Academia Sinica Center for Digital Cultures
中央研究院數位文化中心

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Session: Best Practice Presentation
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Linked Data as Method for Supporting DH Research on the Cultural Resources of Chinese Wooden Slips and the Interpretation of Ancient Chinese Characters

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Content

- Research Plan on the “Wooden Slips Character Dictionary” (WCD) and functions to support DH research
- LOD-based Data Model Design in WCD
- Application of IIIF APIs on WCD and IIIF-based Union Catalog of WCD
- Integration of IIIF Manifest Data with LOD-based Resources
- Closing Remarks

Research Plan on the “Wooden Slips Character Dictionary” (WCD) and functions to support DH research

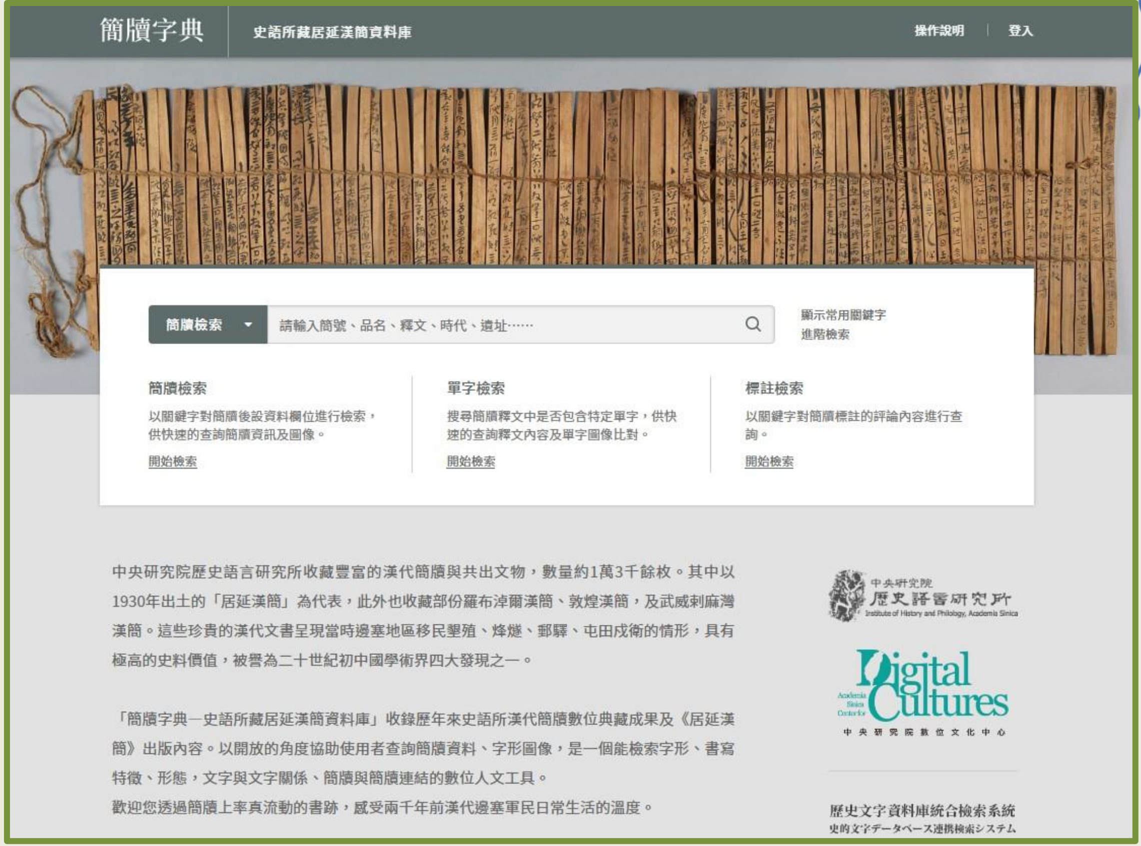
WCD Research Plan

- Initiated by the Institute of History and Philology, Academia Sinica and ASCDC from 2019.
- Focus: Establishing image-based digital humanity platform, a retrieval system to research, which is structured by IIIF standards and linked data, to study the Chinese ancient wooden slips and characters written on them.
- Digitized objects in WCD: More than 10,000 Wooden Slips excavated in 1930 in Kansu Province, China (甘肅省).
- The written characters are living cultural evidence on the military and legal systems, educational practices, economy, beliefs, and everyday life of military personnel and civilians in the Han dynasty (206 BC-AD 220).

Wooden Slips
Item H01637

Structural and Contextual Views on the WCD System

- IIIF-based system of linked data structured database.
- Content: 848 Objects of Wooden Slips, 1,046 IIIF-based images, 21,265 data entries on annotated characters
- Core functions in WCD platform:
  - * Metadata Search by object and by character
  - * Image Research on objects and characters
  - * Image annotation by classified categories
  - * Cross-database query for Chinese characters


簡牘字典
史語所藏居延漢簡資料庫
操作說明
登入
簡牘檢索
請輸入簡號、品名、釋文、時代、遺址……
顯示常用關鍵字
進階檢索

簡牘檢索

以關鍵字對簡牘後設資料欄位進行檢索，供快速的查詢簡牘資訊及圖像。

開始檢索

單字檢索

搜尋簡牘釋文中是否包含特定單字，供快速的查詢釋文內容及單字圖像比對。

開始檢索

標註檢索

以關鍵字對簡牘標註的評論內容進行查詢。

開始檢索

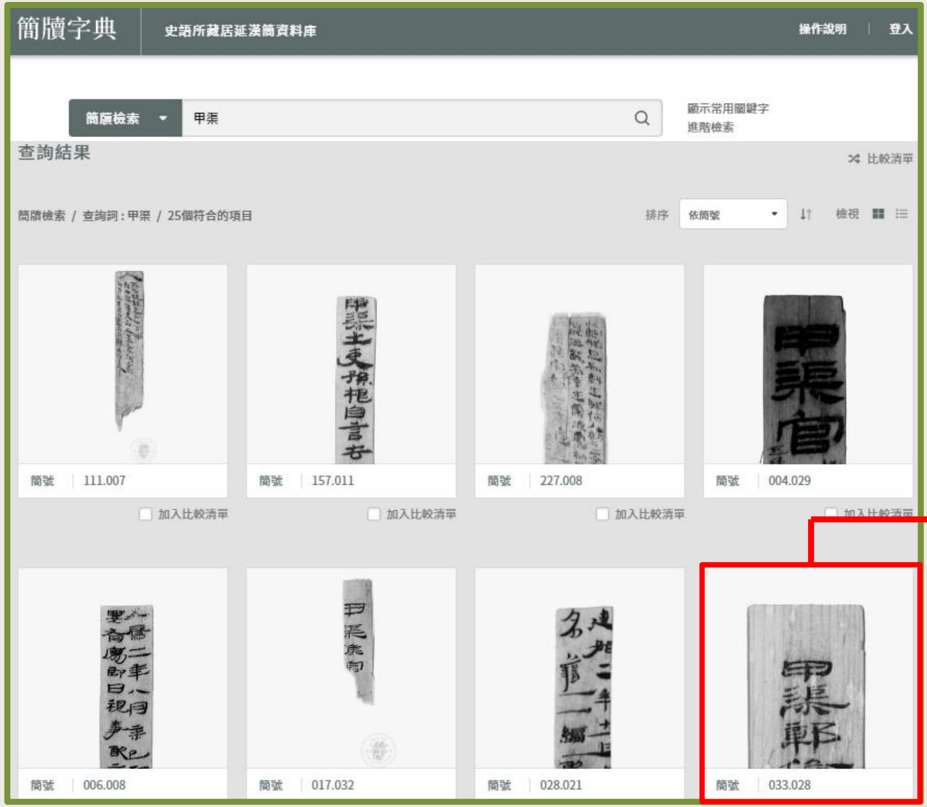
中央研究院歷史語言研究所收藏豐富的漢代簡牘與共出文物，數量約1萬3千餘枚。其中以1930年出土的「居延漢簡」為代表，此外也收藏部份羅布淖爾漢簡、敦煌漢簡，及武威剌麻灣漢簡。這些珍貴的漢代文書呈現當時邊塞地區移民墾殖、烽燧、郵驛、屯田戍衛的情形，具有極高的史料價值，被譽為二十世紀初中國學術界四大發現之一。

