Getty Thesaurus of Geographic Names®
Introduction and Overview

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Preface

- This presentation is an overview of TGN
- TGN is available in an online search interface, licensed as XML and relational tables, and as Linked Open Data (LOD)
http://www.getty.edu/research/tools/vocabularies/tgn/index.html
- For a full discussion of fields and editorial rules, see the TGN Editorial Guidelines
http://www.getty.edu/research/tools/vocabularies/guidelines/index.html#tgn
- For the history of TGN, see About TGN
http://www.getty.edu/research/tools/vocabularies/tgn/about.html
- Questions? Contributions? Send an email to us at vocab@getty.edu
Enabling research and discovery for digital art history
What are the Getty vocabularies?

- *Catherine wheel* or *rose window? Mona Lisa* or *La Gioconda? Thebes* or *Diospolis?*
- Scope includes visual art, architecture, other cultural heritage works, conservation, archaeology, archival materials, visual surrogates, and related bibliographic materials
- The AAT, TGN, and ULAN contain multilingual terminology and other related data
- CONA is a resource in development, linking rich metadata for works from multiple sources and contributors
• Getty vocabularies are valued as authoritative
  o Grow through contributions from experts
  o Contributors and sources are cited

• Compiled, merged, edited, and published by the Getty Vocabulary Program and our technical team

• **Data is made available in various ways**: via online searching; relational tables, XML format, Web services APIs
  o **Now as Linked Open Data**: structured and published to make it openly accessible and shareable on the Semantic Web
    ▪ **Open Data Commons Attribution License (ODC-By) v1.0**
    ▪ Allows sharing, creation, adaptation of data with attribution
The Getty Vocabularies

Discover, link, access, retrieve, research, catalogue, index
Explore art, architecture, cultural heritage, conservation, archaeology, and beyond

Search Tools & Databases

- Primo Search
- Getty Research Portal
- Collection Inventories & Finding Aids
- Photo Archive
- Research Guides & Bibliographies
- Digital Collections
- Article & Research Databases
- Collecting & Provenance Research
- BHA & RILA
- Getty Vocabularies
  - Art & Architecture Thesaurus (AAT)®
  - Cultural Objects Name Authority (CONA)®
  - Getty Thesaurus of Geographic Names (TGN)®
  - Union List of Artist Names (ULAN)®
- Contribute
- Editorial Guidelines
- Getty Vocabularies as Linked Open Data
- Frequently Asked Questions

Getty Vocabularies as Linked Open Data

The Getty vocabularies are constructed to allow their use in linked data. A project to publish AAT, TGN, ULAN, and CONA to the LOD (Linked Open Data) cloud is underway. The documents on this page contain news and presentations about releasing the Getty vocabularies as LOD. These materials are subject to frequent modification and addition.

- News and Status of the Project
- What is LOD?
- Introduction to Getty Vocabularies as LOD (PDF, 3.8 MB, 46pp)
- Linked Open Data Flier (PDF, 1 MB, 1pp)
- List of External Advisors (PDF, 68kB, 7pp)

The AAT and TGN are now available as LOD. They are published under the ODC-By 1.0 license.

- Developers and programmers, technical documentation to help you explore the AAT and TGN data is available at the SPARQL endpoint at vocab.getty.edu
The Getty Vocabularies

- Getty vocabularies are thesauri compliant with national (NISO) and international (ISO) standards for thesaurus construction.
- They are compliant with / map to other standards:
  - CDWA (Categories for the Description of Works of Art)
  - CCO (Cataloging Cultural Objects)
  - VRA Core (Visual Resources Association core categories)
  - LIDO (Lightweight Information Describing Objects)
  - etc.
• Features that allow the Getty vocabularies to be used in cataloging, retrieval, and linking
  o Each Getty vocabulary record, each term, and other data are identified by **unique numeric IDs**
  o Many other fields are controlled by lookup lists
  o The vocabularies are linked to each other
  o The vocabularies share a core data structure
TGN in context
enabling digital art history

