hyperplasia." *Molecular Therapy*. 3(1) 8-13.

<doi:10.1006/mthe.2000.0239>

In the reference list of that article she finds a reference to the following article and would like to view its full text:

Bergelson, J. 1997. "Isolation of a common receptor for coxsackie B viruses and adenoviruses 2 and 5." *Science*. (275) 1320-1323.

<doi:10.1126/science.275.5304.1320> <pmid:9036860>

(1) Referent

The Referent is the second article. It could be described by two Identifiers and also by metadata, as shown in Example 11.2.1.

Example 11.2.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_id=info:doi/10.1126/science.275.5304.1320

&rft_id=info:pmid/9036860

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal

&rft.genre=article &rft.aulast=Bergelson &rft.auinit=J

&rft.jtitle=Science &rft.volume=275 &rft.spage=1320

&rft.epage=1323 &rft.date=1997 &rft.atitle=Isolation of a

common receptor for coxsackie B viruses and adenoviruses 2
and 5

(2) ReferringEntity

The ReferringEntity is the first article. It could be described by an Identifier and also by metadata, as shown in Example 11.2.2.

Example 11.2.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

```
&rfe_id=info:doi/10.1006/mthe.2000.0239  
&rfe_val_fmt=info:ofi/fmt:kev:mtx:journal  
&rfe.genre=article &rfe.aulast=McArthur  
&rfe.aufirst=James &ref.auinitm=G &rfe.jtitle=Molecular  
Therapy &rfe.volume=3 &rfe.issue=1 &rfe.date=2001  
&rfe.atitle=p27-p16 Chimera: A Superior Antiproliferative  
for the Prevention of Neointimal Hyperplasia
```

(3) Requester

The Requester is Jane Doe, who could be identified by her email address as shown in Example 11.2.3.

Example 11.2.3: Requester

(Not URL-encoded and with line breaks for readability)

```
&req_id=mailto:jane.doe@caltech.edu
```

(4) ServiceType

Jane would like to view the full text of the Referent article. This could be indicated by metadata as shown in Example 11.2.4.

Example 11.2.4: ServiceType

(Not URL-encoded and with line breaks for readability)

```
&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc  
&svc.fulltext=yes
```

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is Elsevier's ScienceDirect® electronic journal application. It can be described by an Identifier as shown in Example 11.2.5.

Example 11.2.5: Referrer

(Not URL-encoded and with line breaks for readability)
&rfr_id=info:sid/elsevier.com:ScienceDirect

(7) ContextObject

The above Descriptors are combined into a ContextObject by including the Keys shown in Example 11.2.6.

Example 11.2.6: ContextObject

(Not URL-encoded and with line breaks for readability)
ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_2 &ctx_tim=2003-04-10T14:25:30TZD

(8) OpenURL Keys

The OpenURL Keys for a By-Reference OpenURL are shown in Example 11.2.7.

Example 11.2.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004
&url_tim=2003-04-10T14:28:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&url_ctx_ref=http://example.org/temp/10_2.txt

(9) By-Reference OpenURL

The complete query string for the OpenURL is shown in Example 11.2.8. The ContextObject that resides at http://example.org/temp/10_2.txt is shown in Example 11.2.9. Note that the Metadata Keys within the ContextObject are prefixed, because the entire ContextObject is located in one place. Metadata Key prefixes are omitted only when an Entity within a ContextObject is By-Reference.

Example 11.2.8: By-Reference OpenURL

(URL-encoded)
url_ver=Z39.88-2004&url_tim=2003-0410T14%3A28%

Streptococcus thermophilus Bacteriophages.” Appl Environ Microbiol. 2002 Feb;
68(2):588-596

can be found in Entrez PubMed:

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?>

cmd=Retrieve&db=PubMed&list_uids=11823195&dopt=Abstract

(1) Referent

The Referent is the article. It can be described by metadata, as shown in Example 11.3.1.

Example 11.3.1: Referent

(Not URL-encoded and with line breaks for readability)

&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=article &rft.aulast=Sturino &rft.auinit=JM
&rft.stitle=Appl Environ Microbiol &rft.volume=68
&rft.issue=2 &rft.spage=588 &rft.epage=596
&rft.date=2002-02 &rft.atitle=Expression of Antisense RNA
Targeted against Streptococcus thermophilus Bacteriophages

(2) ReferringEntity

The ReferringEntity is the record for the article in Entrez PubMed. It can be described by an Identifier, as shown in Example 11.3.2.

Example 11.3.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)

&rfe_id=info:pmid/11823195

(3) Requester

Via the Cubby system, PubMed may hold information, such as the email address, about the Requester activating the OpenURL. If Requester is Fred Bloggs, he could be identified by his email address as shown in Example 11.3.3.

