

Dublin Core at the National Library Board Singapore

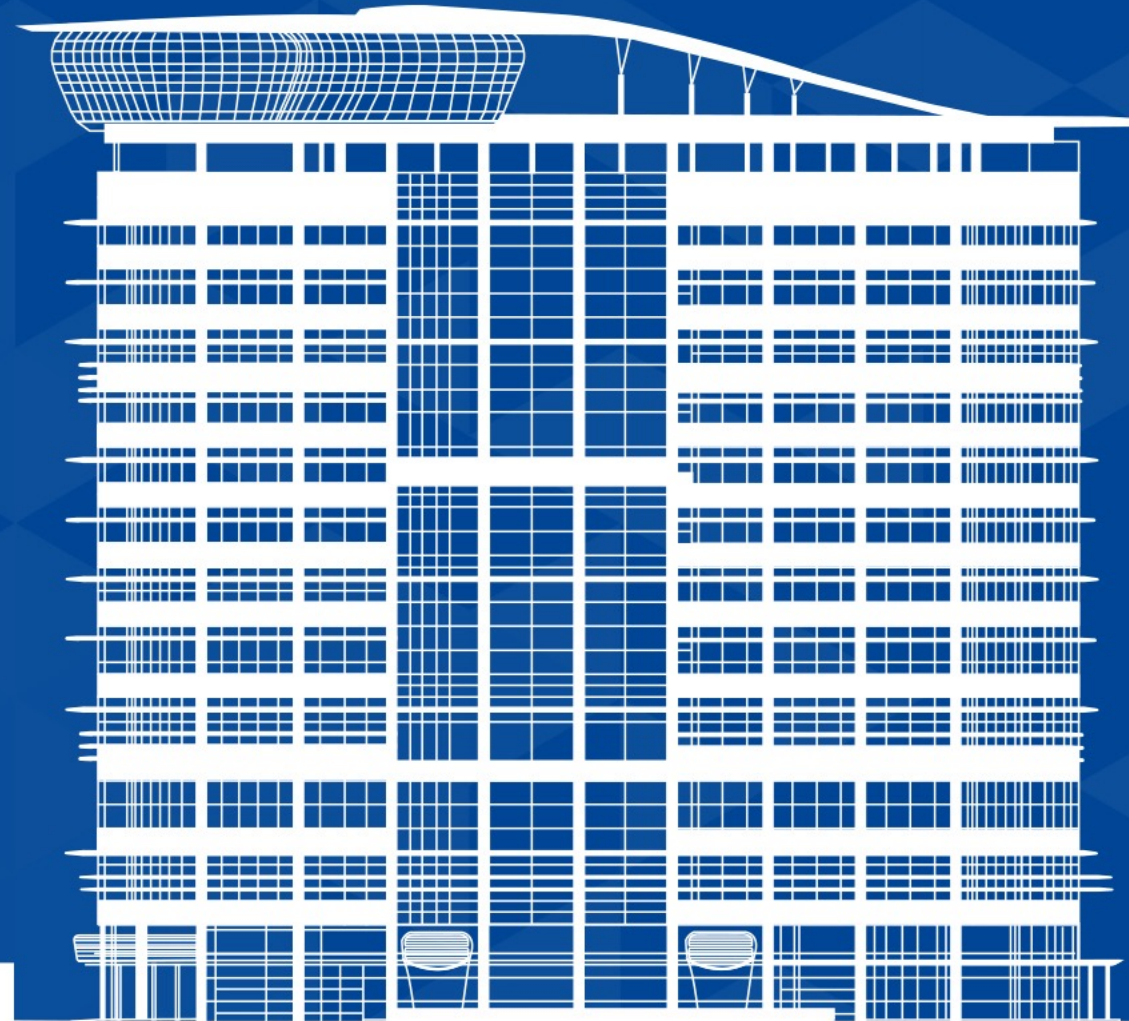
Ms Linnet NG

Librarian

Resource Discovery & Management

National Library Board

15 October 2021



National Library Board
Singapore



AGENDA

- Introducing NLB
- Use of DC within NLB – NLB Application Profile@work
- Collaboration with libraries and public agencies
- DC in Linked Data and future plans

