

Area Informatics and Topic Maps

Shoichiro HARA

Center for Integrated Area Studies (CIAS)

Kyoto University

shara@cias.kyoto-u.ac.jp

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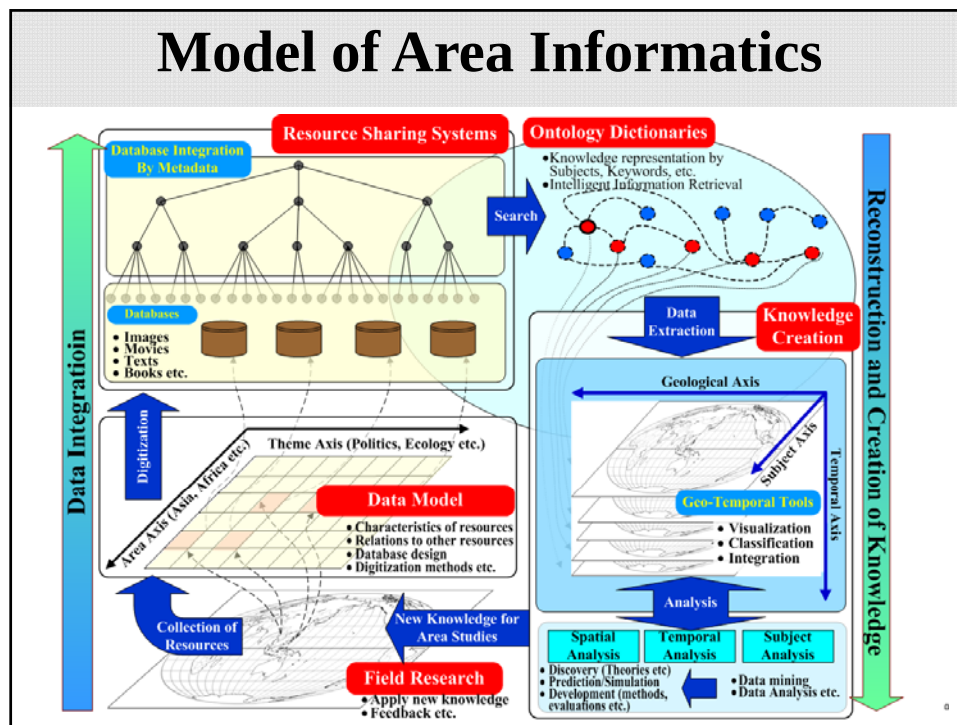
Area Study and Area Informatics

- **Area Study is an Interdisciplinary Science**

- Understanding/comparing areas comprehensively
- Diverse languages/subjects/disciplines/methodologies:
 - history, literature, religions, politics, economics, ethnology, folklore, agriculture, environment, agriculture, etc.

- **Area Informatics**

- Informatics paradigm in area studies
- Focusing on quantitative analysis
 - Objective, comparative and reproducible approaches
 - Spatiotemporal attributes of events
- Knowledge discovery supports
 - Integration of disciplines
 - Creation of hypotheses