Example 11.3.3: Requester

(Not URL-encoded and with line breaks for readability)

&req_id=mailto:fred.bloggs@example.org

(4) ServiceType

A PubMed user would probably wish to view the full text of the Referent article. This could be identified by metadata as shown in Example 11.3.4.

Example 11.3.4: ServiceType

(Not URL-encoded and with line breaks for readability)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc

&svc.fulltext=yes

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is PubMed. It can be described by an Identifier as shown in Example 11.3.5.

Example 11.3.5: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/ncbi.nlm.nih.gov:pubmed

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.3.6.

Example 11.3.6: ContextObject

(Not URL-encoded and with line breaks for readability)

ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_3 &ctx_tim=2003-04-10T15:35:30TZD

(8) OpenURL Keys

The OpenURL Keys for a By-Value OpenURL are shown in Example 11.3.7.

Example 11.3.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

url_ver=Z39.88-2004 &url_tim=2003-04-10T15:37:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

(9) By-Value OpenURL

The complete By-Value OpenURL is shown using HTTP(S) POST in Example 11.3.8. Note that the values within the ContextObject are double URL-encoded.

Example 11.3.8: By-Value OpenURL using HTTP(S) POST

```
POST /myresolver HTTP/1.1 Host: www.example.org
Content-Length: 784 Content-Type:
application/x-www-form-urlencoded
url_ver=Z39.88-2004&url_tim=2003-0410T15%3A37%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx
&url_ctx_val=ctx_ver%3DZ39.882004%26ctx_enc%3Dinfo
%253Aofi%252Fenc%253AUTF8%26ctx_id%3D11_3%26c
tx_tim%3D2003-0410T15%253A35%253A30TZD%26rft_v
al_fmt%3Dinfo%253Aofi%252Ffmt%253Ake
v%253Amtx%253Ajournal%26rft.genre%3Darticle%26rft.a
ulast%3DSturino%26rft.auinit%3DJM%26rft.stitle%3DApp
l%2Benviro%2Bmicrobiol%26rft.volume%3D6
8%26rft.issue%3D2%26rft.spage%3D588%26rft.epage%3D
596%26rft.date%3D200
202%26rft.atitle%3DExpression%2Bof%2Bantisense%2BRN
A%2Btargeted%2Bagain
st%2Bstreptococcus%2Bthermophilus%2BBacteriophages
%26rft_id%3Dinfo%
253Apmid%252F11823195%26req_id%3Dmailto%253Afre
d.bloggs%2540example.org%26svc_val_fmt%3Dinfo%253
Aofi%252Ffmt%253Akev%253Amtx%253Asch_
svc%26svc.fulltext%3Dyes%26rft_id%3Dinfo%253Asid%2
52Fncbi.nlm.nih.gov%253Apubmed
```

11.4 Conference Paper in a Journal, Referenced from a Table of Contents Service, Inline OpenURL

This conference paper, which is published in a journal:

Apps A and MacIntyre R. 2002. "Prototyping Digital Library Technologies in

zetoc.” In: ECDL 2002: European Conference on research and advanced technologies for digital libraries. Lecture Notes in Computer Science. 2458:309-323. ISSN: 0302-9743. ISBN: 3540441786.

was found in zetoc, the British Library’s Electronic Table of Contents current awareness service (<http://zetoc.mimas.ac.uk>), with an identifier: CN045159474, by a user at The University of Manchester in the UK.

(1) Referent

The Referent is the paper. It can be described by metadata, as shown in Example 11.4.1.

Example 11.4.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=proceeding &rft.aulast=Apps &rft.auinit=A
&rft.issn=0302-9743 &rft.jtitle=Lecture Notes in Computer
Science &rft.issue=2458 &rft.spage=309 &rft.epage=323
&rft.date=2002
&rft.atitle=Prototyping Digital Library Technologies in zetoc

(2) ReferringEntity

The ReferringEntity is the record for the paper in zetoc. It can be described by a local identifier within private data, as shown in Example 11.4.2. This data is specific to zetoc and will be understood by a Resolver only where a prior understanding exists between them.

Example 11.4.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_dat=zetocid:CN045159474

(3) Requester

The user is at the University of Manchester, where the Athens authentication system is in use. The Requester Entity includes information about the user’s institution, a three letter prefix of their Athens user name. This is described by a local identifier within private data, as shown in Example 11.4.3, which will

not be understood by the Resolver unless some prior agreement has been made.

Example 11.4.3: Requester

(Not URL-encoded and with line breaks for readability)
&req_dat=athens:man

(4) ServiceType

No information about the ServiceType is included in this example.

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the zetoc application. It can be described by an Identifier as shown in Example 11.4.4.

Example 11.4.4: Referrer

(Not URL-encoded and with line breaks for readability)
&rfr_id=info:sid/mimas.ac.uk:zetoc

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.4.5.