「簡牘字典—史語所藏居延漢簡資料庫」收錄歷年來史語所漢代簡牘數位典藏成果及《居延漢簡》出版內容。以開放的角度協助使用者查詢簡牘資料、字形圖像，是一個能檢索字形、書寫特徵、形態，文字與文字關係、簡牘與簡牘連結的數位人文工具。
歡迎您透過簡牘上率真流動的書跡，感受兩千年前漢代邊塞軍民日常生活的溫度。

中央研究院
歷史語言研究所
Institute of History and Philology, Academia Sinica
Academia Sinica Center for Digital Cultures
中央研究院數位文化中心
歷史文字資料庫統合檢索系統
史的文字データベース連携検索システム

WCD Website: https://wcd-ihp.ascdc.sinica.edu.tw/woodslip/index.php

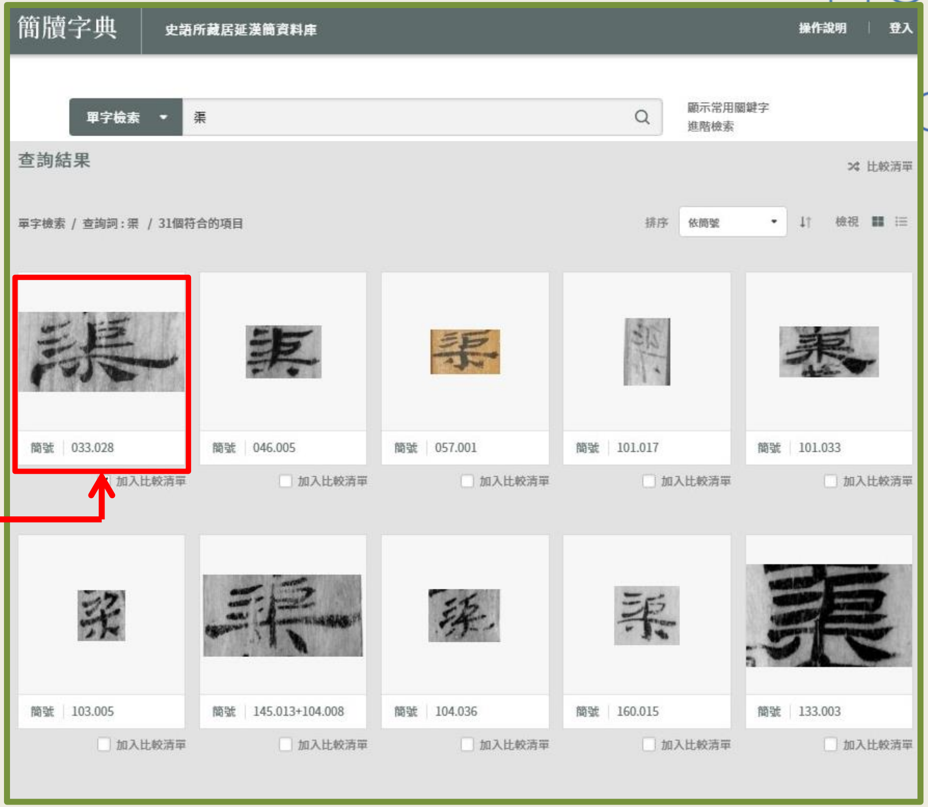
WCD: Information Retrieval


簡牘字典
史語所藏居延漢簡資料庫
操作說明
登入
簡牘檢索
顯示常用關鍵字
進階檢索
查詢結果
比較清單
排序
依簡號
檢視
簡號 111.007
加入比較清單
簡號 157.011
加入比較清單
簡號 227.008
加入比較清單
簡號 004.029
加入比較清單
簡號 006.008
簡號 017.032
簡號 028.021
簡號 033.028

甲渠

簡牘檢索 / 查詢詞：甲渠 / 25個符合的項目

Object-based retrieval


簡牘字典
史語所藏居延漢簡資料庫
操作說明
登入
單字檢索
顯示常用關鍵字
進階檢索
查詢結果
比較清單
排序
依簡號
檢視
簡號 033.028
加入比較清單
簡號 046.005
加入比較清單
簡號 057.001
加入比較清單
簡號 101.017
加入比較清單
簡號 101.033
加入比較清單
簡號 103.005
加入比較清單
簡號 145.013+104.008
加入比較清單
簡號 104.036
加入比較清單
簡號 160.015
加入比較清單
簡號 133.003
加入比較清單

渠

單字檢索 / 查詢詞：渠 / 31個符合的項目

Character-based retrieval

WCD: Image Research

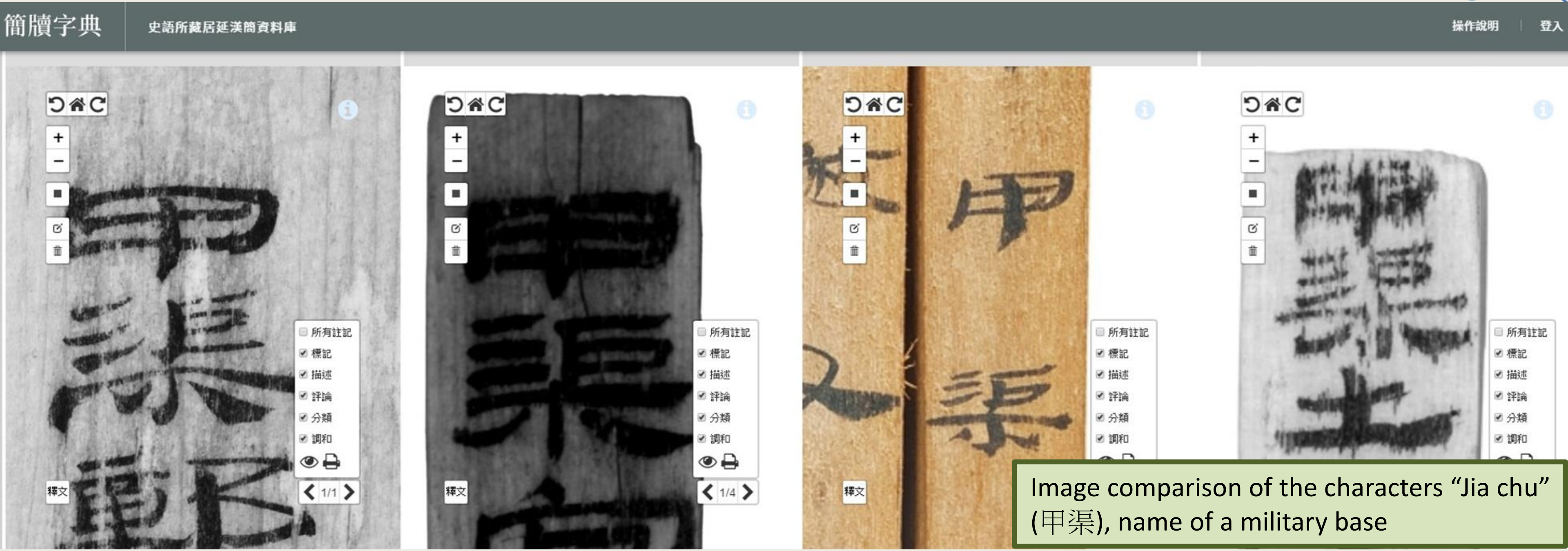
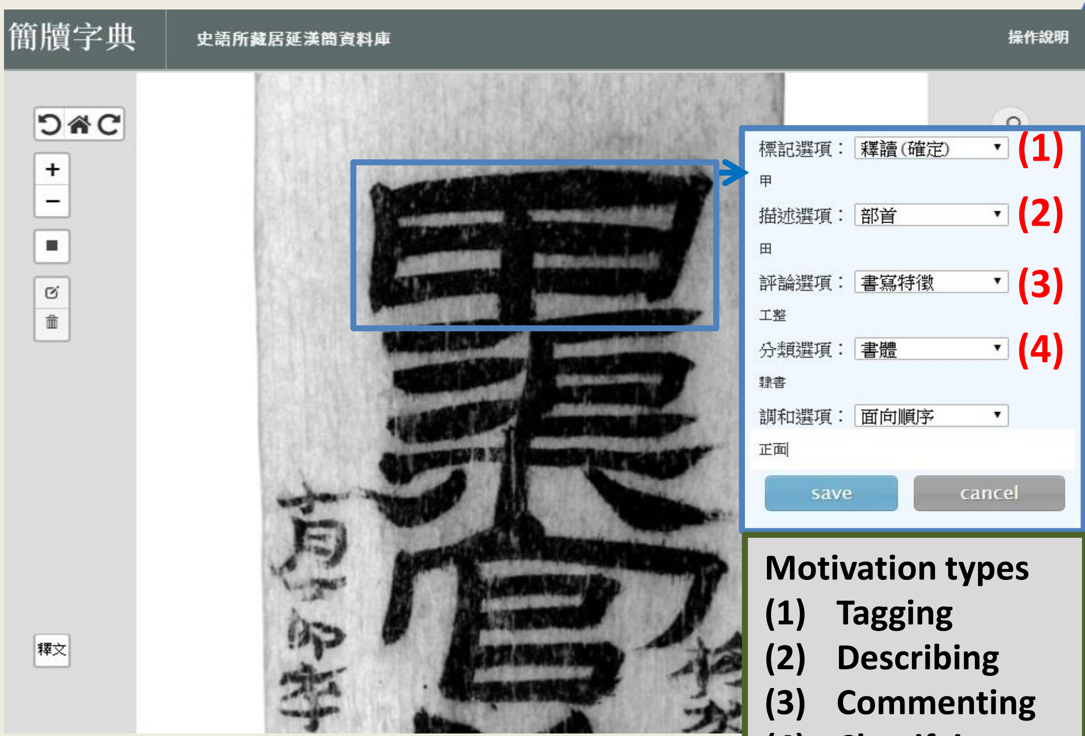

