



後設資料發展趨勢與數位典藏 的應用

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大綱

- 全球發展現況
 - 文獻分析
 - 其他
- 全球發展趨勢之分析
- 數位典藏國家型科技計畫(National Digital Archives Program in Taiwan, NDAP)後設資料應用現況及其分析
- 研究發現
- 結語與建議



全球發展現況－文獻分析¹

- **Dempsey, L. & Heery, R. (1998). Metadata: a current view of practice and issues. *Journal of Documentation*, 54(2), 145-172.**
- **陳雪華. (民86). 網路資源組織與Metadata之發展. *圖書館學刊*, 12, 頁19-37.**
<http://www.lis.ntu.edu.tw/main/journal/o12-2.pdf>
- **Gilliland-Swetland, A. (2000). Introduction to metadata: Setting the stage.**
http://www.getty.edu/research/conducting_research/standards/intrometadata/pdf/swetland.pdf
- **Turner, J.M., Moal, V., & Desnoyers, J. (2004). MetaMap: Acronym index (Ver. 1.2).**
<http://mapageweb.umontreal.ca/turner/meta/english/indexacroeng.html>



全球發展現況—文獻分析²

- **Dempsey and Heery (1998)** 依據下列要點進行**Metadata**分析
 - 使用環境(environment of use)
 - 功能(function)
 - 產生(creation)
 - 結構(designation)
 - 相關的查詢協定(associated search protocols)
 - 況態(status)



全球發展現況－文獻分析³

	Band 1	Band 2	Band 3
使用環境	Global Internet search services	Selective Internet search services; directory service	Descriptions of scholarly collections; other importance repositories
功能	Location	Discovery, location, selection	Location, selection, evaluation, analysis, documentation



全球發展現況－文獻分析⁴

	Band 1	Band 2	Band 3
產生	Robot generated	Robot plus manual input	Intellectual expertise required, often involving dedicated 'information' staff
結構	Unstructured	Attribute value pairs; limited structure	Subfields; qualifiers, structured mark up



全球發展現況－文獻分析⁵

	Band 1	Band 2	Band 3
相關查詢協定	http with CGI form interface	http with CGI form interface; directory service protocols (WHOIS++, LDAP) with query routing (CIP)	Z39.50 SGML browsers and querying
狀態	Proprietary	Emerging Internet Standards	Domain specific standardisation



全球發展現況－文獻分析⁶

- 陳雪華教授(民86)將Metadata區分為
 - － 早已普遍使用－MARC, PICA
 - － 描述科技文獻－BibTex, EELS, EEVL, RFC 1807
 - － 描述人文及社會科學資源－ICPSR SGML Codebook Initiative, TEI Headers
 - － 描述政府資訊－GILS
 - － 描述地理空間性資源－CSDGM/FGDC
 - － 描述博物館藏品與檔案特藏－CDWA, CIMI, EAD
 - － 描述大量網路資源－Dublin Core(DC), IAFA/WHOIS++ Templates, LDIF, SOIF, URCs
 - － 其他－Warwick Framework



全球發展現況－文獻分析⁷

- **Gilliland-Swetland (2000)將Metadata區分為**
 - **管理(administrative)**
 - **描述(descriptive)**
 - **長期保存(preservation)**
 - **技術(technical)**
 - **應用(use)**