Example 11.4.5: ContextObject

(Not URL-encoded and with line breaks for readability)
&ctx_id=10_4 &ctx_tim=2003-04-10T16:23:30TZD

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.4.6.

Example 11.4.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-10T16:24:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.4.7.

Example 11.4.7: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A24%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&ctx_id=10_4&ctx_tim=2003-0410T16%3A23%3A30TZD
&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=proceeding&rft.aulast=Apps&rft.auinit=A&rft.issn=03029743&rft.jtitle=Lecture+Notes+in+Computer+Science&rft.issue=245&rft.spage=309&rft.epage=323&rft.date=2002&rft.atitle=Prototyping+Digital+Library+Technologies+in+zetoc&rft_e_dat=zetocid%3ACN045159474&rft_req_dat=athens%3Aman&rft_rft_id=info%3Aid%2Fmimas.ac.uk%3Azetoc
```

11.5 Conference Paper, Referenced from a Table of Contents Service, By-Reference OpenURL

This conference paper:

Apps A, MacIntyre R and Morris L. 2002. "Exposing Cross-Domain Resources for Researchers and Learners." In: Dc-2002: Dublin and metadata for e-communities. Firenze University Press. pp 71-80. ISBN: 8884530431.

can be found in zetoc, the British Library's Electronic Table of Contents service

(<http://zetoc.mimas.ac.uk>), with an identifier: CN046568515

(1) Referent

The Referent is the paper. It can be described by By-Reference Metadata, as shown in Example 10.5.1. Note that for By-Reference Metadata, the Metadata Keys are not prefixed.

Example 11.5.1: Referent

(Not URL-encoded and with line breaks for readability)

```
&rft_ref_fmt=info:ofi/fmt:kev:mtx:book
```

&rft_ref=http://www.example.org/myeg.txt
(At http://www.example.org/myeg.txt and with line breaks
for readability)
genre=proceeding &aulast=Apps &auinit=A
&isbn=8884530431 &pub=Firenze University Press
&date=2002 &spage=71 &epage=80 &atitle=Exposing
Cross-Domain Resources for Researchers and Learners

(2) ReferringEntity

The ReferringEntity is the record for the paper in zetoc. It can be described by a local identifier within private data, as shown in Example 11.5.2. This data is specific to zetoc and will be understood by a Resolver only where a prior understanding exists between them.

Example 11.5.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_dat=zetocid:CN046568515

(3) Requester

No information about the Requester is included in this example.

(4) ServiceType

No information about the ServiceType is included in this example.

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the zetoc application. It can be described by an Identifier as shown in Example 11.5.3.

Example 11.5.3: Referrer

(Not URL-encoded and with line breaks for readability)
&rfr_id=info:sid/mimas.ac.uk:zetoc

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including

the Keys shown in Example 11.5.4.

Example 11.5.4: ContextObject

(Not URL-encoded and with line breaks for readability)

```
ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8
&ctx_id=10_5 &ctx_tim=2003-04-10T16:41:30TZD
```

(8) OpenURL Keys

The OpenURL Keys for a By-Reference OpenURL are shown in Example 11.5.5.

Example 11.5.5: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

```
url_ver=Z39.88-2004 &url_tim=2003-04-10T16:43:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&url_ctx_ref=http://example.org/temp/10_5.txt
```

(9) By-Reference OpenURL

The complete query string for the OpenURL is shown in Example 11.5.6. The ContextObject that resides at http://example.org/temp/10_5.txt is shown in Example 11.5.7.

Example 11.5.6: By-Reference OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T16%3A43%3A1
5TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%
3Actx &url_ctx_ref=http%3A//example.org/temp/10_5.txt
```

Example 11.5.7: Referenced ContextObject

(URL-encoded)

```
ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUT
F8&ctx_id=10_5&ctx_tim=2003-0410T16%3A41%3A30TZ
D&rft_ref_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abo
o
k&rft_ref=http%3A%2F%2Fwww.example.org%2Fmyeg.txt
&rft_dat=zetocid%3A
CN046568515&rft_id=info%3Asid%2Fmimas.ac.uk%3Azet
oc
```

11.6 Book, Referenced from a Shopping Service, By-Value OpenURL

This book is available from Amazon:

Professional XML Meta Data. 2001. By David Dodds, et al. ISBN: 1861004516.

<<http://www.amazon.com/exec/obidos/ASIN/1861004516>>

(1) Referent

The Referent is the book. It could be described by an Identifier and also by metadata, as shown in Example 11.6.1.

Example 11.6.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_id=urn:isbn:1861004516
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.aulast=Dodds &rft.aufirst=David &rft.isbn=1861004516
&rft.date=2001 &rft.btitle=Professional XML Meta Data

(2) ReferringEntity

The ReferringEntity is the page within Amazon where the book was found. It can be described by an Identifier, as shown in Example 11.6.2. It could be used by Amazon to return the user back to the originating page after going through the “shopping cart” procedure.