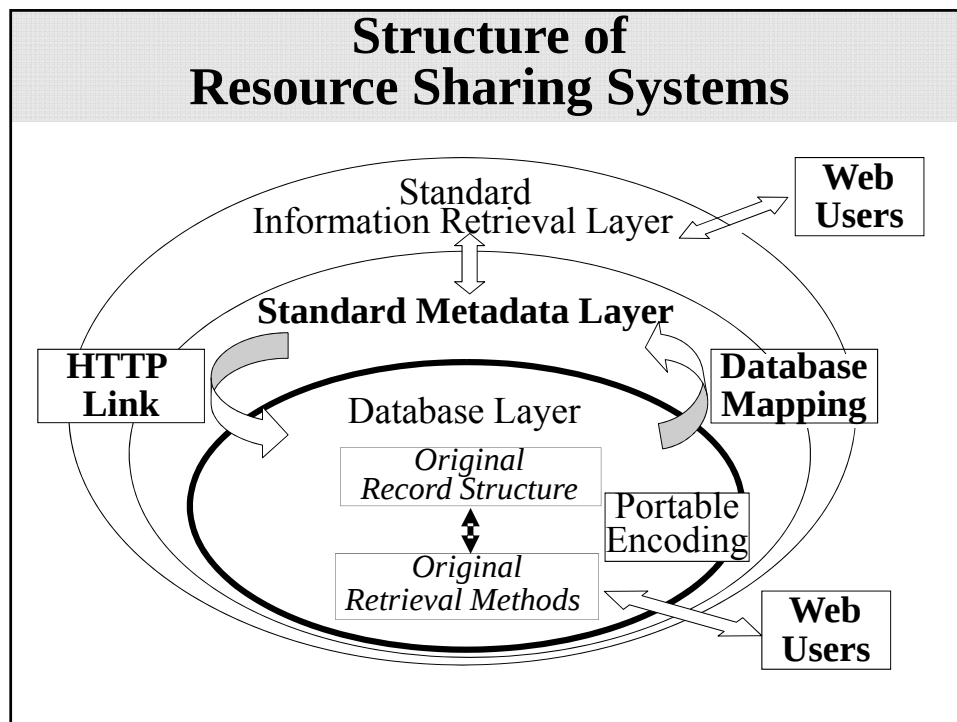
Databases

Databases of CIAS - Basis of Area Informatics -

- **Bibliographic Data (Specific Data => MODS)**
 - BPP (British Parliament Papers) : catalogues + map images
 - Islamic Magazines in SE Asia: catalogue + text images
 - Movies (India, Malaysia) : catalogue + jacket images + movies
 - Turkestan Collection: catalogues + text images
 - Elections and Parties Database of Post Socialism Countries: fact data
- **Archival Data: EAD+MODS+METS**
 - Field Research Photos: catalogue + photo images
- **Full Text Data**
 - Concordance of The Law of Three Seals: full text data
- **Another Data**
 - Digital gazetteers
 - Digital calendars
 - *Demographic data*
 - *Natural disasters*
 - *Base maps (images, boundaries, place names etc.)*

Resource Sharing Systems

- **Resource Sharing System**
 - **Resource Sharing System** is a framework to retrieve various databases on the internet seamlessly
 - **Each Database:** has its own data structure in accordance with its domain specific data model
 - **Seamless:** means that users can retrieve every databases on the Internet by one operation without conscious of record structures, retrieval operations, locations, and medias
- **Applying Some Standards**
 - Database (Portability)
 - Data structure (Standard Metadata)
 - Retrieval (Standard Information Retrieval)



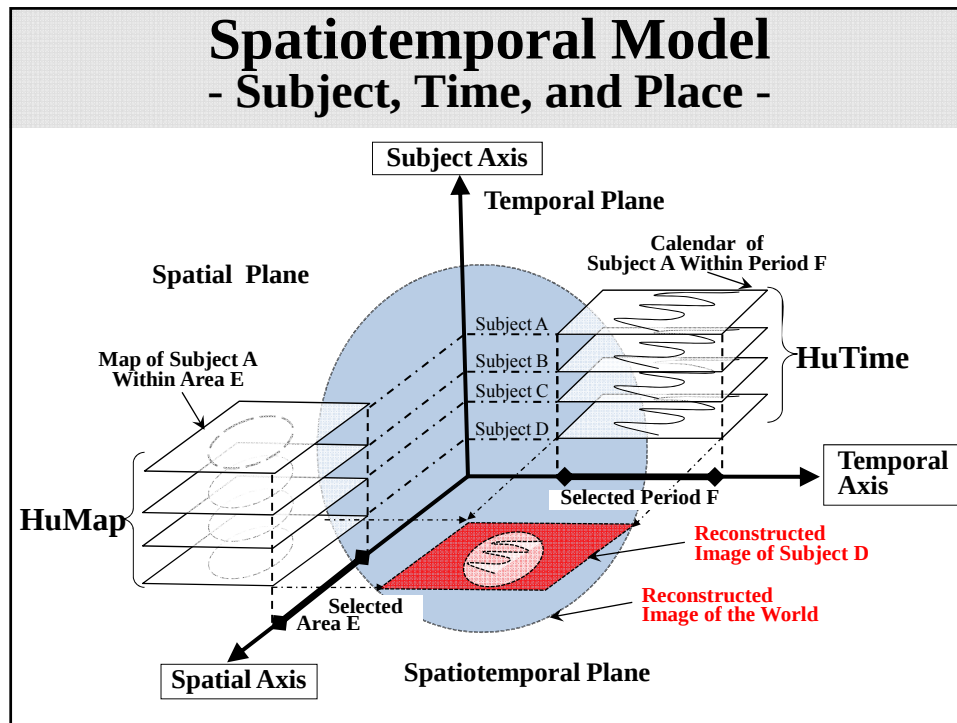
Resource Sharing Schema of CIAS

- **Original Databases: Portable/Readable Encoding**
 - XML
- **Standard Metadata**
 - MODS
 - EAD
 - METS
- **Standard Information Retrieval**
 - Z39.50 and SRW (Search Retrieve Web service)
- **Geo-temporal Aspects**
- **Example of Resource Sharing Systems**
 - National Institutes of Humanities
 - CIAS (Kyoto University)

CIAS Resource Sharing System

項目	内容
titleInfo	PAPERS RELATING TO THE RED RIVER SETTLEMENT: V2: RETURN to an Address from the Honourable House of Commons to His Royal Highness The Prince Regent, dated 28th June 1819: for Copies or Extracts of the Official Communications which may have taken place between the Secretary of State and the Provincial Government of Upper or Lower Canada, relative to the destruction of the settlement on the RED RIVER, to any legal Proceedings thereon in the Courts of Upper or Lower Canada, or to any Complaints made of those Proceedings by Lord Selkirk, or the Agents of The Hudson's bay or the North-West Companies; also, for Copies or Extracts of the Reports made by the Commissioners of Special Inquiry, appointed to inquire into the Offences committed in the Indian Territory, so far as the same can be made public without prejudice to the Public Service, or to judicial Proceedings now pending in Canada. Ordered, by The House of Commons, to be printed, 12 July 1819.
genre	Commons
physicalDescription	0
abstract	RED RIVER
note	287 RD1_0225
identifier	0129 0026500 ?