全球發展現況－文獻分析⁸

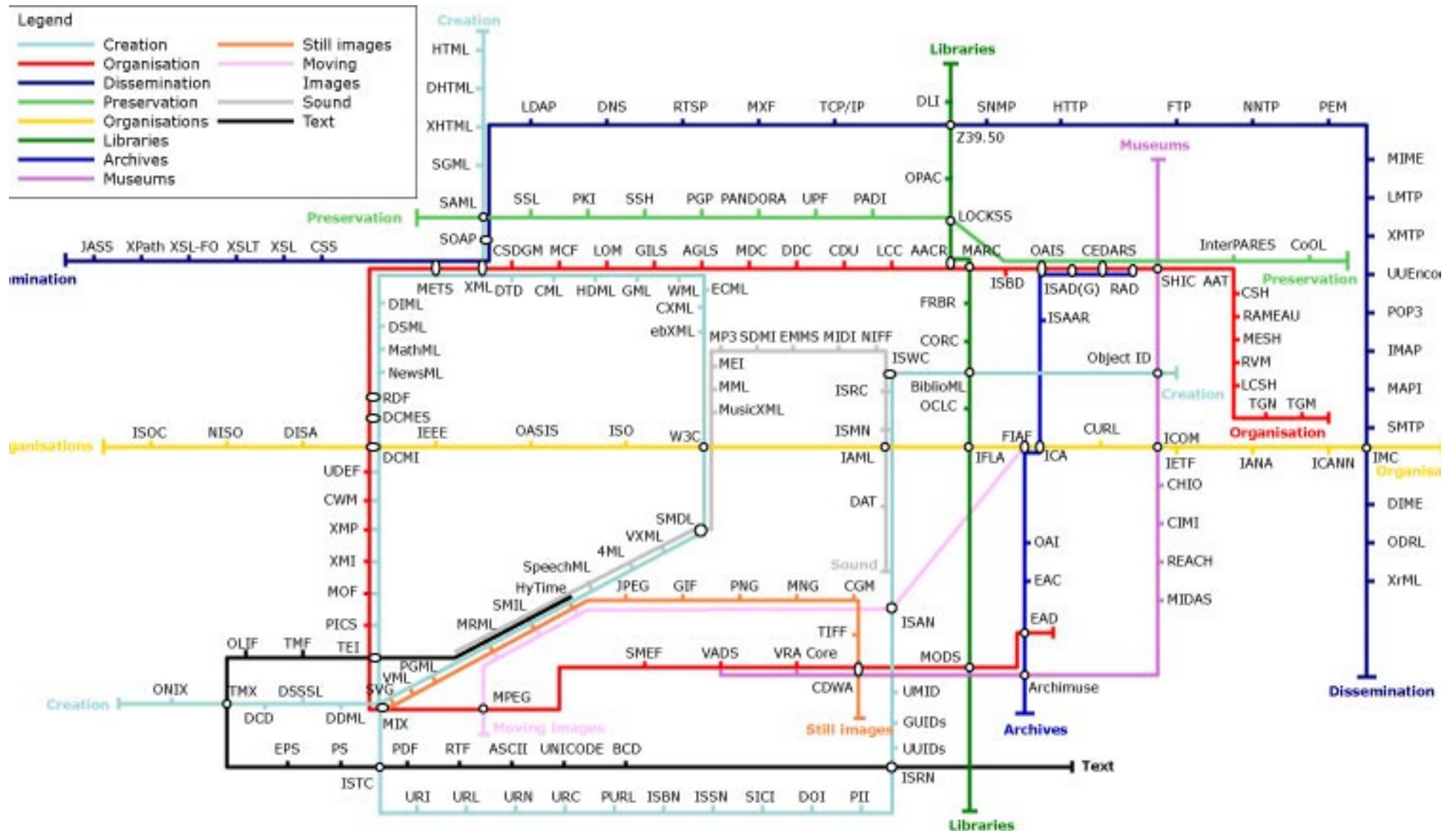
- **Gilliland-Swetland (2000)將Metadata屬性/特質區分為**
 - **Metadata來源－internal (如file names and header information) vs. external (如cataloging recs, legal information)**
 - **產生方式－automatic vs. manual**
 - **性質－creator vs. expert**
 - **狀態－static vs. dynamic, long-term vs. short-term**
 - **結構－structured vs. unstructured**
 - **語意－controlled vs. uncontrolled**
 - **層次－collection vs. item**



全球發展現況－文獻分析⁹

- **MetaMap將Metadata區分為**
 - － 功能－產生(creation), 組織(organisation), 散播(dissemination)與長期保存(preservation)
 - － 社群－圖書館, 博物館, 檔案館等
 - － 檔案類型－圖片(still images), 動畫(moving images), 聲音(sound), 文字(text)
 - － 機構組織－ISOC, NISO, DISA, DCMI, IEEE, OASIS, ISO, W3C, IAML, IFLA, FIAF, ICA, CURL, ICOM, IANA, ICANN, IMC

全球發展現況—文獻分析¹⁰





全球發展現況－其他

- **Interpretive Rules, Vocabularies and RDF**
- **Preservation & Rights Management**
- **eLearning/LOM, E-Government**
- **CLD Metadata**
- **FRBR**
- **XML DTD and Schema**
- **OAI-PMH**
- **MDRs**
- **Application Profile**



Application Profile¹

Simple description

Rich description

More general

More specific



DC, VRA, etc.