Example 11.6.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_id=<http://www.amazon.com/exec/obidos/ASIN/1861004516>

(3) Requester

The Requester may be the Identifier of the session for the user within Amazon. This can be described by a local Amazon-specific identifier within private data, as shown in Example 11.6.3.

Example 11.6.3: Requester

(Not URL-encoded and with line breaks for readability)
&req_dat=104-011434-4639158

(4) ServiceType

The ServiceType is the Amazon-specific service “add to shopping cart” This can be described by a local identifier within private data, as shown in Example 11.6.4.

Example 11.6.4: ServiceType

(Not URL-encoded and with line breaks for readability)
&svc_dat=addToCart

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the Amazon application. It can be described by an Identifier as shown in Example 11.6.5.

Example 11.6.5: Referrer

(Not URL-encoded and with line breaks for readability)
&rfr_id=info:sid/amazon.com

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.6.6.

Example 11.6.6: ContextObject

(Not URL-encoded and with line breaks for readability)
&ctx_id=10_6 &ctx_tim=2003-04-10T17:11:30TZD

(8) OpenURL Keys

The OpenURL Keys for a By-Value OpenURL are shown in Example 11.6.7.

Example 11.6.7: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-10T17:12:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx &url_ctx_val=

(9) By-Value OpenURL

The complete query string for the OpenURL is shown in Example 11.6.8. Note that the values within the ContextObject are double URL-encoded.