Spatiotemporal Data Processing



Database Retrieval by Spatiotemporal Attributes

The screenshot shows a web application for database retrieval by spatiotemporal attributes. The interface includes a map of Southeast Asia with a red pin, a sidebar with navigation options, and a main panel with search criteria and results.

Navigation Options:

- 操作 (Operation)
- コンテンツ (Content)
- プレビュー (Preview)
- 移動・削除・編集 (Move, Delete, Edit)
- 入力項目 (Input Items)
- 資料情報 (Data Information)
- 資料情報 (Data Information)
- 時空間情報 (Spatiotemporal Information)

Search Criteria:

- 開始年月日 (Start Date): 1970
- 終了年月日 (End Date):
- 北西端 (Northwest Corner): 緯度 (Latitude): 19.518375478601556, 経度 (Longitude): 98.3056640625
- 南東端 (Southeast Corner): 緯度 (Latitude): 18.646745142670608, 経度 (Longitude): 102.4365234375

Results:

SLIDE FILE: 1970s 貝葉調査 タイ

Retroactive spatiotemporal data input is difficult and time-consuming

HuMap

-Spatial Data Analysis Tool -

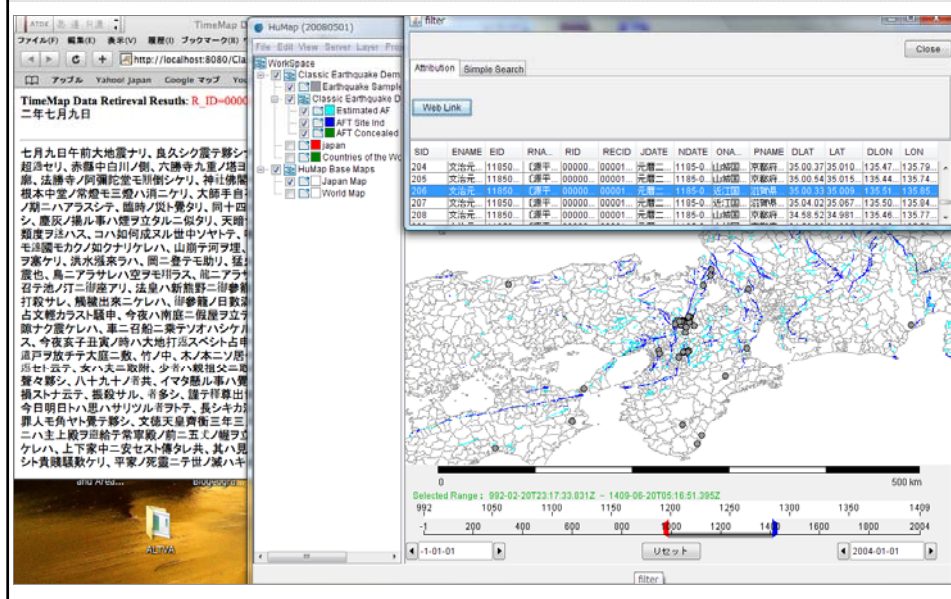
● Basic Viewer

- Arrange/display various data by place and time
- Process different coordinate systems
- Multi-layered viewer
 - ESRI shape file, CSV, XML metadata, JPEG, JPEG2000, TIFF, PNG, PPM, GIF
 - Layer selection, change layer order, create new layers, delete layers
 - Change symbol/color/size/α-value of a feature
 - Zoom-in/out by place and time
- Import/export layer data
- Choropleth Map
- Animations (tracking)
- Web-link
- Put and retrieve annotations on layers

● Functions as a Spatial Tool

- Link with the clearing house
- Retrieve objects by place, time, subject
 - Simple search function to select specific features on a layer
 - SQL support
- Logical operations between layers (Intersection, Union, Merge and so on)
- GIS functions (Dissolve, Buffering, Clipping, Tracking and so on)
- JAVA and R plug-ins for advanced analysis (under construction)