- *Art & Architecture Thesaurus ®*
  AAT = terms for generic concepts, relationships, other data
  - *(e.g., watercolors, 玉器, amphora, asa-no-ha-toji)*
- *Getty Thesaurus of Geographic Names ®*
  TGN = names for administrative, physical places, relationships, historical information, coordinates, other data
  - *(e.g., Diospolis, Acalán, Ottoman Empire, Ganges River)*
- *Union List of Artist Names ®*
  ULAN = names for people, corporate bodies, biography, relationships, other data
  - *(e.g., Christopher Wren, Altobelli & Molins, Anp’yŏng Taegun)*

- *[Cultural Objects Name Authority ®]*
  CONA = not only titles/names of art and architecture
  - *(e.g., Mona Lisa, Livre de la Chasse, Chayasomesvara Temple)*
- **In development:** CONA links rich metadata for works to allow a conduit for research and discovery in the broader, ever expanding arena of digital art history
**NAMES / TERMS**
- multiple names, one is flagged preferred; dates for names

**Language**

**Contributors**

**Sources**

**ASSOCIATIVE RELATIONSHIPS**
- links between subjects, dates

**SUBJECT**
- main table
  - basic record information, unique ID, parent_key, record type, descriptive/scope note, flags

**All Getty Vocabularies Have Same Core Structure**

- Equivalence relationships between terms/names that are linked to the same concept ID
- Hierarchical relationships between different concept IDs; each record is linked to its immediate parent
- Associative relationships between different concept IDs; are reciprocal
SUBJECT
MAIN TABLE
basic record information, unique ID, parent_key, record type, descriptive/scope note, flags

NAMES / TERMS
multiple names, one is flagged preferred; dates for names

PLACE TYPES/ROLES
multiple place types or roles, one is flagged preferred, dates

ASSOCIATIVE RELATIONSHIPS
links between subjects, dates

Contributors

Biography
display bio, birth/death dates, places

Revision History
editor name, action, date of action

Coordinates

Sources

Events
event, dates

Nationality

• TGN, ULAN, and CONA have additional tables

Language
**SUBJECT**

MAIN TABLE

basic record information, unique ID, parent_key, record type, descriptive/scope note, flags

• Controlled values identified by IDs, other shorter controlled lists in the DB simply list terminology (e.g., “preferred,” “non-preferred”)

• CONA is first to actually link to the other vocabularies for some fields, rather than maintaining refreshable lists

**NAMES / TERMS**

multiple names, one is flagged preferred; dates for names

**Coordinates**

**Contributors**

**Sources**

**Events**

**Biography**

**ASSOCIATIVE RELATIONSHIPS**

links between subjects, dates

**Language**

controlled

**Relationship Types**

controlled

**Contributor**

controlled

**Nationality**

controlled

**Location**

controlled

**Events**

controlled

**Place Type / Role**

controlled

**Source**

controlled
See Introduction to Controlled Vocabularies and Editorial Guidelines for full discussion.
What Is TGN?

- Data and fields
- Not GIS, rich thesaurus focusing on places important for art, architecture, related disciplines
- Multilingual
- May be linked to GIS and maps
TGN, the Getty Thesaurus of Geographic Names®

Names, other information for current & historical administrative places (cities, nations, empires) and physical features (e.g., Firenze, Roman Empire, Ganges River).

Current totals: Thousands of records are added every year. As of 26 May 2015, the TGN contains 1,475,816 published "records"; there are 1,500,129 records, including unpublished candidates. The total number of place names is 2,156,896

- **Thebes or Diospolis?**
- TGN is a structured vocabulary
- TGN is a thesaurus compliant with ISO standards
- Including names, links, coordinates, descriptions, and other metadata for extant and historical cities, empires, archaeological sites, and physical features important to research of art and architecture
- Not GIS; TGN may be linked to GIS, maps, and other geographic resources
TGN, the Getty Thesaurus of Geographic Names®

Names, other information for current & historical administrative places (cities, nations, empires) and physical features (e.g., Firenze, Roman Empire, Ganges River).