Example 11.6.8: By-Value OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0410T17%3A12%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&url_ctx_val=%26ctx_id%3D11_6%26ctx_tim%3D2003-0410T17%253A11%253A30TZD%26rft_id%3Durn%253Aisbn%253A1861004516%26rft_val_fmt%3Dinfo%253Aofi%252Ffmt%253Akev%253Amtx%253Abook%26rft.genre%3Dbook%26rft.aulast%3DDodds%26rft.aufirst%3DDavid%26rft.isbn%3D1861004516%26rft.date%3D2001%26rft.btitle%3DProfessional%2BXML%2Bmeta%2BData%26rfe_id%3Dhttp%253A%252F%252Fwww.amazon.com%252Fexec%252Fobidos%252FASIN%252F1861004516%26req_dat%3D104-0114344639158%26svc_dat%3DaddToCart%26rfr_id%3Dinfo%253Aid%252Famazon.com
```

11.7 Journal, Referenced from a Serials Directory, Inline OpenURL

Ulrich's Serials Directory records the following journal. The record is accessed by Mary Smith via her institution's copy of Ulrich's. She would like to find a list of services concerning this journal, for instance where she can find electronic copies and which libraries hold print copies.

Title: European Journal of Pain

Abbreviate Title: Eur J Pain

Publisher: Harcourt Health Sciences

ISSN: 1090-3801

Accession Number: 14587033

(1) Referent

The Referent is the journal. It could be described by an Identifier and also by metadata, as shown in Example 10.7.1.

Example 11.7.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_id=urn:issn:1090-3801
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal
&rft.genre=journal &rft.issn=1090-3801 &rft.jtitle=European
Journal of Pain &rft.stitle=Eur J Pain

(2) ReferringEntity

The ReferringEntity is the record in Ulrich's. It could be described by Ulrich's-specific private data, as shown in Example 11.7.2.

Example 11.7.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_dat=14587033

(3) Requester

The Requester is Mary Smith. Because she has been authenticated to use her institution's copy of Ulrich's, the Requester is described by an Identifier that is an entry in her institution's LDAP directory, as shown in Example 11.7.3.

Example 11.7.3: Requester

(Not URL-encoded and with line breaks for readability)
&req_id=ldap://ldap.auni.edu/cn=mary_smith

(4) ServiceType

No information about the ServiceType is included in this example. The service Mary wants is the usual service provided by her institution's Resolver.

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the local institution's version of Ulrich's. It may be described by private data as shown in Example 11.7.4.

Example 11.7.4: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/auni.edu:ULRICH

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.7.5.

Example 11.7.5: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_id=10_7 &ctx_tim=2003-04-11T09:35:30TZD

OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.7.6.

Example 11.7.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)

url_ver=Z39.88-2004 &url_tim=2003-04-11T09:36:15TZD

&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

(8) Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.7.7.

Example 11.7.7: Inline OpenURL

(URL-encoded)

url_ver=Z39.88-2004&url_tim=2003-0411T09%3A36%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&ctx_id=10_7&ctx_tim=2003-0411T09%3A35%3A30TZD
&rft_id=urn%3Aissn%3A10903801&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournal&rft.genre=journal&rft.issn=10903801&rft.jtitle=European+Journal+of+Pain
&rft.stitle=Eur+J+Pain&rfe_dat=14587033&req_id=ldap:%2F%2Fldap.auni.edu%2Fcn%3Dmary_smith&rfr_id=info%3Aisi%2F%2Fauni.edu%3AULRICH

11.8 Book, Referenced from a Book, Inline OpenURL

This book: Vergnaud, J.-R. 1985 “Dépendances et niveaux de représentation en syntaxe.”

Amsterdam, Philadelphia: Benjamins is cited in the following book: Chomsky, N. 1995. “The Minimalist Program.” Cambridge, Mass: The MIT Press. ISBN 0262531283

(1) Referent

The Referent is the first book. It could be described by metadata, as shown in Example 11.8.1.

Example 11.8.1: Referent

(Not URL-encoded and with line breaks for readability)
&rft_val_fmt=info:ofi/fmt:kev:mtx:book &rft.genre=book
&rft.aulast=Vergnaud &rft.auinit=J.-R.
&rft.btitle=Dépendances et niveaux de représentation en
syntaxe &rft.date=1985 &rft.pub=Benjamins
&rft.place=Amsterdam, Philadelphia

The title of this book is in French and includes two occurrences of ‘e’ with an acute accent. These characters must be encoded according to the Character Encoding specified for the ContextObject, in this case UTF-8 (see Example 10.8.5 below). The UTF-8 encoding for ‘Latin Small Letter E with Acute’ is ‘0xc3 0xa9’. After URL-encoding this becomes ‘%C3%A9’ (as shown in the complete OpenURL in Example 10.8.7).

(2) ReferringEntity

The ReferringEntity is the second book. It could be described by an Identifier and also by metadata, as shown in Example 11.8.2.

Example 11.8.2: ReferringEntity

(Not URL-encoded and with line breaks for readability)
&rfe_id=urn:isbn:0262531283
&rfe_val_fmt=info:ofi/fmt:kev:mtx:book &rfe.genre=book
&rfe.aulast=Chomsky &rfe.init=N &rfe.btitle=The
Minimalist Program &rfe.isbn=0262531283 &rfe.date=1995
&rfe.pub=The MIT Press &rfe.place=Cambridge, Mass

(3) Requester

No information about the Requester is included in this example.

(4) ServiceType

The Requester would like to see an abstract of the cited book. This can be described by metadata, as shown in Example 11.8.3.

Example 11.8.3: ServiceType

(Not URL-encoded and with line breaks for readability)

&svc_val_fmt=info:ofi/fmt:kev:mtx:sch_svc

&svc.abstract=yes

(5) Resolver

The Resolver is the base URL to which the query string will be sent. It is not included explicitly in the ContextObject.

(6) Referrer

The Referrer is the electronic book application in which the user is reading the second book. It may be described by an Identifier as shown in Example 11.8.4.

Example 11.8.4: Referrer

(Not URL-encoded and with line breaks for readability)

&rfr_id=info:sid/ebookco.com:bookreader

(7) ContextObject

The above Descriptors would be combined into a ContextObject by including the Keys shown in Example 11.8.5.

Example 11.8.5: ContextObject

(Not URL-encoded and with line breaks for readability)

&ctx_ver=Z39.88-2004 &ctx_enc=info:ofi/enc:UTF-8

&ctx_id=10_8 &ctx_tim=2003-04-11T10:08:30TZD

(8) OpenURL Keys

The OpenURL Keys for an Inline OpenURL are shown in Example 11.8.6.

Example 11.8.6: OpenURL Keys

(Not URL-encoded and with line breaks for readability)
url_ver=Z39.88-2004 &url_tim=2003-04-11T10:09:15TZD
&url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx

(9) Inline OpenURL

The complete query string for the OpenURL is shown in Example 11.8.7.

Example 11.8.7: Inline OpenURL

(URL-encoded)