Typical View of HuMap



HuTime

-Temporal Data Analysis Tool-

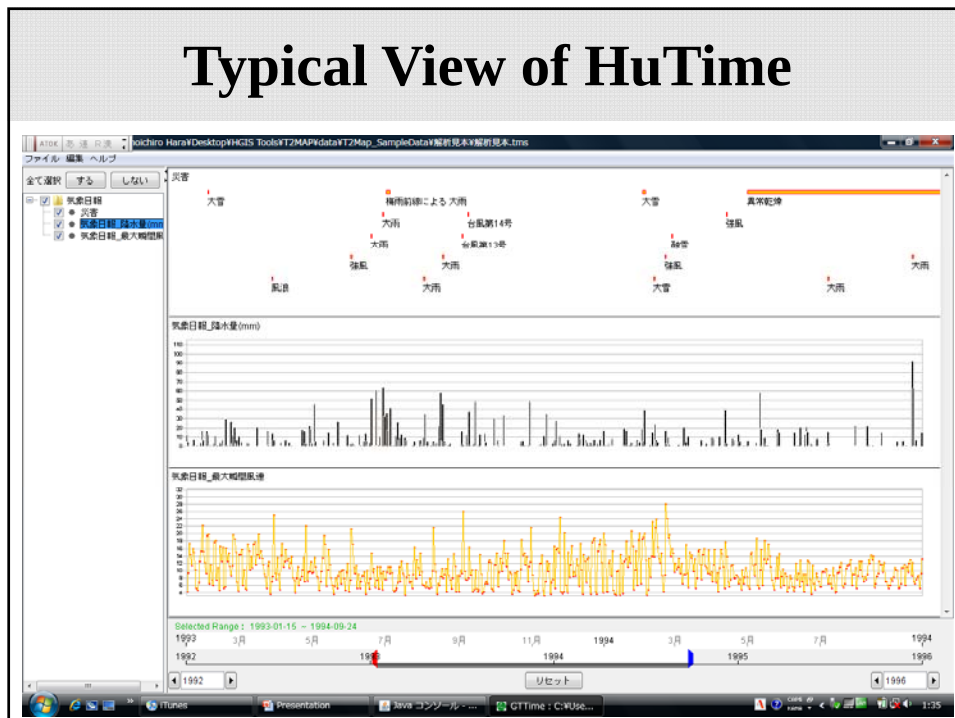
● Basic Viewer

- Arrange/display various data by time
- Process different calendar systems
- Multi-layered viewer
 - CSV, XML metadata, JPEG, GIF
 - Layer selection, change layer order, create new layers, delete layers
 - Change symbol/color/size/ α -value of a feature
 - Zoom-in/out by time
- Import/export layer data
- Web-link
- Put and retrieve annotations on layers

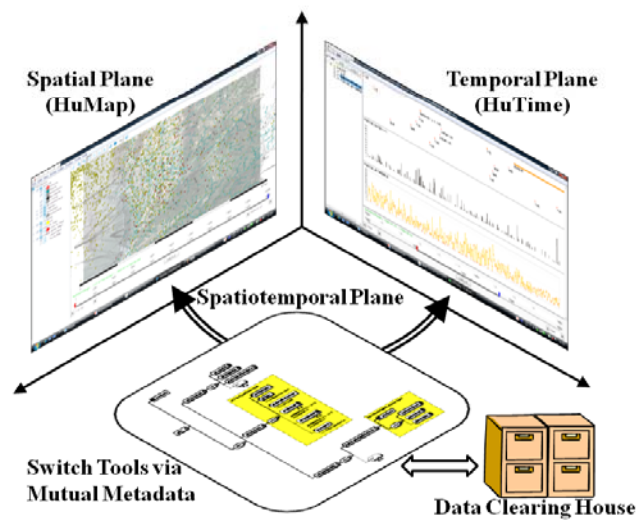
● Functions as a Temporal Tool

- Link with clearing house (under construction)
- Retrieve data by Time and subjects
 - Search/filter functions to select specific features on a layer
- Logical operations between layers
- Analyze periodicity, causal relation etc (under consideration)