Current totals: Thousands of records are added every year. As of 26 May 2015, the TGN contains 1,475,816 published "records"; there are 1,500,129 records, including unpublished candidates. The total number of place names is 2,156,896.

- TGN includes formerly inhabited places, archaeological sites, and historical places with unknown exact locations (i.e., “lost settlements”)
- It focuses on historical places and others important to the study of art, architecture, archaeology, and related disciplines
- It grows through contributions from archaeology projects, conservation projects, large national geographic databases, the expert user community, scholars, etc.
**TGN, the Getty Thesaurus of Geographic Names®**

**Sample record**

<table>
<thead>
<tr>
<th>ID: 7011179</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Names:</strong></td>
</tr>
<tr>
<td>Siena (it, en, es, fr, nl, de)</td>
</tr>
<tr>
<td>Σίενα (el)</td>
</tr>
<tr>
<td>Siyenah 銀耶納 (zh)</td>
</tr>
<tr>
<td>シエーナ (ja)</td>
</tr>
<tr>
<td>Sienese (en-adj)</td>
</tr>
<tr>
<td>Sienna (h-en)</td>
</tr>
<tr>
<td>Sena Julia (h-la)</td>
</tr>
<tr>
<td>Sanna (h)</td>
</tr>
<tr>
<td>Saena (h)</td>
</tr>
</tbody>
</table>

| **Hierarchical Rel. (polyhier.)** |
| World (facet) |
| ... Europe (continent) |
| ... Italy (nation) |
| .... Tuscany (region) |
| ...... Siena (province) |
| .......... Siena (inhabited place) |

| **Place Types** |
| inhabited place settled by Etruscans (flourished by 6th century BCE) |
| city archiepiscopal see |
| commune (administrative) since 1125 cultural center university center world heritage site |

| **Latitude:** 43°19′07″N (43.3180) |
| **Longitude:** 11°19′50″E (11.3300) |
| **Elevation:** 1056.430 feet (322.0000 meters) |

| **Note:** Siena was founded as an Etruscan hill town; later was the Roman city of Sena Julia (3rd century BCE). It flourished under the Lombard kings (6th century CE) and was a Medieval self-governing commune ... |

| **Contributors:** BHA, FDA, GRLPS, VP |

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TGN is a thesaurus

- Thesaurus: A semantic network of unique concepts
- Thesauri may be monolingual or multilingual
- Thesauri may have the following three relationships:
  - Equivalence Relationships
  - Hierarchical Relationships
  - Associative Relationships

---

La Piana (deserted settlement)\text{associative} Pisa (inhabited place)

---

World (facet) \text{hierarchical}:

- Europe (continent)
- Italy (nation)
- Tuscany (region)
- Siena province

---

\text{Siena} \\
Σίενα \\
Siyenah

\text{锡耶纳} \\
Σιένα \\
锡耶纳

\text{Sienese} \\
Sienese

\text{Sienna} \\
Saена Julia

\text{Sanna} \\
Senna

\text{Senae}
SCOPE OF TGN

- TGN is a thesaurus, compliant with ISO and NISO standards for thesaurus construction
- It contains hierarchical, equivalence, and associative relationships
- Is TGN a GIS (Geographic Information System)? No. A GIS is designed to capture and manage, geographically referenced data; coordinates are key
- TGN focuses instead on names and relationships appropriate to a thesaurus for art, architecture, conservation, rich historical data
- While many records in TGN include coordinates, these coordinates are approximate and are intended for reference only; TGN is not linked to or capable of constructing maps
- However, TGN could be used with GIS to link to maps and to improve retrieval of GIS based on relationships, including synonyms (variant names)
**SCOPE OF TGN**