```
url_ver=Z39.88-2004&url_tim=2003-0411T10%3A09%3A15TZD&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Actx
&ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF8&ctx_id=10_8&ctx_tim=2003-0411T10%3A08%3A30TZD&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rft.genre=book&rft.aulast=Vergnaud&rft.auinit=J.R.&rft.btitle=D%27C3%A9pendances+et+niveaux+de+repr%C3%A9sentation+en+syntaxe&rft.date=1985&rft.pub=Benjamins&rft.place=Amsterdam%2C+Philadelphia&rfe_id=urn%3Aisbn%3A0262531283&rfe_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Abook&rfe.genre=book&rfe.aulast=Chomsky&rfe.init=N&rfe.btitle=The+Minimalist+Program&rfe.isbn=0262531283&rfe.date=1995&rfe.pub=The+MIT+Press&rfe.place=Cambridge%2C+Mass&svc_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Asch_svc&svc.abstract=yes&rfr_id=info%3Asid%2Fbookco.com%3Abookreader
```

Annex A

Upgrading to OpenURL version 1.0

At first sight it seems that OpenURL version 1.0 has become over-complicated and more difficult to implement than the original draft OpenURL version 0.1. However, following the San Antonio Level 1 Profile for the scholarly information community, and using an Inline OpenURL it is possible to upgrade current version 0.1 OpenURLs to version 1.0 OpenURLs without too much difficulty. The purpose of much of the extra functionality provided by version 1.0 OpenURL is to enable its generalisation and thus its extension to other communities and application domains. Some of the apparent new items within an OpenURL were, in reality, already being carried in version 0.1 OpenURLs as Private Data. Formalising the method of encoding this currently private information will increase the interoperability of OpenURLs.

A.1 Difference between version 1.0 Inline OpenURL and version 0.1 OpenURL

Taking the example shown in Section 4, a version 0.1 OpenURL could be as in Example A.1.

Example A.1 A version 0.1 OpenURL

(Not URL-encoded and with line breaks for readability)

```
http://example.org/myResolver? sid=myid:mydb &id=doi:10.1126/science.275.5304.1320
&id=pmid:9036860 &genre=article &atitle=Isolation of a common receptor for coxsackie B
&title=Science &aulast=Bergelson &aunit=J &date=1997 &volume=275 &spage=1320 &epage=1323
```

(URL-encoded)

```
http://example.org/myResolver?sid=myid%3Amydb&id=doi%3A10.1126%2Fscien
ce.275.5304.1320&id=pmid%3A9036860&genre=article&atitle=Isolation+of+a+co
mmon+receptor+for+coxsackie+B&title=Science&aulast=Bergelson&aunit=J&d
ate=1997&volume=275&spage=1320&epage=1323
```


A version 1.0 Inline OpenURL for this example could be as in Example A.2.

Example A.2 A version 1.0 Inline OpenURL

(Not URL-encoded and with line breaks for readability)

```
http://example.org/myResolver? url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rft_id=info:sid/myid.com:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:pmid/9036860 &rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article
&rft.atitle=Isolation of a common receptor for coxsackie B &rft.jtitle=Science &rft.aulast=Bergelson
&rft.auinit=J &rft.date=1997 &rft.volume=275 &rft.spage=1320 &rft.epage=1323
```

(URL-encoded)

```
http://example.org/myResolver?url_ver=Z39.882004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rft_id=info%3Asid
%2Fmyid.com%3Amydb&rft_id=info%3Adoi%2F10.1126%2Fscience.275.5304.13
20&rft_id=info%3Apmid%2F9036860&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+receptor+fo
r+coxsackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.date=199
7&rft.volume=275&rft.spage=1320&rft.epage=1323
```

Comparing these two examples it can be seen that the following changes have been made to upgrade the OpenURL from version 0.1 to version 1.0:

- The required Key `url_ver` has been added to indicate the version of the OpenURL.
OpenURLs with no version Key are assumed to be version 0.1
- The Key `url_ctx_fmt` has been added to indicate that the ContextObject Format is KEV.
- The `sid` Key has become the `rft_id` Key and the encoding of the Referrer Identifier has

been altered to follow the required syntax of the 'info:sid/' scheme.

- The id Keys have become rft_id Keys. The encoding of the Identifiers has been altered to use 'info:' Namespace Identifiers.
- The rft_val_fmt Key has been added to indicate that the OpenURL contains By-Value Metadata for a journal-type Referent.
- The metadata Keys have been prefixed by 'rft.' to indicate that the metadata applies to the Referent Entity.
- The metadata Key for the journal has been changed to the preferred form of 'jtitle'.

Both of these OpenURLs contain:

- Referent, described by two Identifiers and also By-Value Metadata
- Referrer. In OpenURL version 0.1 this is the 'sid'.
- Resolver, as a base URL. In a version 1.0 it is also possible to include the Resolver within the ContextObject, but this is optional.

The version 1.0 OpenURL could also contain: ReferringEntity; Requester; and ServiceType. These appear to be new additions. But, in fact, experience has shown that this information is regularly described in the Private Data area of version 0.1 OpenURLs.

A.1.1 Non-text Items

Guidelines for upgrading version 0.1 OpenURLs describing non-text items are given in section [6.4.7.1](#).

A.2 Hybrid OpenURLs

There will be a transition period, of indeterminate length, when applications using OpenURLs are upgrading to version 1.0. This transition period poses a particular problem for Referrers. In order to

continue providing a quality service to their end users they will have to continue supplying version 0.1 OpenURLs until they are certain that all their clients' Resolvers have been upgraded. For a large information provider it may be difficult to know what version of OpenURL is in use by their customers. On the other hand, Referrers are encouraged to upgrade to version 1.0 because of the eventual increased functionality and interoperability this will provide.

A possible solution to this dilemma is for Referrers to supply hybrid OpenURLs that contain both version 1.0 and version 0.1 Keys where these differ. It is expected that OpenURL Resolvers will deal gracefully with foreign Keys that they do not understand by ignoring them. Example A.3 shows a hybrid OpenURL built from the above examples.

Example A.3 A Hybrid OpenURL

(Not URL-encoded and with line breaks for readability)