Qualifier
Simplification

CDWA, EAD, etc.



Less cost

More cost

Less structured

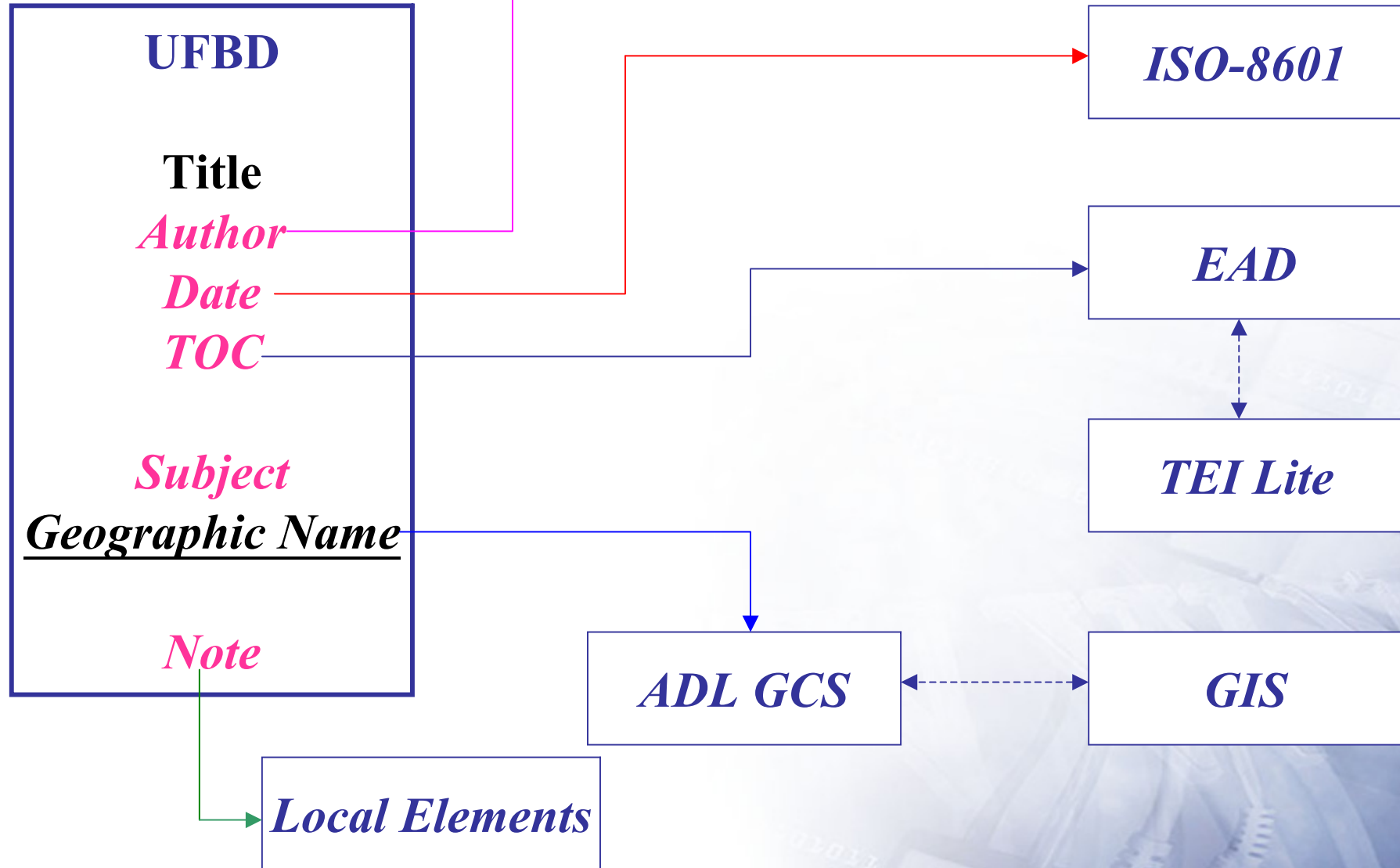
More structured

Less value-added

More value-added



Application Profile²





全球發展趨勢之分析

- **Functionality** — Resources Discovery, Description, Administrative, Preservation, & Rights
- **Domain** — eLearning/LOM, E-Government, & Science
- **Community** — Library, Museum, Archives, & Internet Community
- **Level** — Collection/CLD, & Full-text/TEI Lite
- **Application** — Application Profile
- **Conceptual Model** — FRBR, CIDOC CRM, Records Continuum Model, OAIS Reference Model, RDF Model
- **Semantics** — Rules, Vocabularies and RDF Schema
- **Interchange** — XML DTD and Schema
- **Protocol** — OAI-PMH, SRW/SRU
- **Framework** — Warwick Framework, RDF
- **Registration** — MDRs



MAAT NDAP後設資料應用現況及其分析¹

- **CDWA AAT**
- **CIDOC Ethno Core Data Standards**
- **VRA Core Categories**
- **EAD**
- **MARC21**
- **FRBR-based Metadata (ECHO Project)**
- **HISPID**
- **SPECIES 2000**
- **Darwin Core**
- **CSDGM**
- **LOM**
- **ECML, and XrML**
- **OLAC**
- **DC**