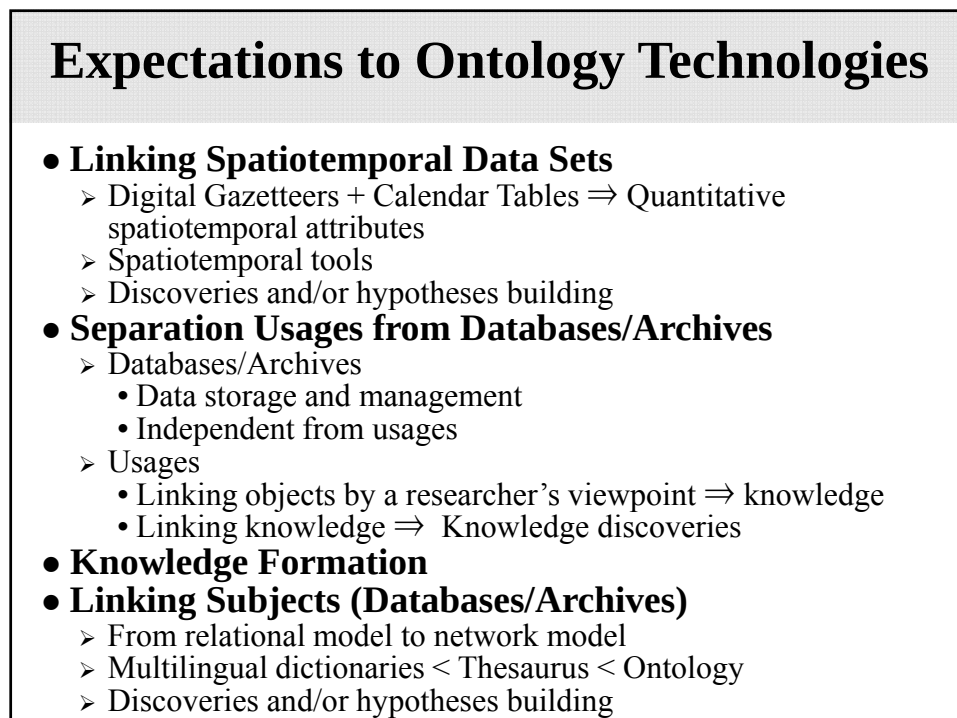
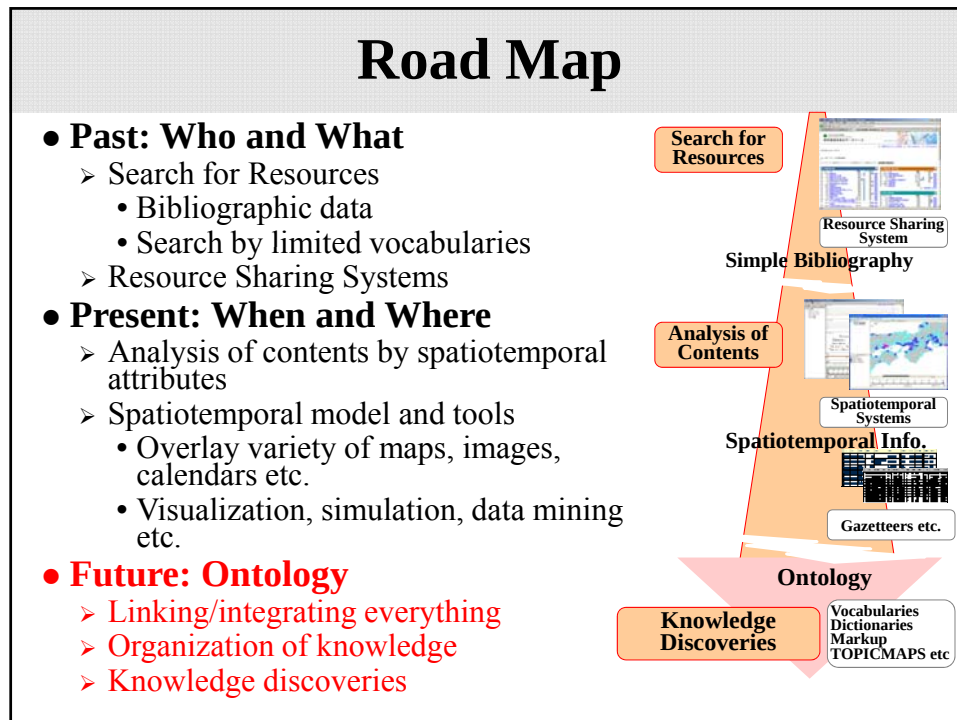
Typical View of HuTime



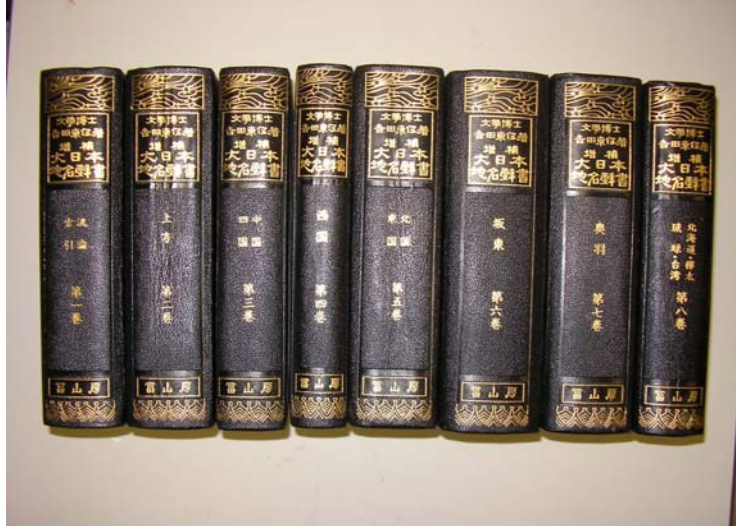
From Space and Temporal Tools to A Spatiotemporal Tool



Next Steps



Place Name Ontology - The Japanese Historical Gazetteer -



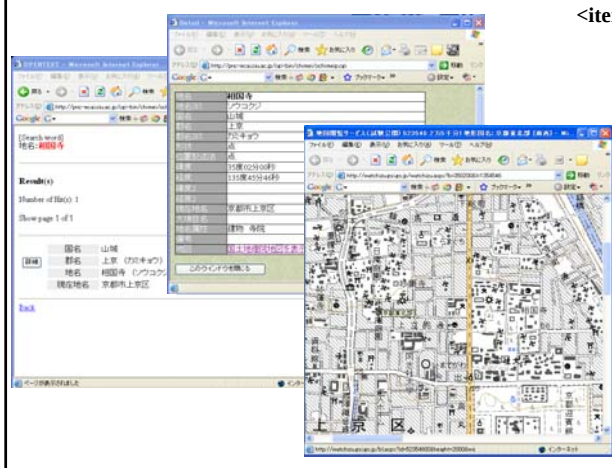
A Resource of Gazetteer
(The Dictionary of Place Names in Greater Japan:大日本地名辞書)