簡牘字典
史語所藏居延漢簡資料庫
操作說明
登入
☐ 所有註記
☑ 標記
☑ 描述
☑ 評論
☑ 分類
☑ 調和
釋文
1/1
1/4

Image comparison of the characters “Jia chu” (甲渠), name of a military base

- The IIIF-based image viewer can make comparisons of the characters’ writing style and identify the possible common handwriting between related characters

WCD: Image Annotation

- Images of objects and characters can be annotated under different motivations and sub-types as an extension to IIIF APIs.
- The method of classified annotation in different sub-categories makes the annotated text more reusable for scholars' needs by saving object data or interpreting the form and meaning of the characters.
- The annotated information will be saved in IIIF manifest and could be reusable, exchangeable as linked data.
- Images can be researched by crowdsourcing.



標記選項：釋讀(確定)

甲

描述選項：部首

田

評論選項：書寫特徵

工整

分類選項：書體

隸書

調和選項：面向順序

正面

Motivation types

(1) Tagging

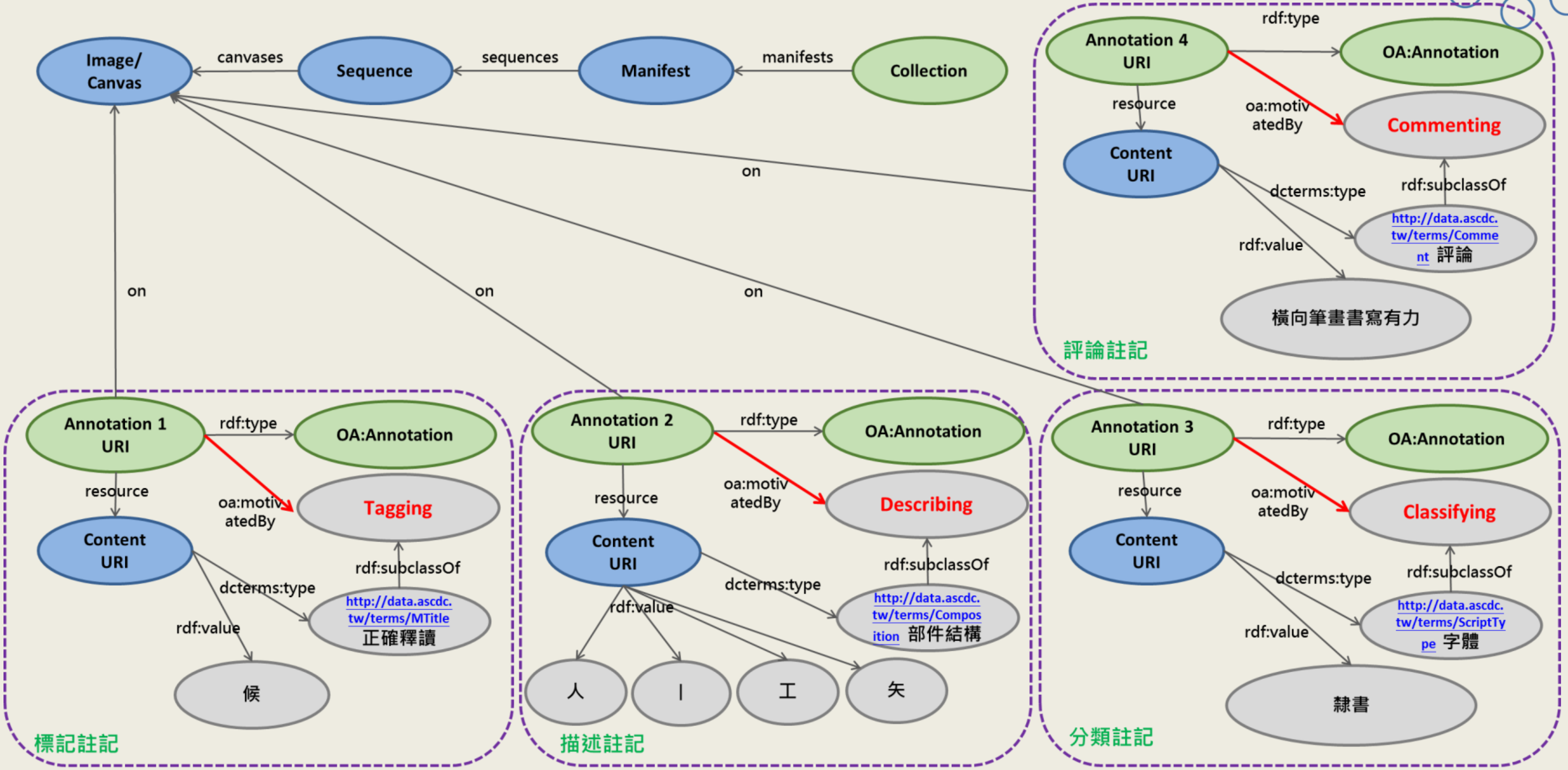
(2) Describing

(3) Commenting

(4) Classifying

The character "Jia" (甲) can be annotated under different motivations such as tagging, describing, commenting, or classifying (Item H04737)

WCD: Image Annotation



Image/ Canvas

canvases

Sequence

sequences

Manifest

manifests

Collection

on

on

on

on

Annotation 4 URI

rdf:type

OA:Annotation

resource

oa:motivatedBy

Commenting

Content URI

dcterms:type

rdf:subclassOf

http://data.ascdc.tw/terms/Comment 評論

rdf:value

橫向筆畫書寫有力

評論註記

Annotation 1 URI

rdf:type

OA:Annotation

resource

oa:motivatedBy

Tagging

Content URI

dcterms:type

rdf:subclassOf

http://data.ascdc.tw/terms/MTitle 正確釋讀

rdf:value

候

標記註記

Annotation 2 URI

rdf:type

OA:Annotation

resource

oa:motivatedBy

Describing

Content URI

dcterms:type

rdf:subclassOf

http://data.ascdc.tw/terms/Composition 部件結構

rdf:value

人

丨

工

矢

描述註記

Annotation 3 URI

rdf:type

OA:Annotation

resource

oa:motivatedBy

Classifying

Content URI

dcterms:type

rdf:subclassOf

http://data.ascdc.tw/terms/ScriptType 字體

rdf:value

隸書

分類註記

● Basic type ● Additional type ● Extension

LOD-based Data Model Design in WCD

WCD Data Model

- CIDOC-CRM based WCD-data model: Describing information on the cultural object of the Chinese wooden slips.
- Core structures in WCD data model:
  * 23 classes in object-based and event-based model (CIDOC-CRM)
  * 47 properties from 9 semantic vocabularies (ascdc, bmo, CIDOC-CRM, dcterms, owl, rdf, rdfs, schema, skos)
  * 3 external resources (AAT, TGN, VIAF) reused for data enrichment