MAAT NDAP後設資料應用現況及其分析²

*Community
Layer*

Library, Archives, Museum, Herbarium

*Data Type
Layer*

**Rubbing, Rare Book, Photo, Audio, Film
Specimen, Archive, Field Report, etc.**

*Discipline
Layer*

**Art, Archaeology, History, Ethnology
Linguistics, Biodiversity, Genomics, etc.**

*Function
Layer*

**Resource Discovery, Description,
Exhibition, Management, E-Commerce**



MAAT NDAP後設資料應用現況及其分析³

Generic Layer
Dublin Core



Domain-specific Layer
**CDWA, EAD, MARC21,
and so on.**

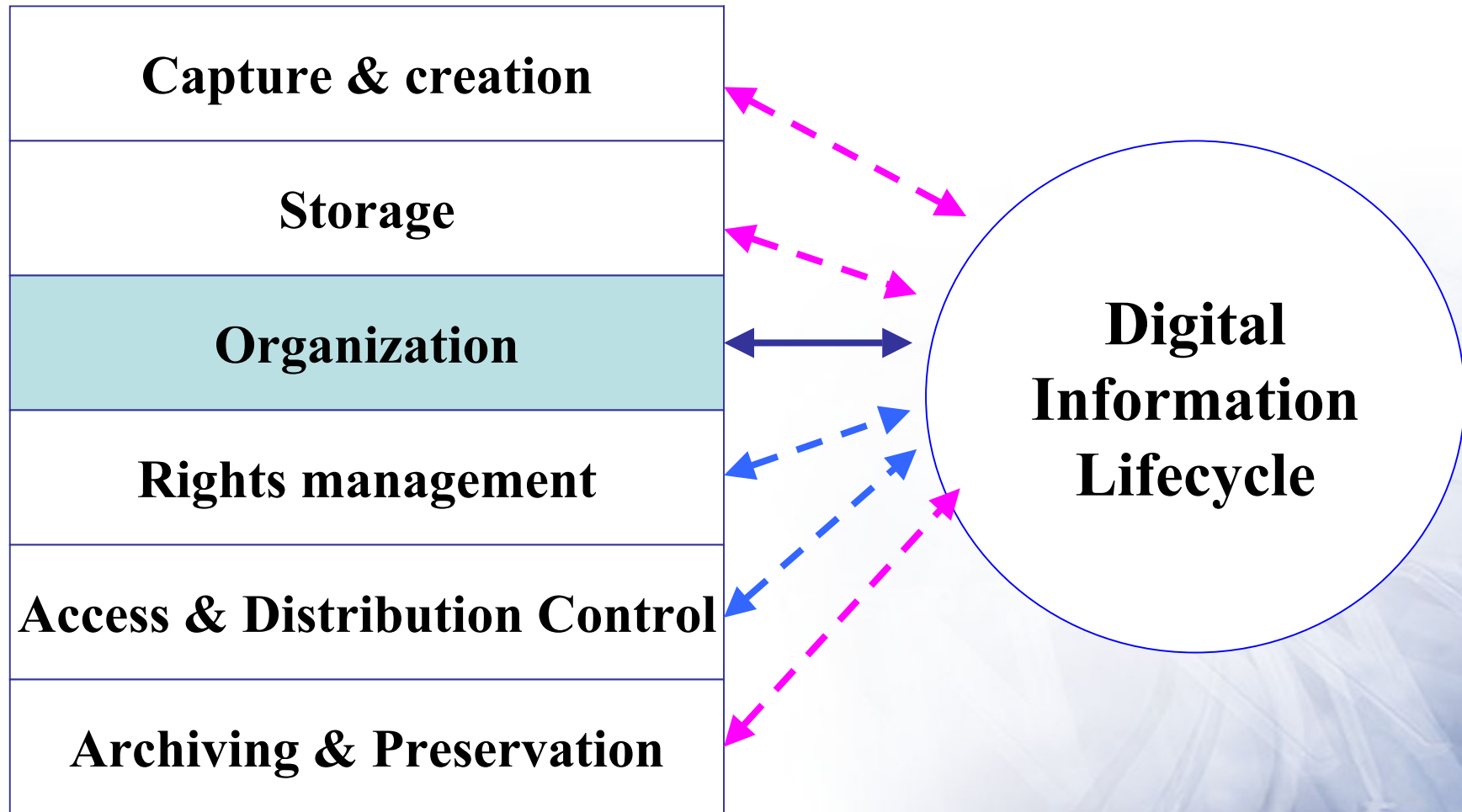


**For the public, and
a base for cross-domain
interoperability.**

**For a discipline-oriented,
in-depth, and precise search.**

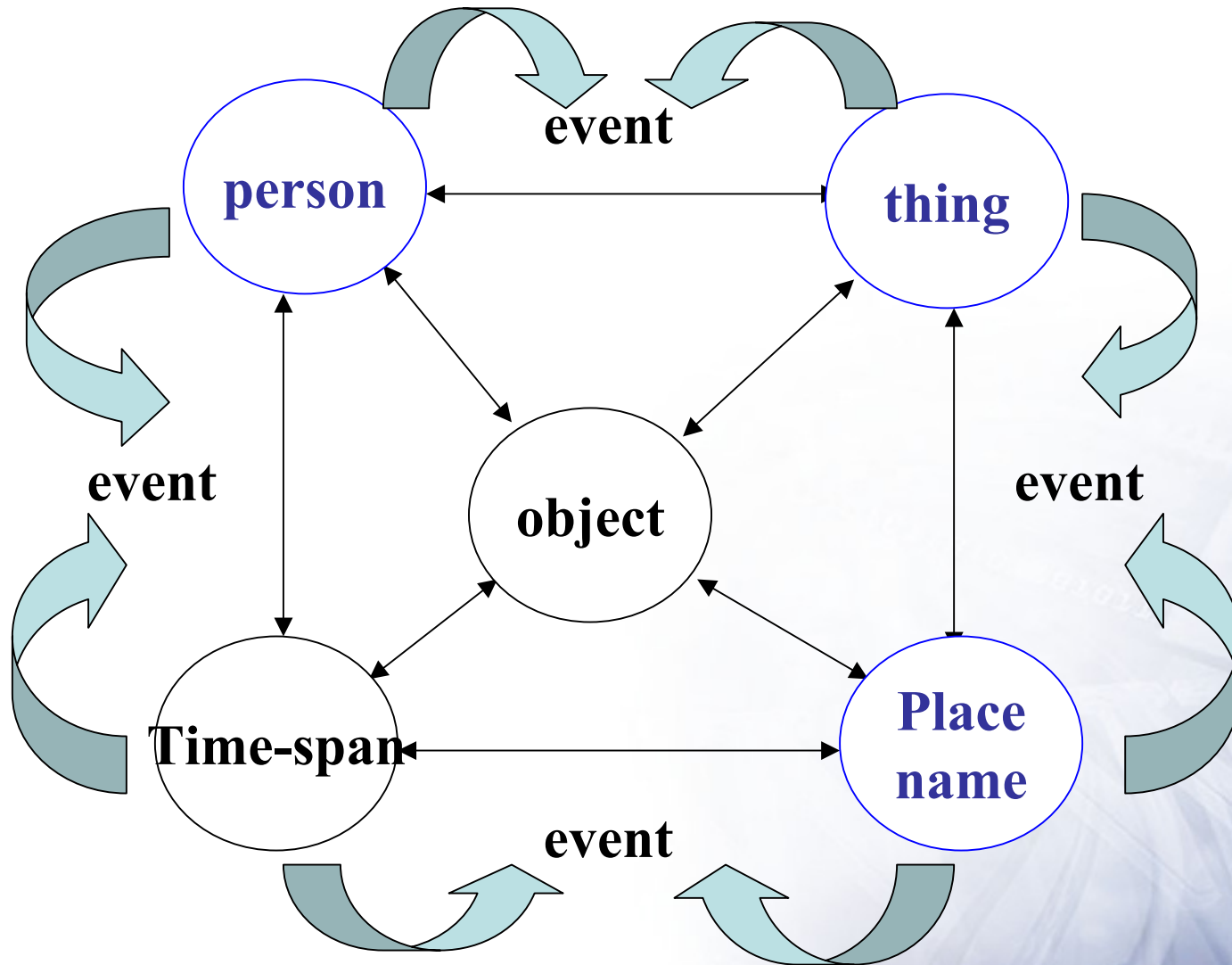


MAAT NDAP後設資料應用現況及其分析⁴





NDAP後設資料應用現況及其分析⁵





研究發現

- 多元化—資料、社群、學科與功能
 - 資料
 - 社群—標本館
 - 學科—生物多樣性
 - 功能—電子商務
- 整合化—多種標準的整合應用
- 應用領域—電子政府



結語與建議

- 應用領域(domain) — eLearning, & E-Commerce
- 類型(attribute) — 時間與事件
- 功能(function) — 長久保存(long-term preservation and archiving)
- 產生方式(creation) — 從人工轉換至半自動或全自動
- 描述深度(level) — Collection — Item — Full-text
- 語意(semantics) — 描述規則與索引典