```
http://example.org/myResolver?url_ver=Z39.88-2004 &url_ctx_fmt=info:ofi/fmt:kev:mtx:ctx
&rfr_id=info:sid/myid.com:mydb &sid=myid:mydb &rft_id=info:doi/10.1126/science.275.5304.1320
&rft_id=info:ofi/psid:9036860 &id=doi:10.1126/science.275.5304.1320 &id=psid:9036860
&rft_val_fmt=info:ofi/fmt:kev:mtx:journal &rft.genre=article &rft.atitle=Isolation of a common
receptor for coxsackie B &rft.jtitle=Science &rft.aualast=Bergelson &rft.auinit=J &rft.date=1997
&rft.volume=275 &rft.spage=1320 &rft.epage=1323&genre=article &atitle=Isolation of a common
receptor for coxsackie B &title=Science &aualast=Bergelson &auinit=J &date=1997 &volume=275
&spage=1320 &epage=1323
```

(URL-encoded)

```
http://example.org/myResolver?url_ver=Z39.88-2004&url_ctx_fmt=info%3Aofi%2Ffmt%3Akev%3A
mtx%3Actx&rfr_id=info%3Asid
%2Fmyid.com%3Amydb&sid=myid%3Amydb&rft_id=info%3Adoi%2F10.1126%2F
```

science.275.5304.1320&rft_id=info%3Apmid%2F9036860&id=doi%3A10.1126%2F
science.275.5304.1320&id=pmid%3A9036860&rft_val_fmt=info%3Aofi%2Ffmt%3
Akev%3Amtx%3Ajournal&rft.genre=article&rft.atitle=Isolation+of+a+common+re
ceptor+for+coxsackie+B&rft.jtitle=Science&rft.aulast=Bergelson&rft.auinit=J&rft.
date=1997&rft.volume=275&rft.spage=1320&rft.epage=1323&genre=article&atitle
=Isolation+of+a+common+receptor+for+coxsackie+B&title=Science&aulast=Ber
gelson&auinit=J&date=1997&volume=275&spage=1320&epage=1323

Annex B

URL Considerations

B.1 Length of HTTP GET URLs

Transport techniques based on HTTP GET are subject to length limitations on the GET URI. The OpenURL Standard does not place any a priori limit on the length of an OpenURL. However, OpenURL Resolvers must be able to accept OpenURLs as long as 255 bytes after encoding and should be able to accept OpenURLs as long as 2048 bytes. Implementers planning to store OpenURLs in databases for E-Res or similar systems should anticipate very long URL strings and should set the variable length to an appropriate value.) HTTP GET OpenURLs longer than 2048 bytes do not work in Microsoft Internet Explorer, so long OpenURLs are better sent over HTTP POST.

B.2 Foreign Keys

Foreign keys are any keys that are not OpenURL keys, KEV ContextObject Keys, or KEV Metadata keys. Foreign keys have no meaning assigned by the OpenURL Framework.

B.3 URL Encoding

URL Encoding and Decoding of HTTP GET and POST querystring values prevents the misinterpretation of special characters occurring in these values.

To form an Encoded Value from a Value, a procedure called URL encoding is used:

5. The alphanumeric characters “a” through “z”, “A” through “Z”, and “0” through “9” remain unchanged.
6. The special characters “.”, “-”, “*”, and “_” remain unchanged.
7. The space character “ ” is replaced with a plus sign “+” or the character string “%20” (quotes not included).
8. All other characters are unsafe. They are first converted into one or more bytes using the UTF-8

encoding method (or another encoding if specified by the ContextObject Format). Then, each byte is represented by the 3-byte string “%xy”, where xy is the two-digit hexadecimal representation of the byte.

B.4 URL Decoding

To form a Value from an Encoded Value, a procedure called URL decoding is used. It reverses the URL encoding procedure:

4. The plus sign “+” is replaced by space “ ”.
5. Each instance of a 3-byte string “%xy”, where xy is a hexadecimal number, is replaced with the corresponding byte.
6. The bytes are converted to Unicode characters using UTF-8, unless otherwise specified by a ContextObject Format.

B.5 Parsing of HTTP Querystrings

Upon receiving an OpenURL request, the Resolver may parse and URL-decode the querystring into a set of Key/Encoded-Value pairs. Depending on the type of OpenURL Transport, an OpenURL Resolver may encounter three types of keys: OpenURL keys, KEV ContextObject keys, and foreign keys:

4. All OpenURL Transports use OpenURL keys (see Section 7). They have a prefix ‘url_’.
5. In addition to the OpenURL keys, the Inline OpenURL Transport also uses keys from the KEV ContextObject Format (see Sections 5 and 6.1). These keys are:
 - Administrative keys (prefixed by ‘ctx_’)
 - Entity keys (prefixed by ‘rft_’, ‘rfe_’, ‘req_’, ‘rfr_’, ‘res_’, or ‘svc_’).
 - Keys from the KEV Metadata Formats (prefixed by ‘rft.’, ‘rfe.’, ‘req.’, ‘rfr.’, ‘res.’, or ‘svc.’).
6. Foreign keys (see Section C.2).

Once keys and values have been extracted from the querystring, the acquisition of the ContextObject from the querystring may proceed.

Annex C

Security Considerations and Precautions

C.1 General Security Considerations

By-Reference Transport, either of Context object or entities within ContextObjects, introduces certain security risks. In particular, the ability for a request to specify arbitrary network-locations from which the Resolver is expected to fetch documents raises particular concerns.

OpenURL 1.0 implementers must be aware of several possible attacks that could compromise security.

4. When an OpenURL Resolver has privileged access to resources, such as IP-authenticated licensed content, it is possible that an attacker could hijack this access by sending OpenURL with by-reference URLs. Resolvers should take care not to expose licensed metadata by returning the resulting metadata to unprivileged users.
5. In a cross-site scripting attack, crafted data values are used to insert code into a webpage seen by a user. This code can be used to insert foreign content or steal personal data, such as authentication data or passwords from a user's "cookie" file.
6. In a vortex or maelstrom attack, By-Reference URLs and the data they return might be constructed in such a way that an endless series of requests is generated. Where possible, Resolvers may need to recognize protocols and services which that might generate such endless loops and prevent their propagation.

C.2 Precautions for OpenURL Resolvers

By design, there are no requirements on the behavior of OpenURL resolving systems. However, in recognition that a network of OpenURL Resolvers must perform robustly and securely even in the presence of potentially malicious attack or inadvertent misuse, this Standard recommends that Resolvers take precautions to avoid behaviors that might be exploited to destabilize a digital

information environment.

An example of such a precaution is the following:

3. The OpenURL Resolver does not fetch metadata, whether for By-Reference Metadata or for By-Reference Transport of ContextObjects, from URLs that can be identified as OpenURLs. In addition, if a network-location URL is redirected to a URL that can be identified as an OpenURL, the Resolver does not follow the redirect.
4. The OpenURL Resolver does not fetch metadata from a network location specified in an OpenURL with an invalid version string.

1. 參考資料

ANSI/NISO Z39.88-2004. The OpenURL Framework for Context-Sensitive Services Registry for the OpenURL Framework. [http://www.openurl.info/registry/](http://www.openurl.info/registry/OpenURL Syntax Description, Draft version 0.1.)
<http://www.openurl.info/docs/pdf/openurl-01.pdf>
Dublin Core Community Profile (DCCP) for Simple Dublin Core in KEV.
<http://www.openurl.info/docs/pdf/DublinCoreProfile.pdf>

2. 爭議事項

無

3. 英中名詞對照表

	-A-	
	-B-	
	-C-	
Community Profile		社群剖繪
ContextObject		情境物件
	-D-	
Descriptor		描述符
Digital Object Identifier , DOI		數位物件識別符
Dublin Core		都柏林核心集
	-E-	
Entity		個體
	-F-	
	-G-	
	-H-	
	-I-	
Identifier Descriptor		識別符描述符
	-J-	
	-K-	
	-L-	
	-M-	
Machine Readable		機讀
	-N-	
National Bibliographic Number, NBN		美國國家書目號

	-O-	
	-P-	
	-Q-	
	-R-	
Referrer Identifier		參考者識別符
Referent		參考對象
Referrer		參考者
ReferringEntity		參考個體
Registry Identifier		登錄識別符
Requester		請求者
Representation		表示
Resolver		解析器
	-S-	
ServiceType		服務型式

	-T-	
	-U-	
	-V-	
	-W-	
	-X-	
	-Y-	
	-Z-	

4. 中英名詞對照表

情境物件	ContextObject
表示	Representation
服務型式	ServiceType
社群剖繪	Community Profile
美國國家書目號	National Bibliographic Number, NBN
參考者	Referrer
參考者識別符	Referrer Identifier
參考個體	ReferringEntity
參考對象	Referent
描述符	Descriptor
登錄識別符	Registry Identifier
解析器	Resolver
個體	Entity
數位物件識別符	Digital Object Identifier , DOI
請求者	Requester

識別符描述符

Identifier Descriptor