- TGN places include political entities and physical features
- Scope is global, some extraterrestrial
- Includes all current continents and nations
- Historical places, including nations and empires
- Prehistory to the present

- Real places, not mythical
- May include formerly inhabited places, historical places with unknown exact locations “lost settlement”
- Focus on places important to art and cultural heritage
- Modern world is maintained via national databases USGS and NIMA; framework upon which historical places are inserted, from contributors
• This chart is for Web online searching only
• A typical month in 2014
• Other access via licensed files and their implementations
• LOD downloading and usage
Data Elements in TGN

Overview of fields
Required Fields for TGN

- preferred name
- variant names, as stated in Rules
- source(s) for the names
- place type(s) (e.g., inhabited place)
- hierarchical position
List of Major Fields for TGN in VCS editorial system

3.1 HIERARCHICAL RELATIONSHIPS
- Parents (required)
- Sort Order (required-default)
- Historical Flag (required-default)
- Dates for relationship to parents
- Parent string (required-default)
- Hierarchy Relationship Type (required-default)

3.2 IDENTIFYING NUMBERS, STATUS FLAGS, I
- Subject ID (required-default)
- Parent Key (required)
- Merged Status (required-default)
- Published Status (required-default)
- Review Status (required-default)
- Record Type (required-default)
- Candidate Status (required-default)
- Label (required-default)
- Contributors for Subject Record (required)
- Sources for the Subject Record (required)

3.3 NAMES
- Term ID (required-default)
- Name (required)
- Preferred Flag (required-default)
- Qualifier
- Sequence Number (required-default)
- Historical Flag (required-default)
- Term Type (required-default)
- Part of Speech (required-default)
- Vernacular Flag (required-default)
- Language for Names (required-default)
- Preferred Flag for Language (required-default)
- Language Status (required-default)
- Contributor for Name (required-default)
- Preferred Flag for Contributor (required-default)
- Sources for Names (required)
- Page Number for Term Source (required)
- Preferred Flag for Source (required-default)
- Dates for Names
- Display Name Flag (required-default)
- AACR Flag (LC heading)
- Other Flags
- Assigned To note

- Data Dictionary for release formats are available from links on this page
- http://www.getty.edu/research/tools/vocabularies/obtain/download.html
List of Major Fields for TGN in VCS editorial system

3.4 DESCRIPTIVE NOTE
- Descriptive Note
- Sources for the Descriptive Note
- Contributors for the Descriptive Note
- Language of Descriptive Note

3.5 ASSOCIATIVE RELATIONSHIPS
- Related Places
- Relationship Type
- Historical Flag
- Dates for Associative Relationship

3.6 PLACE TYPE
- Place Type (required)
- Preferred Flag (required-default)
- Sequence Number (required-default)
- Historical Flag (required-default)
- Dates for Place Type

3.7 COORDINATES
- Coordinates
  - Latitude: Degree; Minute; Second; Direction; Decimal Degrees
  - Longitude: Degree; Minute; Second; Direction; Decimal Degrees
- Bounding Coordinates
  - Least Latitude: Degree; Minute; Second; Direction; Decimal Degrees
  - Most Latitude: Degree; Minute; Second; Direction; Decimal Degrees
  - Least Longitude: Degree; Minute; Second; Direction; Decimal Degrees
  - Most Longitude: Degree; Minute; Second; Direction; Decimal Degrees
- Elevation: Feet; Meters
List of Major Fields for TGN in VCS editorial system

3.8 ADMINISTRATIVE FLAGS, NOTES, AND REVISION HISTORY
Comment Flag
Problem Flag
Assigned To
Special Project
Facet
Legacy ID
Class Notation
Image
Index Note
Not Found Note
Status Note
Editor Note
Revision History *(required-default)*
## Record Type

- **Type** designation that characterizes the TGN record
- Record types include the following:

### A - Administrative entity
- Includes all inhabited places, nations, and any other entity that is defined by human-made, administrative boundaries. Also included is any manmade structure that is also included as a geographic entity in standard geographic sources, such as canals and monasteries. Note that the architectural work itself would be recorded in CONA (linked to this TGN entity as "site of"), and the administrative entity would be recorded in ULAN (also linked to TGN and CONA, as appropriate).