WHO ARE WE

- National Library Board Singapore oversees the Public Libraries, National Library and National Archives



Public Libraries

- Network of 27 Libraries
- Reading Programmes and Initiatives
- Programmes and Exhibitions targeted at Singapore communities



National Library

- Preserving Singapore's Print and Literary Heritage, and Intellectual memory
- Reference Collections
- Legal Deposit (including electronic)



National Archives

- Custodian of Singapore's Collective Memory
- Responsible for Collection, Preservation and Management of Singapore's Public and Private Archival Records
- Promotes Public Interest in our Nation's History and Heritage

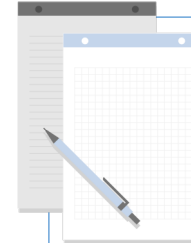
WHO ARE WE

- Through the years, NLB has continually advanced ourselves through systematically rethinking our roles and following through with plans based on our strategic blueprints

	L2000	L2010	L2020	L2025
Strategic Blueprint	To deliver a world class library system which is convenient, accessible and useful to the people of Singapore	Develop digital infrastructure for people to have access to information and be connected	Nurture readers for life, foster learning communities, build a knowledgeable nation	To build a Future Economy, a Smart Nation and a Strong Singapore Society
Focus	<ul style="list-style-type: none"> A world-class library system for a learning nation Our public libraries in the heart of the community 	<ul style="list-style-type: none"> 24/7 Access to information A vibrant network of public libraries that are transformed into social learning spaces Develop Asia-centric content especially pertaining to Singapore and S.E.A 	<ul style="list-style-type: none"> A digital library providing content anytime, anywhere Building libraries and archives of the future Curate enriching Singapore content Promote reading for a well read nation <div> 2016 <ul style="list-style-type: none"> Libraries of the Future Masterplan National Reading Movement National Patrimony Masterplan </div>	<ul style="list-style-type: none"> Be a standard bearer for digital government and provide innovative services and user experiences for the nation To contribute to economic goals and aspirations by creating quality content and inspiring spaces for a learning nation <div> <ul style="list-style-type: none"> Libraries and Archives Blueprint 2021-2025 (LAB25) </div>

FORMALISATION OF DC WITHIN NLB

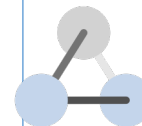
- NLB adapted the DC-Libraries Application Profile which was implemented in 2004.
- Review of the document, which is referred to as **NLB-AP**, is done once in two years



Guide to staff on how to create metadata for digital collections



Ensures consistency in application of cataloguing standards



Serves as basis for crosswalk from other metadata standards

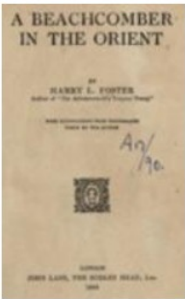
USE OF DC WITHIN NLB

- A cataloguing editor was developed in-house in 2004, for data input into the Content Management System
- Used for cataloguing of all digital objects such as ebooks, images, digitised manuscripts and archived websites

Example of a record created using NLB-AP

A beachcomber in the Orient

The writer recounts his experiences as he travelled by land and water through Indochina, Siam, the Malay States, Singapore, the Philippines, Japan, China and Hong Kong. His narrative includes descriptions of places and people, incidents and impressions and snippets of conversations.



- Read
- Download
- Check availability in our libraries

Title
Creator
Subject

A beachcomber in the Orient
Foster, Harry L. (Harry La Tourette), 1894-1932
Geography>>Geographical Areas and Countries
East Asia--Description and travel
Southeast Asia--Description and travel
Sports, recreation and travel>>Travel>>Asia
Sports, recreation and travel>>Travel>>Asia>>Southeast Asia
Geographical areas and countries