The Art & Architecture Thesaurus (AAT)®

The Getty Thesaurus of Geographic Names (TGN)®

VIAF

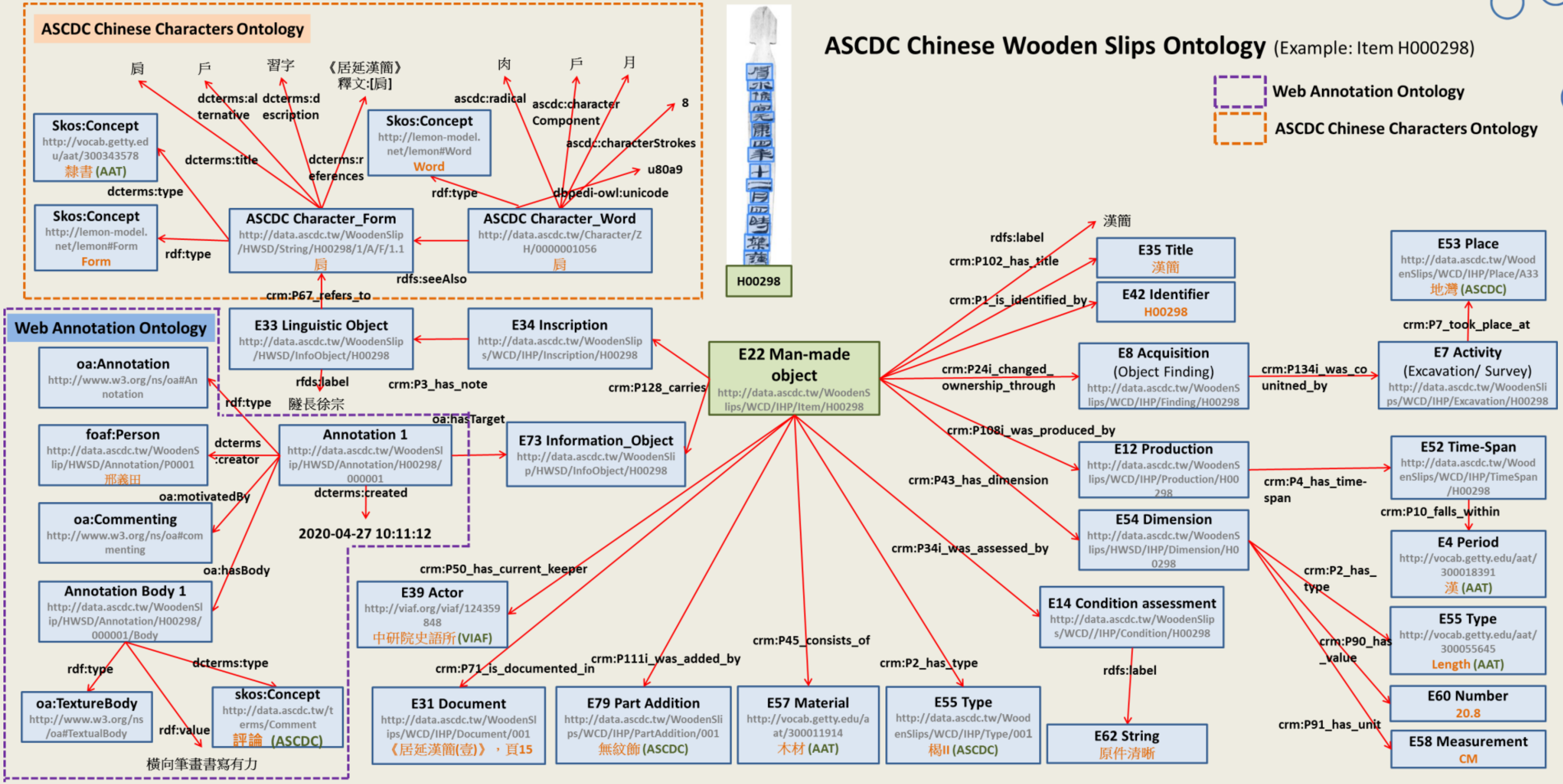
Classes [23]

crm:E4_Period , crm:E7_Activity, crm:E8_Acquisition, crm:E12_Production, crm:E14_Condiciton_Assessment, crm:E22_Man-Made_Object, crm:E31_Document, crm:E33_Linguistic_Object, crm:E34_Inscription, crm:E35_Title, crm:E38_Image, crm:E39_Actor, crm:E42_Identifier, crm:E52_Time-Span, crm:E53_Place, crm:E54_Dimension, crm:E55_Type, crm:E57_Material, crm:E58_Measurement_Unit, crm:E60_Number, crm:E62_String, crm:E73_Information_Object, crm:E79_Part_Addition

Properties [47]

ascdc:type, bmo:PX_inscription_position, crm:P1_is_identified_by, crm:P2_has_type, crm:P3_has_note, crm:P4_has_time-span, crm:P7_took_place_at, crm:P10_falls_within, crm:P14_carried_out_by, crm:P24i_changed_ownership_through, crm:P32_use_general_technique, crm:P33_use_specific_technique, crm:P34i_was_assessed_by, crm:P43_has_dimension, crm:P45_consists_of, crm:P48_has_preferred_identifier, crm:P50_has_current_keeper, crm:P52_has_current_owner, crm:P65_shows_visual_item, crm:P67_refers_to, crm:P70i_is_documented_in, crm:P90_has_value, crm:P91_has_unit, crm:P102_has_title, crm:P108i_was_produced_by, crm:P111i_was_added_by, crm:P115_finishes, crm:P116_starts, crm:P127_has_broader_term, crm:P128_carries, crm:P129i_is_subject_of, crm:P134i_was_continued_by, crm:P137_exemplifies, crm:P139_has_alternative_form, dcterms:identifier, dcterms:isPartOf, dcterms:type, owl:sameAs, rdf:type, rdfs:label, rdfs:seeAlso, schema:endDate, schema:identtfier, schema:startDate, skos:altLabel, skos:broadMatch, skos:related

WCD Data Model



ASCDC Chinese Characters Ontology

扃
戶
習字
《居延漢簡》釋文:[扃]
肉
戶
月
8
u80a9

dcterms:alternative
dcterms:description
dcterms:title
dcterms:references
dcterms:type
rdf:type
ascdc:radical
ascdc:characterComponent
ascdc:characterStrokes
dbpedi-owl:unicode
rdfs:seeAlso
crm:P67_refers_to

Skos:Concept
http://vocab.getty.edu/aat/300343578
隸書 (AAT)

Skos:Concept
http://lemon-model.net/lemon#Form
Form

Skos:Concept
http://lemon-model.net/lemon#Word
Word

ASCDC Character_Form
http://data.ascdc.tw/WoodenSlip/HWSD/String/H00298/1/A/F/1.1
扃

ASCDC Character_Word
http://data.ascdc.tw/Character/ZH/0000001056
扃

H00298

ASCDC Chinese Wooden Slips Ontology (Example: Item H000298)

Web Annotation Ontology

ASCDC Chinese Characters Ontology

Web Annotation Ontology

oa:Annotation
http://www.w3.org/ns/oa#Annotation

foaf:Person
http://data.ascdc.tw/WoodenSlip/HWSD/Annotation/P0001
邢義田

oa:Commenting
http://www.w3.org/ns/oa#commenting

Annotation Body 1
http://data.ascdc.tw/WoodenSlip/HWSD/Annotation/H00298/000001/Body

oa:TextureBody
http://www.w3.org/ns/oa#TextualBody

skos:Concept
http://data.ascdc.tw/terms/Comment
評論 (ASCDC)

橫向筆畫書寫有力

Annotation 1
http://data.ascdc.tw/WoodenSlip/HWSD/Annotation/H00298/000001

2020-04-27 10:11:12

rdf:type
dcterms:creator
oa:motivatedBy
oa:hasBody
oa:hasTarget
dcterms:created
rdf:type
dcterms:type
rdf:value