### P - Physical feature
- Physical features include continents, rivers, mountains, and any other natural feature on the planet; if in doubt if a feature is manmade or physical (*lake* or *reservoir*?), assume it is physical until proven otherwise, although the Record Type must agree with Place Type and typically Name.

### B - Both
- Both physical and administrative entity. This is rarely used. If you feel the entity is both a physical feature and an administrative entity, you should make two separate records (e.g., for the island and for the administrative entity, linked through Associative Relationships with boundaries coextensive).

### G - Guide Term
- A Guide Term (also called a *node label*) is a level used to organize the hierarchy into logical segments. In TGN, Guide Terms are used only with historical hierarchies and candidate hierarchies.

### F - Facet
- A facet is a broad division of the hierarchy, generally appearing directly under the Root. In TGN, currently the level *World*, the level *Extraterrestrial Places*, and various candidate hierarchies (designated by their name *temp.parent*) are facets.
Unique, persistent numeric ids

**Subject ID**

- Unique numeric identification for the TGN record
- Each record in the TGN database is uniquely identified by a numeric ID that serves to link the terms and all other pertinent information to the concept record
  
  - ID is unique and generally persistent (permanent)
  - Occasionally an ID may change due to record being unmerged or non-synonymous UFs removed (they then become Descriptors in a new record)
  - Then new IDs are included in the licensed files, and a mapping between defunct and new IDs is provided to licensees

**Term ID:** Names and other information also have unique, persistent IDs
Unique, persistent numeric ids

Subject_ID: 7011179
Record Type: administrative
Label: Siena (inhabited place) (Siena, Toscana, Italia, Europe, World)
Scope Note: Siena was founded as an Etruscan hill town; later it was the Roman city of Senna Julia (3rd century BCE). It flourished under the Lombard kings (6th century CE) [...]
Terms/Names:
- Sienna (C,V,English,U,N) Term ID: 140808 obsolete spelling, but used occasionally
- Σιένα (C,V,Greek,U) Term ID: 1002038443
- 锡耶纳 (C,V,Chinese,U) Term ID: 1002038446
- Σιένα (preferred, C,V) Term ID: 1002038442
- Saena (H,V,Latin-P,U,N) Term ID: 141380 Roman
- Sanna (H,V) Term ID: 181416 medieval
- Senna Julia (H,V,Latin-P,U,N) Term ID: 141380
- Senae (H,V) Term ID: 181416
- Sena (H,V,S,Etruscan-P,U,N) Term ID: 181414
- Senae (H,V) Term ID: 181415

Hierarchical Position:
World (facet) Subject_ID 7029392
- Europe (continent) [P] Subject_ID 1000003
- Italy (nation) [P] Subject_ID 1000080
- Tuscany (region) [P] Subject_ID 7009760
- Siena (province) [P] Subject_ID 7003168
- Siena (inhabited place) [P] Subject_ID 7011179

Additional Parents:
World (facet) Subject_ID 7029392
- Italy (nation) [P] Subject_ID 1000003
- Italian Peninsula (peninsula) [P] Subject_ID 7023981
- Etruria (former group of nations/states/cities) [P,H] Subject_ID 7024113
- Siena (inhabited place) [P,H] Subject_ID 7011179
- sites near Siena date to the Late Etruscan period

Related concepts:
- Code 3301 ally of [... Arezzo ... [inhabited place] Subject_ID 7006072

Place Types:
- inhabited place (preferred, C) [AAT 300008347] [... settled by Etruscans (flourished 6th century BCE)
- city (C) [AAT 300008389]
- archiepiscopal see (C) [AAT 300387236] bishopric was established by Middle Ages, later became an archbishopric; noted for large medieval cathedral
- commune (administrative) (C) [AAT 300387330] since 1125
What is a name in TGN