Publisher
Digital Description
Table of Contents

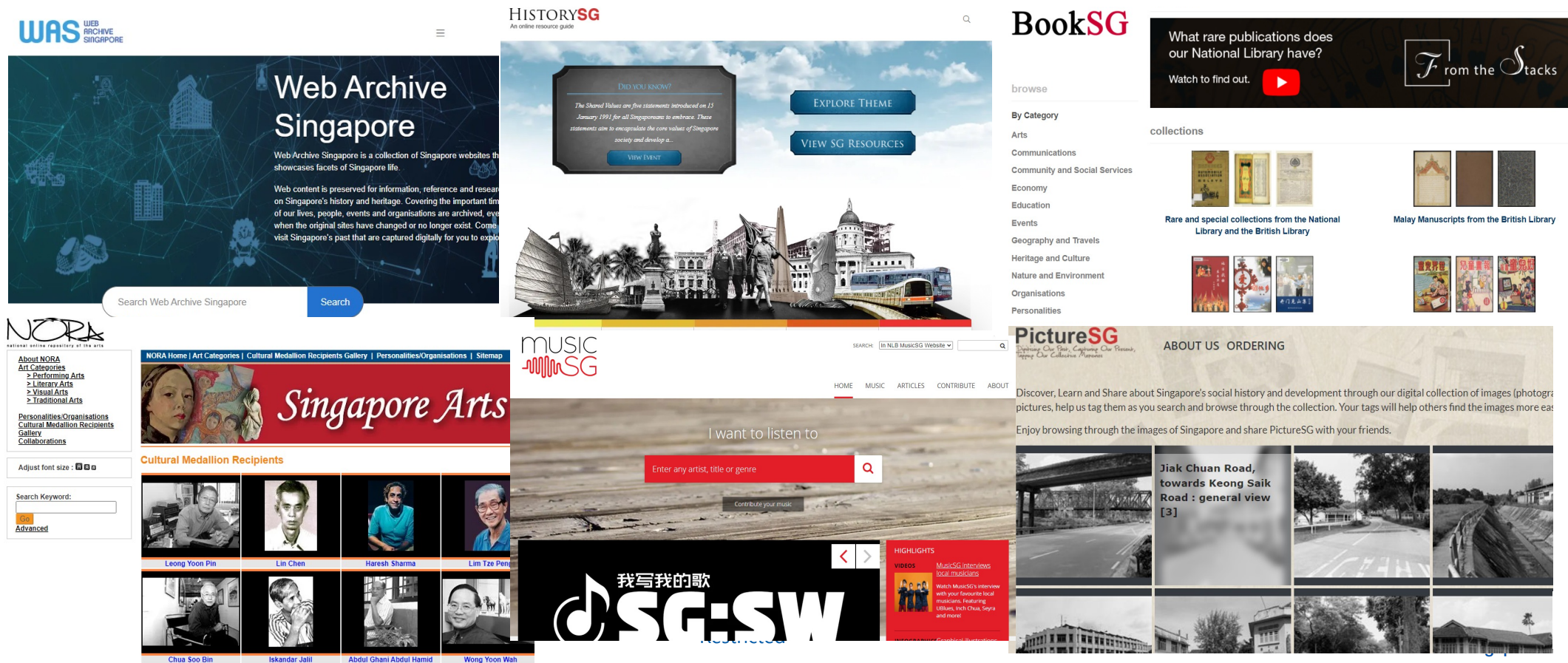
J. Lane, Bodley Head, 1923
application/pdf, 44153 KB, 502 p. : ill.
ch. 1. The fool-killer strikes
ch. 2. In the Paris of the jungle
ch. 3. Up the Mekong to Phnom Penh
ch. 4. Through Cambodia by sampan
ch. 5. Hitting the trail with Henri
ch. 6. Overland through Siam
ch. 7. The city of the great white angels
ch. 8. By freight car to the Malay States
ch. 9. On the beach, in Singapore
ch. 10. In a waterfront grog-shop
ch. 11. By cargo boat to the Philippines
ch. 12. A tourist in Japan
ch. 13. Sing-song and opera in Shanghai
ch. 14. The nightmare city of Canton
ch. 15. Back to Hong Kong.