Compiled Gazetteer Data - Example -

Past Names			Inclusion in the Past			Present Names		Present Inclusion			Coordinates				Feature Types			16	17
番号	地名	国	都府県	形状	位置記述	現在地名a	現在地名b	現在地名c	緯度	経度	緯度	経度	現在名称	巻	ページ	大項目名	地名属性	備考	
11997	茅山	美濃																	
38325	飛騨	飛騨		3	岐阜県				36.8.54	137.15.14				5	509	飛騨国		2	
38338	飛騨山脈	ヒダ	飛騨			岐阜県			36.7.21	137.38.52				5	509	飛騨国		33	
38391	飛騨国	ヒダ	飛騨	3		岐阜県			36.8.34	137.15.14				5	509			2	
38400	美濃国	ヒダ	飛騨	3		岐阜県			36.8.34	137.15.14				5	509	飛騨国		2	
38558	飛騨	ヒダ	飛騨	3		岐阜県			36.8.34	137.15.14				5	510	飛騨国		2	
38777	飛騨川	ヒダ	飛騨	2	2	高山市	美濃加茂市		36.5.8	137.32.34	35.26.43	137.3.3		5	510			22	
38884	飛騨高原	ヒダ	飛騨	1	1				36.8.34	137.15.14				5	510	飛騨川		34	
38888	飛騨谷	ヒダ	飛騨	飛騨谷	ヒダダニ	1	1	下呂市	加茂郡	35.39.41	137.9.34			5	510			9 郡と市界	
34401	飛騨工	ヒダ	飛騨	飛騨谷	ヒダダニ									5	510	飛騨国		役職名?	
4458	大船戸	オオフナト	飛騨	飛騨谷	ヒダダニ	1	1	下呂市		35.39.46	137.9.46		大船渡	5	511	金山		8	
18447	金山	カナヤマ	飛騨	飛騨谷	ヒダダニ	1	1	下呂市		35.39.41	137.9.34			5	511			4	
18459	上麻生	カミアソウ	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡七宗町		35.32.38	137.7.10			5	511			5	
14892	神田郷	カノダ	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡東白川町		35.38.33	137.18.29			5	511			6	
15817	神土	カント	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡東白川町		35.38.33	137.18.29			5	511			8	
15741	神淵	カネツチ	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡七宗町		35.34.39	137.5.22		神淵	5	511			5	
16252	桐洞	キリボラ	飛騨	飛騨谷	ヒダダニ	1	1	下呂市		35.08.43	137.7.36		萱田桐洞	5	511			8	
17801	黒川	クロガハ	飛騨	飛騨谷	ヒダダニ	2	2	加茂郡白川町	加茂郡白川町	35.35.47	137.18.12	35.35.9	37.11.55	5	511	白川		22	
21287	黒川	ササガハ	飛騨	飛騨谷	ヒダダニ	1	1	下呂市		35.38.37	137.6.23		萱田菅洞	5	511	桐洞		8	
21651	白川	サシ	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡白川町		35.40.34	137.16.15			5	511	白川		5	
22734	七宗山	シチノウ	飛騨	飛騨谷	ヒダダニ	1	1	加茂郡七宗町		35.35.53	137.8.22			5	511			21	

Yoshida(about 49,000)+Shrine(about 2,800) +Temple(about 78,000) + Kasei-zu (about 20,000) = about 149,800 entries

Example of Digital Gazetteer



```

<item pid='26682'>
  <kuni>山城</kuni>
  <gun>上京</gun>
  <gunyomi>カミキョウ</gunyomi>
  <placename reading='ソウゴクジ'>
    相国寺
  </placename>
  <pname1>京都市上京区</pname1>
  <pname2></pname2>
  <pname3></pname3>
  <shp>1</shp>
  <loc>1</loc>
  <lat>35.2.0</lat>
  <long>135.45.46</long>
  <lat2></lat2>
  <long2></long2>
  <altname></altname>
  <parent></parent>
  <attribute>13</attribute>
  <page>23</page>
  <remarks>
  </item>
  
```

Dates Ontology - Calendar Table -

Julian Day	Japanese Calendar	Era Name	Year	Month	Day	Julius Gregorian Calendar
2342088	元禄13年3月8日	元禄	13	3	8	1700年4月26日
2342089	元禄13年3月9日	元禄	13	3	9	1700年4月27日
2342090	元禄13年3月10日	元禄	13	3	10	1700年4月28日
2342091	元禄13年3月11日	元禄	13	3	11	1700年4月29日
2342092	元禄13年3月12日	元禄	13	3	12	1700年4月30日
2342093	元禄13年3月13日	元禄	13	3	13	1700年5月1日
2342094	元禄13年3月14日	元禄	13	3	14	1700年5月2日
2342095	元禄13年3月15日	元禄	13	3	15	1700年5月3日
2342096	元禄13年3月16日	元禄	13	3	16	1700年5月4日
2342097	元禄13年3月17日	元禄	13	3	17	1700年5月5日
2342098	元禄13年3月18日	元禄	13	3	18	1700年5月6日
2342099	元禄13年3月19日	元禄	13	3	19	1700年5月7日