- Names, appellations, and designations used to identify a place
  - Current, historical, official, local usage
  - May include a “core” name and descriptive designation (e.g., Mount Etna or Región de Arica y Parinacota)
- If in same place record (same subject_ID), names must be exact equivalents, referring to the same place
- If an archaeological site is near but not on the site of a modern town, these are two separate records, not two names in the same record
Examples of Place Names

- vernacular names
- variant names in other languages (English)
- historical names
- transliterations
- variations in spelling, diacritics, punctuation, or capitalization
- nicknames
- translations
- inversions (physical features)
- adjectival forms

Examples:
- Firenze
- Florence
- Fiorenza
- חצורתל
- Tel-Hazor
- 北京
- Heliopolis Syriae
- Asālafpur
- Teotitlán del Camino
- Jogeshwari Cave
- Atakano-seki
- Etruria
- Θῆβαι
Preferred Names

- One name flagged “preferred” overall for record
- “Preferred” name is the name most commonly used
  - Generally vernacular; but English for continents, oceans, historical entities, etc.

- Chosen from authoritative scholarly sources and general reference works in American English
- Include English variant if there is one, flag it
- May have been transliterated into Roman alphabet by your source where necessary
- Please include variant names as well
Preferred Names

Possible preferences indicated for each name

- Record-preferred
- Language-preferred
- Contributor-preferred
- Source-preferred
- Display or Index
- Current or Historical
- Official name, type of code, etc. – “Other flags”
Equivalence Relationships

- one name is required
- many records have multiple names
Equivalence Relationships

- one name is required
- many records have multiple names

Mississippi River
Mississippi
Mississippi, fleuve
Fiume del Missisipi
Fleuve Mississippim
Chicagua
Chucagua
La Grande Riviere
Malabanchia
Malabouchia
Mascicciipi
Meact-Chassipi
### Equivalence Relationships

- **one name is required**
- **many records have multiple names**
- **(online display)**

<table>
<thead>
<tr>
<th>Names</th>
<th>preferred</th>
<th>C, V</th>
<th>Greek (transliterated)</th>
<th>P, U, N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athinai</td>
<td><strong>preferred</strong></td>
<td>C, V</td>
<td>Greek (transliterated)</td>
<td>P, U, N</td>
</tr>
<tr>
<td>Athenai</td>
<td>(C, O)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Athinai</td>
<td>(C, O, Greek (transliterated), U)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ἀθήναι (C, V, Greek, U)</td>
<td>(C, V)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athens</td>
<td>(C, O, English-P, U, N)</td>
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<td>Atenas</td>
<td>(C, O, Spanish-P, U, N)</td>
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<td></td>
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<tr>
<td>Athênes</td>
<td>(C, O, French-P, U, N)</td>
<td></td>
<td></td>
<td></td>
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<td>Athen</td>
<td>(C, O, German-P, U, N)</td>
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<tr>
<td>Atene</td>
<td>(C, O, Greek (transliterated), U)</td>
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<tr>
<td>(Italian-P, U, N)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Ἀθήναι (C, V, Ancient Greek, U)</td>
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<td>Athína</td>
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<td>Afína</td>
<td>(NA, V, Russian)</td>
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<tr>
<td>Afíni</td>
<td>(NA, V, Greek)</td>
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<tr>
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<td>(NA, V, Swedish)</td>
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<td>Atény</td>
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<td>Atína</td>
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<tr>
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<td>(NA, V, Greek)</td>
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<tr>
<td>Ἀθήναι (NA, V, Persian)</td>
<td>(NA, V, Persian)</td>
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<tr>
<td>Afíni</td>
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<tr>
<td>Athenae</td>
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<tr>
<td>Athenae</td>
<td>(H, V, Ancient Greek (transliterated), U, N)</td>
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<tr>
<td>Athine</td>
<td>(H, V, Greek (transliterated), U, N)</td>
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<tr>
<td>τὸ ΚΑΙΣΑΡΩ ΟΤΟΥ (C, V)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**ancient Greek name**