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USE OF DC WITHIN NLB

- There are currently six microsites accessible by public that is using the NLB-AP covering:
 - Websites (WAS)
 - Historical content (HistorySG)
 - Digitised and digital books (BookSG)
 - Performing, literary and visual arts (NORA)
 - Musical content such as scores, lyrics, etc (MusicSG)
 - Images, photographs and artworks (PictureSG)



NLB'S INTEGRATED SEARCH SERVICE - ONESEARCH

- OneSearch is an integrated search service launched in 2014 and is Singapore's first search platform for seamless discovery of our Galleries, Libraries, Archives & Museums (GLAM) materials
- Since then, more libraries and institutions have joined OneSearch to improve their resource discoverability

With OneSearch, users only search once

Display of search results

Facets extracted from NLB-AP

Bento-boxes

Start your search

Search

Advanced Search

One Search, many sources.



Books



Magazines & Articles



Audiovisuals



Images



Newspapers



Records & Papers



Websites



Physical Objects



eJournals

Refine search

Type

Book

845

Electronic Book

5

Digitised Book

4

Collection

ISEAS Library

4

Retro

4

Singapore Collection

4

National Gallery Singapore

3

Subject

Publisher

Creator

Series Title

Language

Books

Showing 1 - 10 of 854 record(s)

Relevance



Images at the margins : a collection of Kuo Pao Kun's plays / Kuo Pao Kun.

Book, Kuo, Pao Kun, 1939-2002. http://id.loc.gov/authorities/names/n98002395. http://viaf.org/viaf/18989888, 2000. F201112hc. PPABOX85.



Kuo Pao Kun [ephemera]. A4, V1.

Book, Kuo, Pao Kun, 1939-2002. 1939-2002. http://id.loc.gov/authorities/names/n98002395. http://viaf.org/viaf/18989888, 19---. Contains a collection of souvenir publications, programmes, brochures and pamphlets pertaining to this ...



Two plays by Kuo Pao Kun : Descendants of the eunuch admiral and The spirits play / edited by C.J.W.-L. Wee and Lee Chee Keng.

Book, Kuo, Pao Kun, 1939-2002. http://id.loc.gov/authorities/names/n98002395. http://viaf.org/viaf/18989888, 2003. Donated by Mrs Hedwig Anuar, 2016 (B29242434H) Zhenghe.



Descendants of the eunuch admiral ; and, The spirits play : two plays / by Kuo Pao Kun ; edited by C.J.W.-L. Wee and Lee Chee Keng.

Book, Kuo, Pao Kun, 1939-2002, c2003. Includes bibliographical references.

Magazines & Articles

15 record(s) found

Audiovisuals

75 record(s) found

Images

34 record(s) found

Newspapers

2,375 record(s) found

Records & Papers

135 record(s) found

Websites

2 record(s) found

Physical Objects

No results found.

eJournals

74 record(s) found

Contributing Agencies



NLB

National Library Board
Singapore



National Library Board



NUS
Libraries



YUSOF ISHAK
INSTITUTE

HARMONISING OF METADATA ACROSS GLAMs

Different Cataloguing Standards used

- MARC21 to describe textual/physical collection – used by libraries
- International Standard Archival Description (ISAD-G)—used by archives
- Categories for Description of Works of Art (CDWA)—used by museums

NLB adopted Dublin Core as the crosswalk standard

- Source schemas are aligned by converting them to Dublin Core
- Vocabularies were mapped in order to standardise terms

CDWA to NLB-AP

CDWA	Dublin Core
Permalink	dcterms:identifier
Object name title	dcterms:title
Credit Line	dcterms:provenance xsi:type="nlbterms:sourceOfAcquisition"
Artist/ Participant	dcterms:creator
Accession no.	dcterms:source xsi:type="nlbterms:accessionNo"
Label text	dcterms:description
Dating	dcterms:created
Geographic assoc	dcterms:coverage
Container	OneSearch container
Category (Object Type)	dcterms:type
Subject	dcterms:subject