E33 Linguistic Object
http://data.ascdc.tw/WoodenSlip/HWSD/InfoObject/H00298

rdfs:label
隧長徐宗
crm:P3_has_note

E34 Inscription
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Inscription/H00298

E73 Information_Object
http://data.ascdc.tw/WoodenSlip/HWSD/InfoObject/H00298

crm:P128_carries

E22 Man-made object
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Item/H00298

漢簡
rdfs:label
crm:P102_has_title
crm:P1_is_identified_by

E35 Title
漢簡

E42 Identifier
H00298

crm:P24i_changed_ownership_through

E8 Acquisition (Object Finding)
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Finding/H00298

crm:P134i_was_continued_by

E7 Activity (Excavation/ Survey)
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Excavation/H00298

crm:P7_took_place_at

E53 Place
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Place/A33
地灣 (ASCDC)

crm:P108i_was_produced_by

E12 Production
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Production/H00298

crm:P4_has_time-span

E52 Time-Span
http://data.ascdc.tw/WoodenSlips/WCD/IHP/TimeSpan/H00298

crm:P10_falls_within

E4 Period
http://vocab.getty.edu/aat/300018391
漢 (AAT)

crm:P43_has_dimension

E54 Dimension
http://data.ascdc.tw/WoodenSlips/HWSD/IHP/Dimension/H00298

crm:P2_has_type

E55 Type
http://vocab.getty.edu/aat/300055645
Length (AAT)

crm:P90_has_value

E60 Number
20.8

crm:P91_has_unit

E58 Measurement
CM

crm:P34i_was_assessed_by

E14 Condition assessment
http://data.ascdc.tw/WoodenSlips/WCD//IHP/Condition/H00298

rdfs:label

E62 String
原件清晰

crm:P50_has_current_keeper

E39 Actor
http://viaf.org/viaf/124359848
中研院史語所 (VIAF)

crm:P71_is_documented_in

E31 Document
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Document/001
《居延漢簡(壹)》，頁15

crm:P111i_was_added_by

E79 Part Addition
http://data.ascdc.tw/WoodenSlips/WCD/IHP/PartAddition/001
無紋飾 (ASCDC)

crm:P45_consists_of

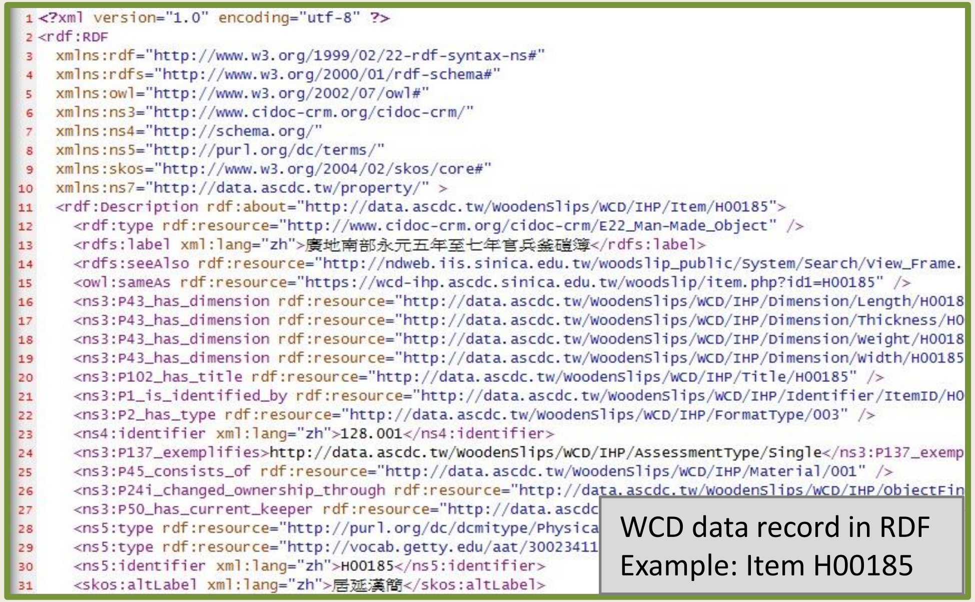
E57 Material
http://vocab.getty.edu/aat/300011914
木材 (AAT)

crm:P2_has_type

E55 Type
http://data.ascdc.tw/WoodenSlips/WCD/IHP/Type/001
楬II (ASCDC)

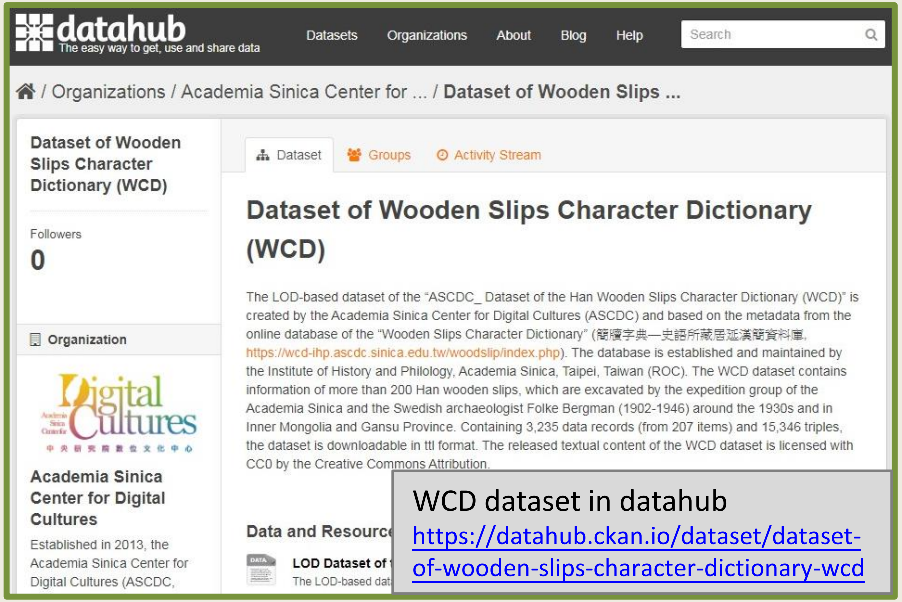
LOD Dataset of WCD

- Based on CIDOC-CRM, metadata of 207 slips are converted into an LOD dataset with 15,346 triples. Released in Datahub.
- The concerted data contain information on the title, item number, registration number, excavation site, provenance, Creation data, Dynasty, Type, decoration, material, dimensions of work, references, related item, collection, and image information of a slip.



```
<?xml version="1.0" encoding="utf-8" ?>
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:ns3="http://www.cidoc-crm.org/cidoc-crm/"
  xmlns:ns4="http://schema.org/"
  xmlns:ns5="http://purl.org/dc/terms/"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:ns7="http://data.ascdc.tw/property/" >
  <rdf:Description rdf:about="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Item/H00185">
    <rdf:type rdf:resource="http://www.cidoc-crm.org/cidoc-crm/E22_Man-Made_Object" />
    <rdfs:label xml:lang="zh">廣地南部永元五年至七年官兵釜磑簿</rdfs:label>
    <rdfs:seeAlso rdf:resource="http://ndweb.iis.sinica.edu.tw/woodslip_public/System/Search/View_Frame.
    <owl:sameAs rdf:resource="https://wcd-ihp.ascdc.sinica.edu.tw/woodslip/item.php?id1=H00185" />
    <ns3:P43_has_dimension rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Dimension/Length/H0018
    <ns3:P43_has_dimension rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Dimension/Thickness/H0
    <ns3:P43_has_dimension rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Dimension/Weight/H0018
    <ns3:P43_has_dimension rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Dimension/Width/H00185
    <ns3:P102_has_title rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Title/H00185" />
    <ns3:P1_is_identified_by rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Identifier/ItemID/H0
    <ns3:P2_has_type rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/FormatType/003" />
    <ns4:identifier xml:lang="zh">128.001</ns4:identifier>
    <ns3:P137_exemplifies>http://data.ascdc.tw/WoodenSlips/WCD/IHP/AssessmentType/Single</ns3:P137_exemp
    <ns3:P45_consists_of rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/Material/001" />
    <ns3:P24i_changed_ownership_through rdf:resource="http://data.ascdc.tw/WoodenSlips/WCD/IHP/ObjectFin
    <ns3:P50_has_current_keeper rdf:resource="http://data.ascdc
    <ns5:type rdf:resource="http://purl.org/dc/dcmitype/Physica
    <ns5:type rdf:resource="http://vocab.getty.edu/aat/30023411
    <ns5:identifier xml:lang="zh">H00185</ns5:identifier>
    <skos:altLabel xml:lang="zh">居延漢簡</skos:altLabel>
```