- Every date is arranged by Julian Day
- It is easy to add another (country/area) calendars

Example of Digital Calendar System

和中西暦変換システム
The Interactive Conversion System Between The Japanese Calendar, The Chinese Calendar and The Christian Era

和暦 (The Japanese Calendar)

天皇 (Emperor)

元号 (The Name of a Japanese Era)

年 (Year)

月 (Month) 閏月 (Leap) ☐

日 (Day)

西暦 (The Christian Era)

年 (Year) 月 (Month) 日 (Day)

中暦 (The Chinese Calendar)

王朝 (dynasty)

統治 (reign)

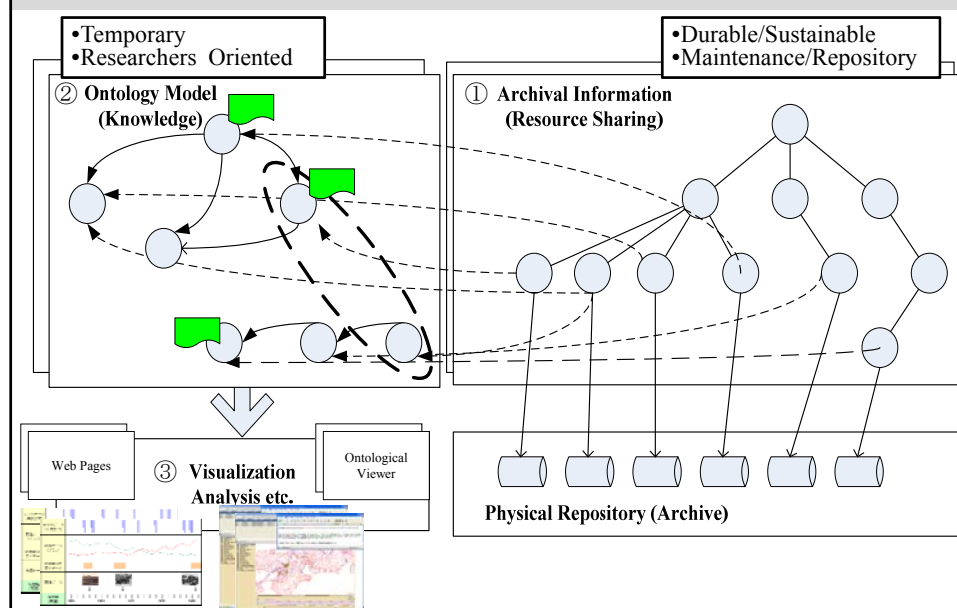
時代 (period)

年 (Year)

月 (Month) 閏月 (Leap) ☐

日 (Day)

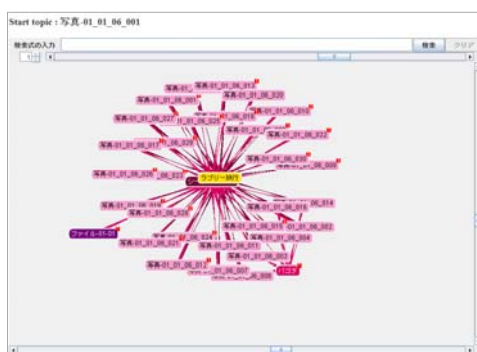
Separation of Usages from Archives



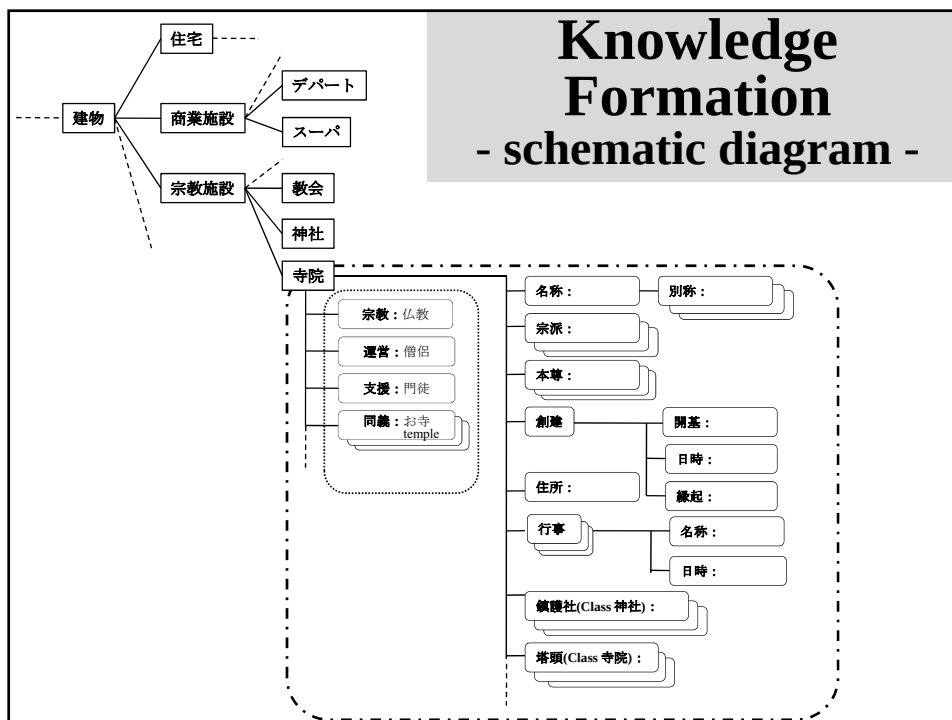
Separation of Usages from Archives - CIAS Archives and Topic Maps -