Uncontrolled Term (Object Type)	Controlled Term
Installations	Installation Art
Other metals	Metalwork
Bronze	Bronzework
Silver	Silverwork
Garment & Accessories	Costume
Implements & Tools	Cultural artefact

Standardisation of Object Types

ISAD(G) to NLB-AP

ISAD (G)	Dublin Core
Audio Visual and Sound Recordings	NLB core data elements
Type	dcterms:type
audiovisual recording, sound recording	
Creating Agency/Creator	dcterms:creator
Programme Title	dcterms:title
Record Date	dcterms:created
Synopsis	dcterms:abstract
Empty	dcterms:identifier
Reference Code/Accession Number	dcterms:identifier
Empty	dcterms:format
Empty	dcterms:format
Source	dcterms:provenance
Conditions Governing Access	dcterms:accessRights
Empty	dcterms:alternative
Empty	marcel:Sneaker (dcterms:contributor)
fonds	dcterms:isPartOf xsi:type="nlbterms:fonds"
series	dcterms:isPartOf xsi:type="nlbterms:series"

Example:
Mapping equivalent
concepts or terms

The screenshot shows the OneSearch interface with a search filter for 'Type' set to 'Sculpture'. The results list several items, including 'Sculpture Installation' by Nguyen Nhu Y, 'Flirting Point' by Vertical Submarine, 'Expense of Spirit in a Waste of Shame' by Suzann Victor, 'Fool's Gold' by Vertical Submarine, and 'Om Mani Padme Hum (Enlightenment Series)' by Goh Ee Choo. A red box highlights the 'Sculpture Installation' entry.

The screenshot shows the detailed record for 'Sculpture Installation' by Nguyen Nhu Y. It includes a description of the work, a list of related items, and a list of related works. A red arrow points from the 'Sculpture Installation' entry in the search results to this record page.

Results on OneSearch

Linked to GLAMs

COLLABORATION WITH NATIONAL UNIVERSITY OF SINGAPORE (NUS) LIBRARIES DIGITAL GEMS

- Digitised rare collection of NUS Libraries
- Since June 2021, a total of 19,253 records across 20 collections have been mapped to DC and ingested
- 50% increase in usage** of materials after making the resource discoverable on NLB's OneSearch



Data Mapping/Ingestion

dcterms:isPartOf xsi:type="nlbterms:collections" (Default: NUS Libraries)	Retain: for ingestion reference Collection	dc:identifier xsi:type="nlbterms:accessionNo" Item ID	dc:creator Author/Creator
---	---	---	------------------------------

NLBAP	NUS Libraries Digital Gems
dc:type	Content Type
dc:subject	Subject
dc:creator	Author/Creator Editor Organisation
dc:title	Title
dcterms:created	Publication Date
dcterms:abstract	Abstract
dc:identifier xsi:type="nlbterms:uuid"	Empty (NLB assigned)
dc:identifier xsi:type="dcterms:URI"	Permalink https://digitalgems.nus.edu.sg/persistent/
dc:identifier xsi:type="nlbterms:accessionNo"	Item ID
dc:description	Description
dcterms:isPartOf xsi:type="nlbterms:collections"	(Default: NUS Libraries)
dcterms:language	Language
dc:publisher	Publisher
dcterms:rightsHolder	Empty
dc:coverage	Spatial Coverage