- 資訊交換與共享(interchange) — XML Schema
- 多種標準的整合應用



縮寫字對照表¹

- AAT: Art & Architecture Thesaurus
- CDWA: Categories for the Description of Works of Art
- CIMI: Computer Interchange of Museum Information
- CLD: Collection Level Description
- CSDGM: Content Standards for Digital Geospatial Metadata
- CURL: Consortium of University Research Libraries
- DCMI: Dublin Core Metadata Initiative
- DISA: Data Interchange Standards Association
- EAD: Encoded Archival Description
- ECML: Electronic Commerce Modeling Language
- EELS: Engineering Electronic Library



縮寫字對照表²

- EEVL: Edinburgh Engineering Virtual Library
- FGDC: Federal Geographic Data Committee FIAF: International Federation of Film Archives
- FRBR: Functional Requirements for Bibliographic Records
- GCS: Gazetteer Content Standard
- GILS: Government Information Locator Service
- HISPID: Herbarium Information Standards and Protocols
- IAFA: Internet Anonymous FTP Archives
- IAML: International Association of Music Libraries
- IANA: Internet Assigned Number Authority
- ICA: International Council of Archives
- ICANN: Internet Corporation for Assigned Names and Numbers
- ICOM: International Council of Museums



縮寫字對照表³

- ICPSR: Inter-university Consortium for Political and Social Research
- IFLA: International Federation of Library Associations
- IMC: Internet Mail Consortium
- ISOC: Internet Society
- LDAP: Lightweight Directory Access Protocol
- LDIF: LDAP Data Interchange Format
- LOM: Learning Object Metadata
- MARC: Machine-Readable Catalogue
- MDRs: Metadata Registries
- OAI-PMH: Open Archives Initiative-Protocol for Metadata Harvesting
- OAIS: Open Archival Information System
- OASIS: Organization for the Advancement of Structured Information Standards



縮寫字對照表⁴

- OLAC: Open Language Archives Community
- RDF: Resource Description Framework
- SGML: Standard Generalized Markup Language
- SOIF: Summary Object Interchange Format
- TEI: Text Encoding Initiative
- UFBD: USMARC for Bibliographic Data
- URC: Uniform Resource Characteristics
- VRA: Visual Resources Association
- XrML: Extensible Rights Markup Language
- XML: eXtensible Markup Language



報告完畢，敬請賜教與指正！