WCD data record in RDF
Example: Item H00185


datahub
The easy way to get, use and share data
Datasets
Organizations
About
Blog
Help
Search
/ Organizations / Academia Sinica Center for ... / Dataset of Wooden Slips ...
Dataset
Groups
Activity Stream
Organization
Digital Cultures
Academia Sinica Center for Digital Cultures
中央研究院數位文化中心

Dataset of Wooden Slips Character Dictionary (WCD)

Followers
0

Academia Sinica Center for Digital Cultures

Established in 2013, the Academia Sinica Center for Digital Cultures (ASCDC,

Dataset of Wooden Slips Character Dictionary (WCD)

The LOD-based dataset of the "ASCDC_ Dataset of the Han Wooden Slips Character Dictionary (WCD)" is created by the Academia Sinica Center for Digital Cultures (ASCDC) and based on the metadata from the online database of the "Wooden Slips Character Dictionary" (簡牘字典—史語所藏居延漢簡資料庫, https://wcd-ihp.ascdc.sinica.edu.tw/woodslip/index.php). The database is established and maintained by the Institute of History and Philology, Academia Sinica, Taipei, Taiwan (ROC). The WCD dataset contains information of more than 200 Han wooden slips, which are excavated by the expedition group of the Academia Sinica and the Swedish archaeologist Folke Bergman (1902-1946) around the 1930s and in Inner Mongolia and Gansu Province. Containing 3,235 data records (from 207 items) and 15,346 triples, the dataset is downloadable in ttl format. The released textual content of the WCD dataset is licensed with CC0 by the Creative Commons Attribution.

Data and Resource

LOD Dataset of

The LOD-based dat

WCD dataset in datahub
https://datahub.ckan.io/dataset/dataset-of-wooden-slips-character-dictionary-wcd

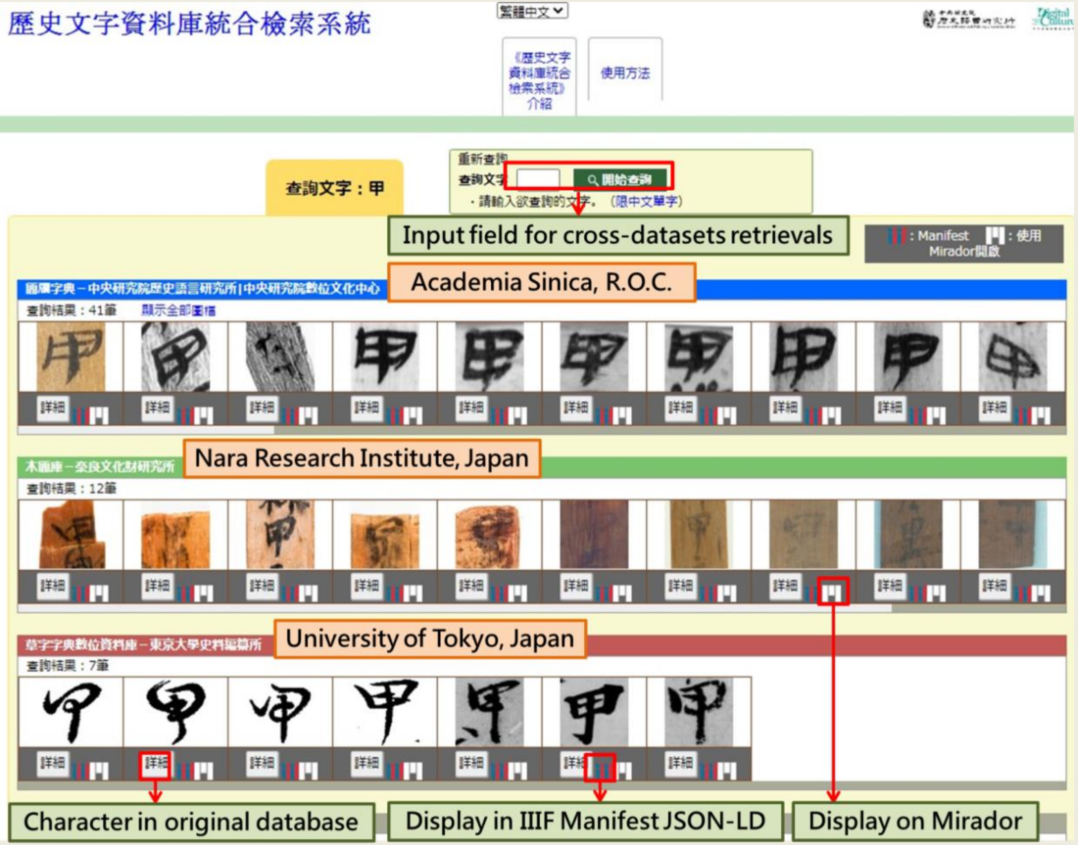
Application of IIIF APIs on WCD and IIIF-based Union Catalog of WCD

Application of IIIF APIs on the WCD Platform

- **Image presentation in the WCD database functions based on the IIIF standard, especially in application of the IIIF Presentation API, IIIF Image API and IIIF Content Search API.**

	API type	Purpose of application	Application
1	**IIIF Presentation API**	Present an image or series of images in IIIF viewer by its correct image sequence, structure and layout based on the linked data and web page structure principles.	Image presentation, Image sharing, Structured retrieval system of WCD
2	**IIIF Image API**	Formulate an image's URI design, parameter specification, and attribution for data management to achieve static image retrieval and delivery.	Image zooming, Image comparison, Viewing form definition
3	**IIIF Content Search API**	Provides a content retrieval service mechanism to retrieve the annotation information embedded in the IIIF manifest JSON-LD file or information structured in the IIIF presentation API.	Character retrievals, Structured image annotation