NUS Libraries

✉ askalib@nus.edu.sg

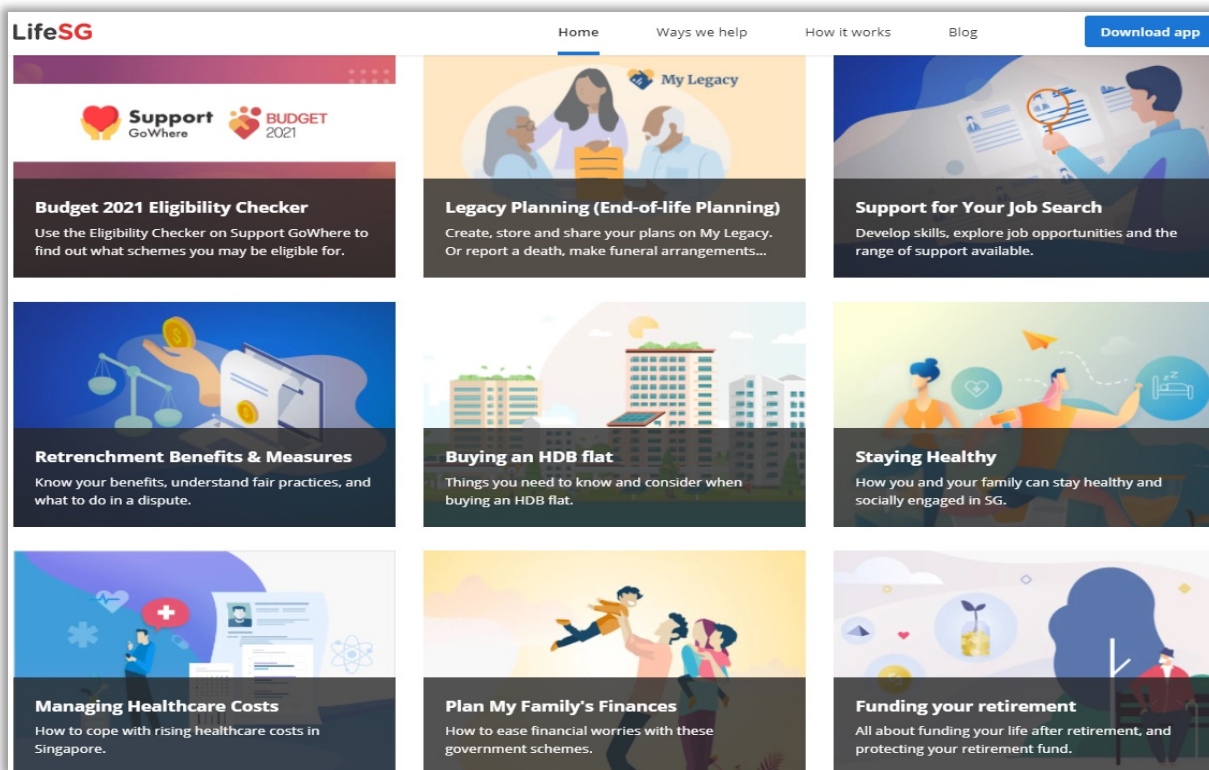
NUS Digital Gems

USING DUBLIN CORE AND CONTROLLED VOCABULARIES TO FACILITATE DISCOVERABILITY FOR PUBLIC AGENCIES

- In 2017, Singapore Government created LifeSG App for whole-of-government citizen services

NLB created:

- A LifeSG Application Profile based on Dublin Core
- LifeSG Faceted Taxonomy comprising of topics, target audience groups and content types



LifeSG App

XML Tags	Field Label	Definition	Remarks
<dcterms:identifier>	Content ID	Agency ID and Content ID in Agency's CMS	Agency ID will be assigned by the governing body when agency registers as a contributor
	Content URL	URL to content or event webpage	Must be mobile-responsive
<dcterms:title>	Title	Title or name of content	Limited to 60 characters
<dcterms:abstract>	Summary	Short snippet of content	Summary to be included in the search in future. Agencies are encouraged to write a meaningful summary
<dcterms:type>	Type	Type of material	Use Taxonomy created for the app
<dcterms:subject>	Topic	Topic of resource	Use Taxonomy created for the app
<dcterms:audience>	Target Audience	Group of people for whom the resource is intended or is useful	Use Taxonomy created for the app
<dcterms:hasPart>	Image URL	URL of image to be used as banner	Image selected should be descriptive of the article/policy/event. Images should have min. 800px width; landscape
<dcterms:contributor>	Owner(Contributor)	Person or organisation that currently owns the resource or an entity responsible for making the resource e.g. author of an article	
Applicable only for submitting of events			
<schemas:startDate>	Start Date	The start date and time of the event	Include the start time of the first event, as well as SG time zone (+08:00).
<schemas:endDate>	End Date	The end date and time of the event	Include the end time of the last event, as well as the time zone for SG (+08:00).
<schemas:location>	Venue	The location of for example where the event is happening	If there is more than one venue, use "Various locations".
<schemas:price>	Price	The offer price for attending an event	Use \$XX as a standard, if there are multiple pricing, please use "From \$XX".
<schemas:duration>	Time	Quantity: Duration	If there is more than one venue time range, use "Various timings".
<schemas:postalCode>	Postal Code	Postal code of the event location for geospatial tagging.	Optional if various locations