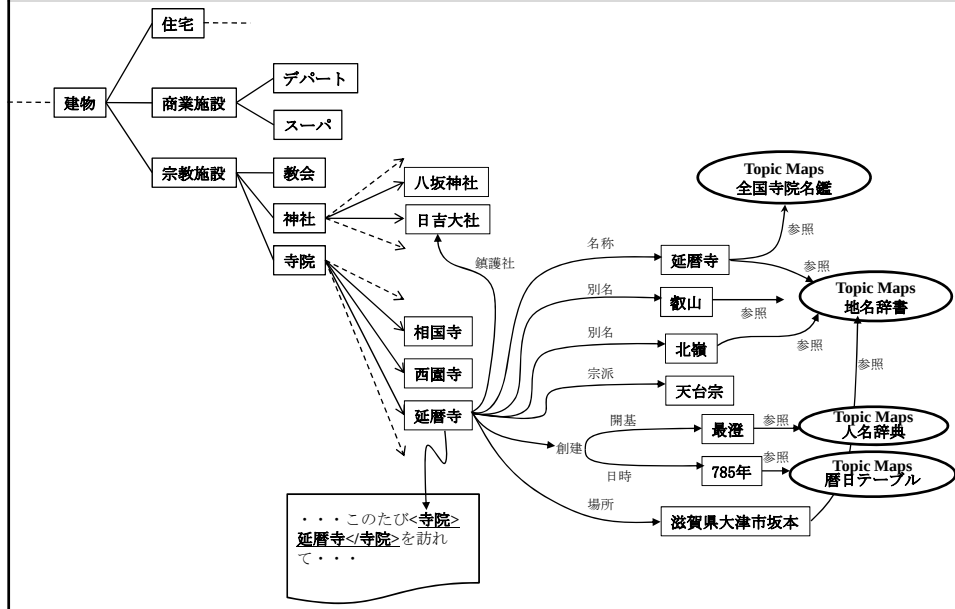
CIAS Archive System



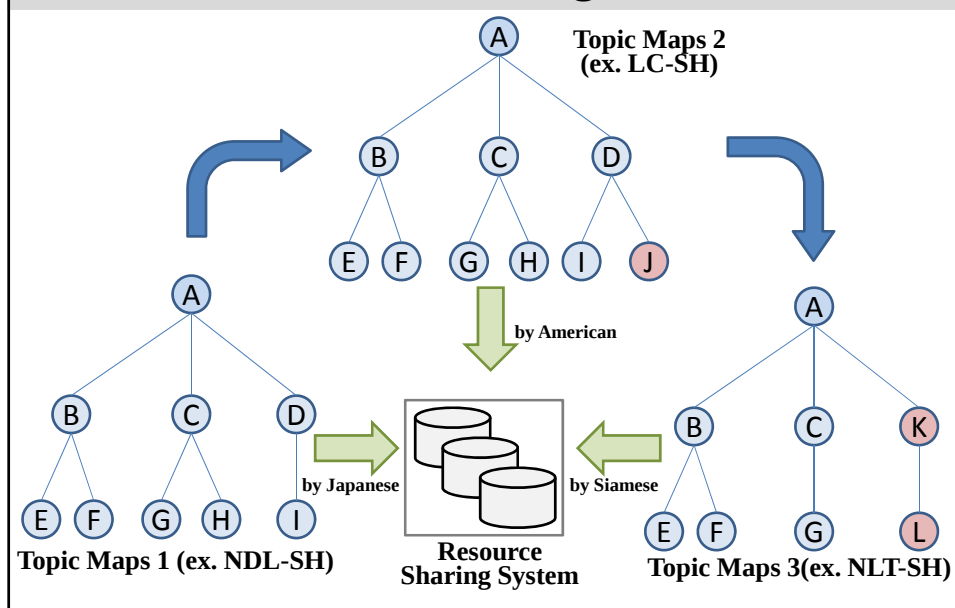
Vizigator



Knowledge Formation and Linking - schematic diagram -



Linking Subjects - schematic diagram -



Thank You for Your Attention

Contact Address

Shoichiro HARA (shara@cias.kyoto-u.ac.jp)
Center for Integrated Area Studies (CIAS)
Kyoto University

Contributors (HGIS Project)

Mamoru SHIBAYAMA	Tatsuki SEKINO
Masatoshi KUBO	Tsunekazu KATO
Ikuo OKETANI	Yoshikatsu NAGATA
Toshihiko KISHI	Haruyoshi GOTO
Hitroshi KWAGUCHI	Mitsuru AIDA
Wataru IJJIMA	Masatoshi ISHIKAWA
	Hidefumi OKUMURA

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