IIIF-based Union Catalog of WCD



歷史文字資料庫統合檢索系統

查詢文字：甲

重新查詢

查詢文字

・請輸入欲查詢的文字。（限中文單字）

簡牘字典－中央研究院歷史語言研究所|中央研究院數位文化中心

查詢結果：41筆　顯示全部圖檔

木簡庫－奈良文化財研究所

查詢結果：12筆

草字字典數位資料庫－東京大學史料編纂所

查詢結果：7筆

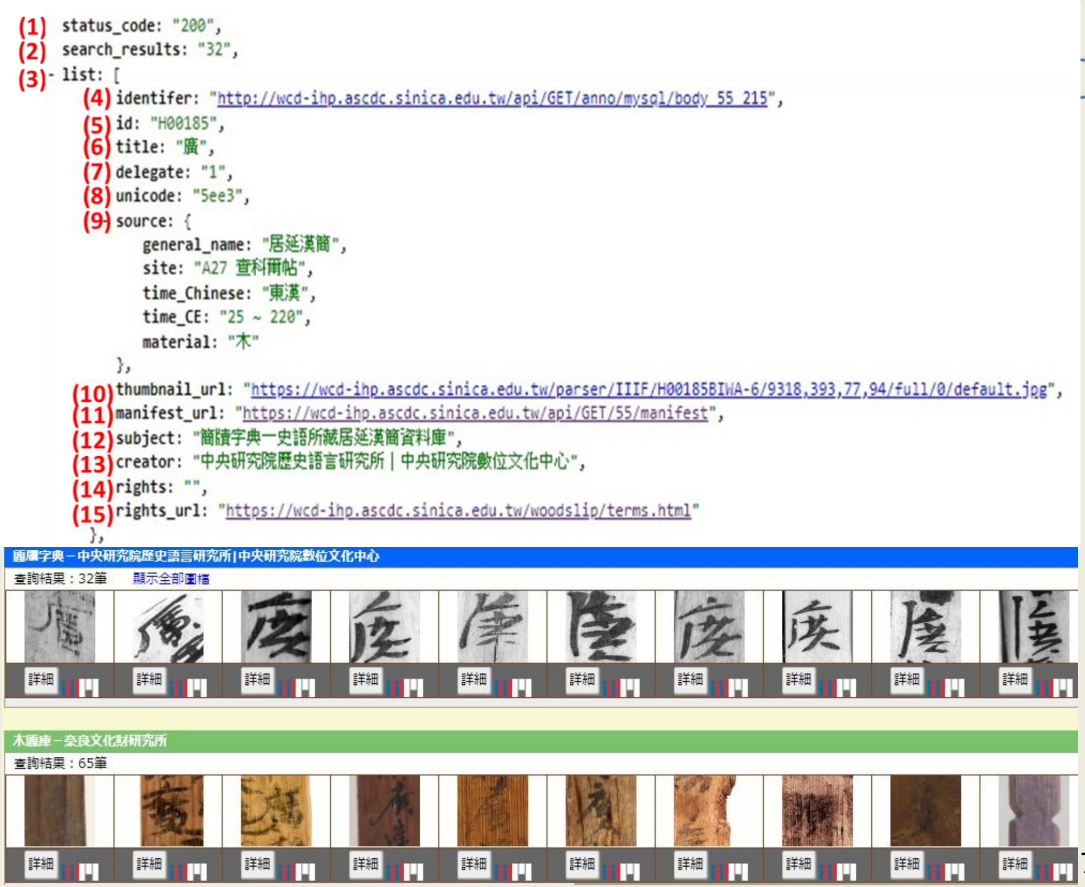
繁體中文
《歷史文字資料庫統合檢索系統》介紹
使用方法
開始查詢
Input field for cross-datasets retrievals
: Manifest
: 使用Mirador開啟
Academia Sinica, R.O.C.
詳細
Nara Research Institute, Japan
University of Tokyo, Japan
Character in original database
Display in IIIF Manifest JSON-LD
Display on Mirador

WCD Union Catalog：https://wcd-ihp.ascdc.sinica.edu.tw/union/

- Images of WCD characters are further interoperable and retrievable in the “**Union Catalog**” for searching historical Chinese Characters in cooperation with international research communities, such as the Nara National Research Institute for Cultural Properties, Historiographical Institute of the University of Tokyo, National Institute of Japanese Literature, National Institute for Japanese Language and Linguistics, and Institute for Research in Humanities at Kyoto University in Japan.
- Functions of WCD’s Union Catalog
  - * **Character retrieval across institutes**
  - * Redirection to original database
  - * Access to the IIIF Manifest structure of retrieved characters
  - * Presentation of retrieved characters in Mirador viewer
- System functions based on **IIIF APIs** and **customized API for sharing of the search results**

Design of Interoperable API for Character Retrievals

- In cooperation with 6 research institutes in Japan, an **API for sharing query results** was developed to enable query of a single character across different institute databases and enhance data interoperability.
- API is structured based on JSON format.
- 15 elements are regulated in the WCD-Union query API: status code, search results, list, identifier, id, **title**, delegate, unicode, source, thumbnail url, manifest url, subject, creator, rights, rights url.



```
(1)  status_code: "200",
(2)  search_results: "32",
(3)- list: [
       (4) identifer: "http://wcd-ihp.ascdc.sinica.edu.tw/api/GET/anno/mysql/body_55_215",
       (5) id: "H00185",
       (6) title: "廣",
       (7) delegate: "1",
       (8) unicode: "5ee3",
       (9) source: {
              general_name: "居延漢簡",
              site: "A27 查科爾帖",
              time_Chinese: "東漢",
              time_CE: "25 ~ 220",
              material: "木"
           },
      (10)thumbnail_url: "https://wcd-ihp.ascdc.sinica.edu.tw/parser/IIIF/H00185BIWA-6/9318,393,77,94/full/0/default.jpg",
      (11)manifest_url: "https://wcd-ihp.ascdc.sinica.edu.tw/api/GET/55/manifest",
      (12)subject: "簡牘字典—史語所藏居延漢簡資料庫",
      (13)creator: "中央研究院歷史語言研究所|中央研究院數位文化中心",
      (14)rights: "",
      (15)rights_url: "https://wcd-ihp.ascdc.sinica.edu.tw/woodslip/terms.html"
        },
```

簡牘字典 – 中央研究院歷史語言研究所|中央研究院數位文化中心

查詢結果：32筆 顯示全部圖檔

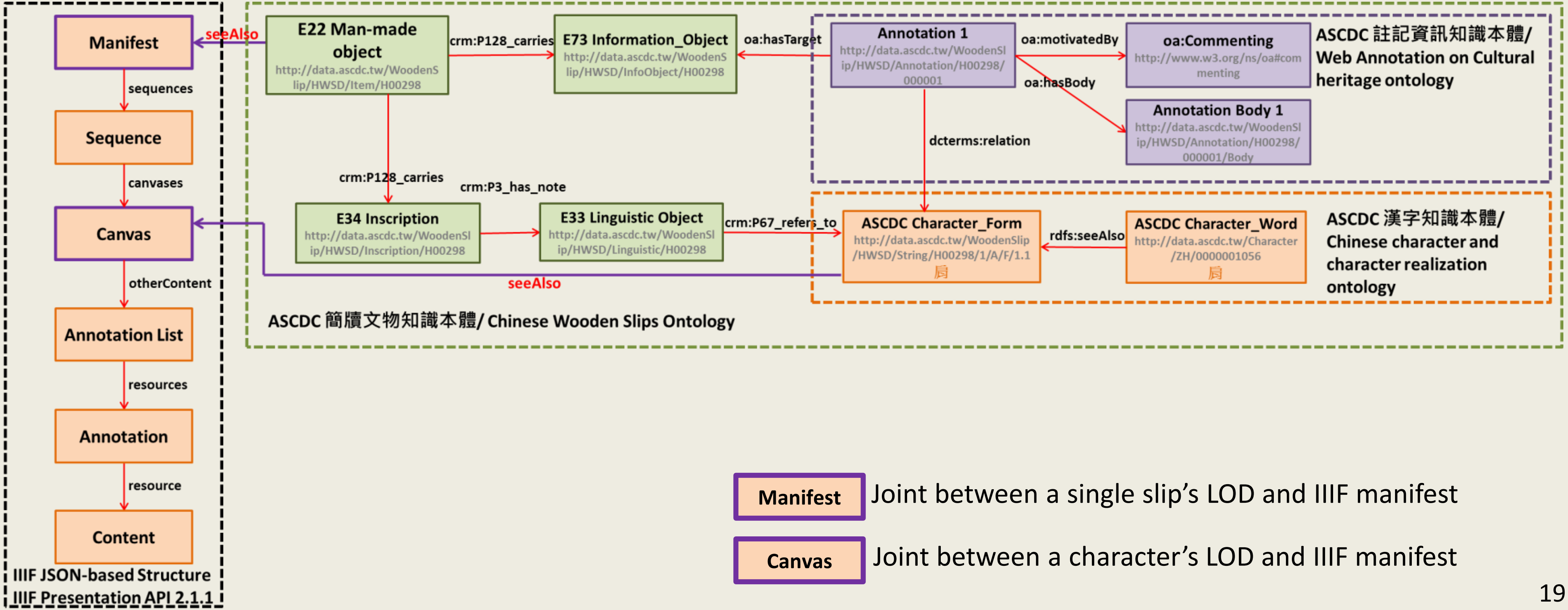
木簡庫 – 奈良文化財研究所

查詢結果：65筆

Integration of IIIF Manifest Data with LOD-based Resources

Heterogeneous Data Linkage between LOD and IIIF

- Using a linking property such as seeAlso regulated in IIIF Presentation API to link the LOD-based descriptive metadata of an object or a Chinese character with its image data embedded in the IIIF manifest and further enhance data distribution and reusability of WCD's LOD



Manifest

sequences

Sequence

canvases

Canvas

otherContent

Annotation List

resources

Annotation

resource

Content

IIIF JSON-based Structure
IIIF Presentation API 2.1.1

seeAlso

E22 Man-made object
http://data.ascdc.tw/WoodenSlip/HWSD/Item/H00298

crm:P128_carries

E73 Information_Object
http://data.ascdc.tw/WoodenSlip/HWSD/InfoObject/H00298

oa:hasTarget

Annotation 1
http://data.ascdc.tw/WoodenSlip/HWSD/Annotation/H00298/000001

oa:motivatedBy

oa:Commenting
http://www.w3.org/ns/oa#commenting

oa:hasBody

Annotation Body 1
http://data.ascdc.tw/WoodenSlip/HWSD/Annotation/H00298/000001/Body