MOL Life Stages	Age range
Newborns	0 to 2 mths
Babies	3 to 12 mths
Toddlers	1 to 3 years
Young children	4 to 6 years
Children	7 to 12 years
Teenagers	13 to 17 years
Young adults	18 to 21 years
Adults	22 to 59 years
Seniors	60 years and over

MOL Resource Types	Definition / Scope Note
Benefit	A payment or gift that is made
Event	An event happening at a specif
Service	An organised system of supply public utilities, etc. Includes gui assistance, etc., and forms.
Resource	An information resource. Cove

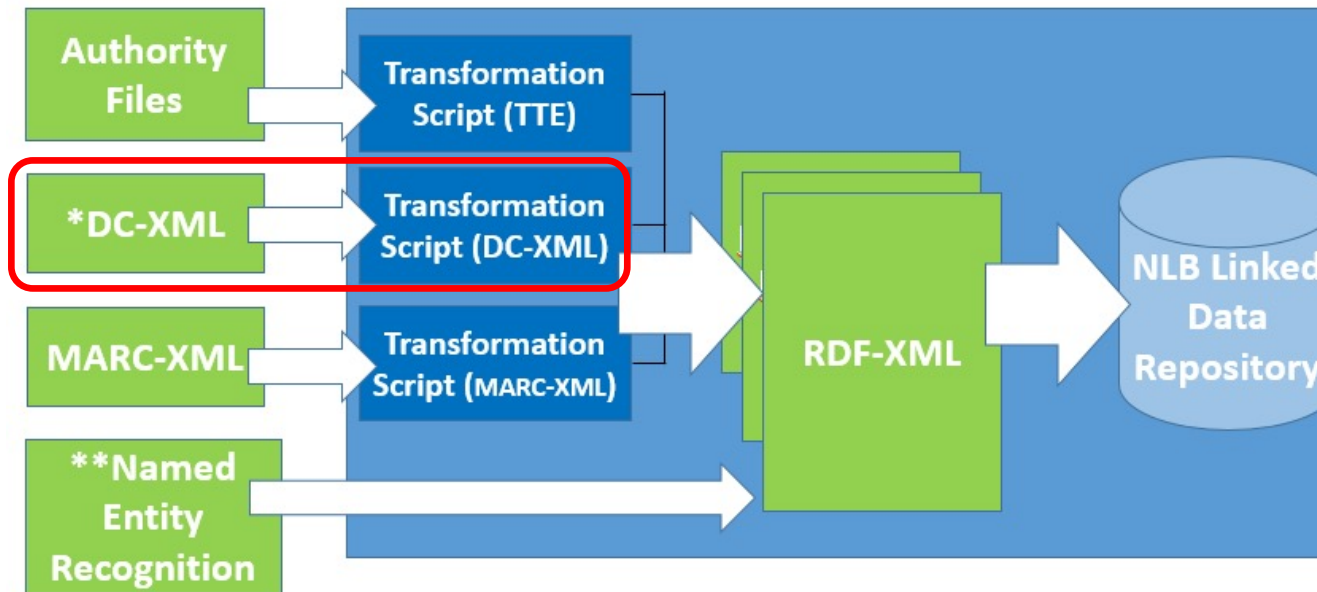
MOL Taxonomy	Level 2	Level 3	Level 4
Benefits	Benefits	Education	Environment
Education	Financial assistanc	Preschool	Air pollution
Environment	Subsidies	School	Flooding
Family and Community	Schemes	Further education	Public health
Finances	Policies	Skills training	Recycling
Health		Lifelong learning	Energy
Heritage and Culture			
Housing			
Jobs, Business and Economy			
Public safety and Security			
Technology			
Transport and Travel			