ASCDC 註記資訊知識本體/ Web Annotation on Cultural heritage ontology

dcterms:relation

crm:P128_carries

crm:P3_has_note

E34 Inscription
http://data.ascdc.tw/WoodenSlip/HWSD/Inscription/H00298

E33 Linguistic Object
http://data.ascdc.tw/WoodenSlip/HWSD/Linguistic/H00298

crm:P67_refers_to

ASCDC Character_Form
http://data.ascdc.tw/WoodenSlip/HWSD/String/H00298/1/A/F/1.1
扃

rdfs:seeAlso

ASCDC Character_Word
http://data.ascdc.tw/Character/ZH/0000001056
扃

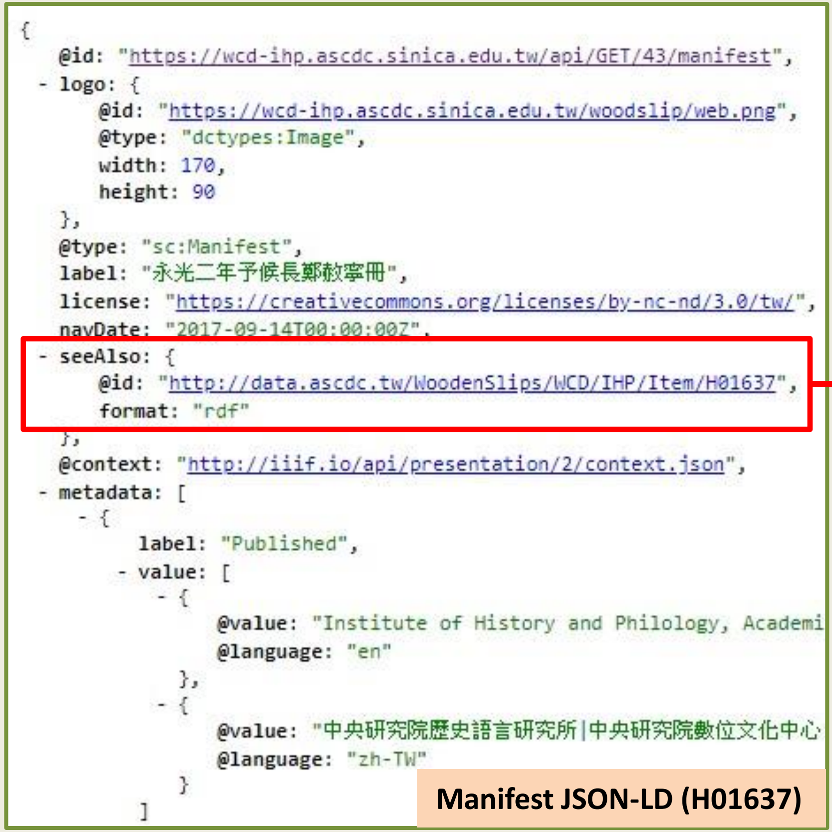
ASCDC 漢字知識本體/ Chinese character and character realization ontology

seeAlso

ASCDC 簡牘文物知識本體/ Chinese Wooden Slips Ontology

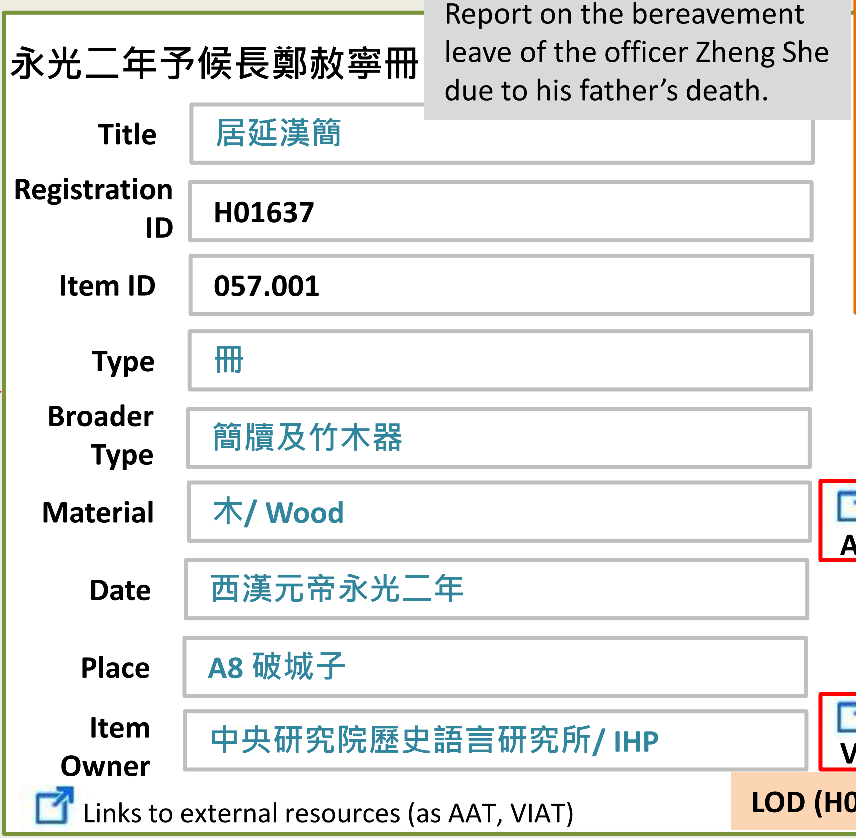
Manifest	Joint between a single slip's LOD and IIIF manifest
Canvas	Joint between a character's LOD and IIIF manifest

Data Linkage between LOD and IIIF: An Example



```
{
   @id: "https://wcd-ihp.ascdc.sinica.edu.tw/api/GET/43/manifest",
 - logo: {
      @id: "https://wcd-ihp.ascdc.sinica.edu.tw/woodslip/web.png",
      @type: "dctypes:Image",
      width: 170,
      height: 90
   },
   @type: "sc:Manifest",
   label: "永光二年予候長鄭赦寧冊",
   license: "https://creativecommons.org/licenses/by-nc-nd/3.0/tw/",
   navDate: "2017-09-14T00:00:00Z",
 - seeAlso: {
      @id: "http://data.ascdc.tw/WoodenSlips/WCD/IHP/Item/H01637",
      format: "rdf"
   },
   @context: "http://iiif.io/api/presentation/2/context.json",
 - metadata: [
    - {
         label: "Published",
       - value: [
          - {
               @value: "Institute of History and Philology, Academi
               @language: "en"
            },
          - {
               @value: "中央研究院歷史語言研究所|中央研究院數位文化中心
               @language: "zh-TW"
            }
         ]
```

Manifest JSON-LD (H01637)



永光二年予候長鄭赦寧冊

Title	居延漢簡
Registration ID	**H01637**
Item ID	**057.001**
Type	冊
Broader Type	簡牘及竹木器
Material	木/ Wood
Date	西漢元帝永光二年
Place	A8 破城子
Item Owner	中央研究院歷史語言研究所/ IHP

Report on the bereavement leave of the officer Zheng She due to his father’s death.

AAT

VIAF

Links to external resources (as AAT, VIAT)

LOD (H01637)

seeAlso as key property to integrate IIIF Manifest JSON-LD with LOD-based descriptive data

Closing Remarks

Closing Remarks

- LOD is not only an effective method to make results of DH study more reusable, accessible, and enhance information retrieval across different datasets or institutes. Based on its essence as linked data, LOD can also integrate into other heterogeneous data structures or platforms such as IIIF.
- By using semantic properties, the LOD-based metadata can be connected with the data structure of the IIIF manifest. Thus, a model to support DH studies, both on their descriptive component and image component, is possible.

Wooden Slips
Item H00052

數位潮流
生態
紀錄
藝術
文化
知識

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ASCDC

Q & A

Digital Cultures
Academia Sinica Center for
中央研究院數位文化中心

THANK YOU !