Faceted Taxonomy



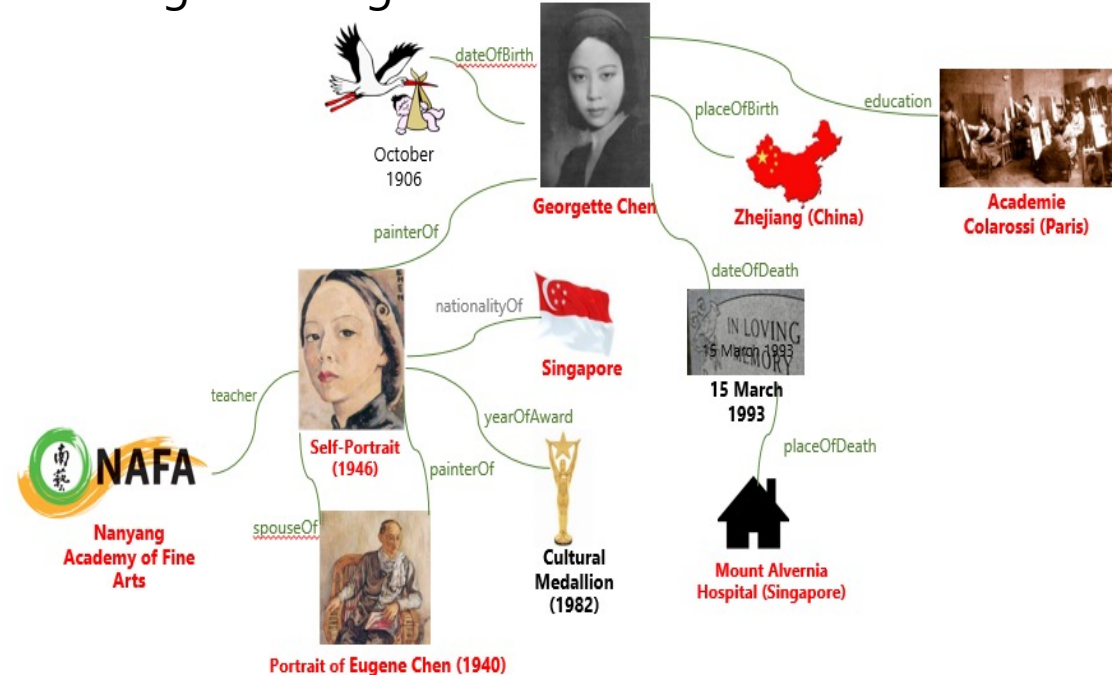
DC IN LINKED DATA

- NLB began **Linked Data** work in 2014 to enhance discoverability of resources:
 - Adopted BibFrame v1.0 ontology
 - Converted Authority Files, DC and MARC21 to RDF
 - Performed Named Entity Recognition to extract entities from unstructured data
 - Marked-up websites, DC and MARC21 records with Schema.org for Google crawl



*Includes crosswalked Libraries, Museums and Archives records

**NER extraction from Unstructured Data (e.g. articles)



Building of NLB's knowledge graph

CONTINUING WORK: METADATA TO LINKED DATA

Work In Progress

Datasets published as Linked Open Data
(Jul 2016)

Knowledge Panel on OneSearch
(Nov 2016)

HistorySG
(Jan 2017)
Infopedia
(May 2017)

Schema.org Markup for Websites & Collections
(2019)

Linked Data Catalogue

Open Data
Share bibliographic and authority data for external parties to develop applications

Entity Data
Bite-sized information about personalities, places and organisations

Linked Data Widget
Information about personalities, places & organisations linked to relevant content via RDF

Schema.org
Add semantic description for search engines to understand and discover resources

Discovery Interface
Update ontology to BibFrame v2.0, Knowledge Cards, Semantic Search, Links to Wikidata, etc.



Thank you