**meaning "glorious city"**
Names in TGN

Firenze (preferred, vernacular, Italian-preferred)
Florence (English-preferred)
Florencia (Spanish-preferred)
Florenz (German-preferred)
Fiorenza (historical) Medieval
Florentia (historical, Latin) name of Roman colony on N bank of Arno
Florentine (adjectival, English)

- All names MUST refer to the same place (e.g., lost sites)
- Record names in mixed case (not all caps)
- Generally only 2 to 4, published variant names, inscriptions, archival names are welcome
Names in TGN

Firenze (preferred, vernacular, Italian-preferred)
Florence (English-preferred)
Florencia (Spanish-preferred)
Florenz (German-preferred)
Fiorenza (historical) Medieval
Florentia (historical, Latin) name of Roman colony on N bank of Arno
Florentine (adjectival, English)

- Prefer the vernacular form commonly used in standard authoritative sources in English language
- Include the preferred English form as well when it differs from vernacular
  - generally only for famous places and large places (nations, mountain ranges)
Multiple Vernacular Names

Strasbourg (preferred, vernacular, French-preferred)
Strassburg (vernacular, German-preferred)
Straßburg (vernacular, German-preferred)
Strossburi (vernacular, Alsatian-preferred)
Estrasburgo (other, Spanish-preferred)
Strateburgum (historical, Medieval Latin)
Argentoratum (historical, Ancient Latin)

- multiple vernacular languages
- important to record all
- prefer the one used in standard sources that also prefer the vernacular (e.g., atlas, gazetteer, NGA/NIMA)
Transliterations, diacritics

Tōkyō (preferred, C,V) ............. after replacing
Kyōto as Imperial capital, 1868
Tokyo (C,V, English-P,U,N)
東京 (C,V, Japanese-P,V,N)
Tokio (H,O, English-U,N) ............ obsolete spelling
Edo (H,V) ............ during Tokugawa Shogunate
beginning 1603
Yeddo (H,V)
Yedo (H,V)
**Transliterations**

T'ainan (preferred, C,V,N)
Tai-nan (C,V,N)
T'ai-nan (C,V,N)
T'ai-nan-shih (C,V,N)
Tainanshi (C,V,N)
Tainanshih (C,V,N)
臺南巿 (C,V,N)
Dainan (H,O,N)
T'ai-wan (H,V,N)
T'ai-yüan (H,V,N)
Ta-yüan (H,V,N)

- Transliterated into the Roman alphabet
- Generally using a transliterated source, but if possible, prefer ISO
- ISO standards provide the preferred transliteration protocol (Pinyin, but include Wade-Giles for access too)
**Display Name, Indexing Name**

Naples (Napoli province, Campania, Italy, Europe)

Napoli (vernacular preferred)
Naples (English-preferred)
Napoli province (display name)

- Flag “display name” = special name flagged for horizontal displays or “headings”
- where simple name is confusing due to redundancy, etc.
VALUES OF JORDAN

**Names and Language Flags**

- al-Urdunn (*Vernacular, preferred*)
  - Al Urdunn (*Vernacular*)
  - Urdunn (*Vernacular*)
- al-Mamlakah al-Urdunnīah al-Hāshimīyah
  - (*Vernacular, official*)
  - Jordan (*preferred English*)
  - Hashemite Kingdom of Jordan (*English*)
  - Jordanie (*French*)
  - Royaume hachémite de Jordanie (*French*)
  - Jordaan (*Dutch*)
  - Jordania (*Spanish*)
  - Giordano (*Italian*)
  - JOR (*ISO3L*)
  - JO (*ISO2L*)
  - ISO400 (*ISO3N*)
  - JO00 (*FIPS*)
- Transjordan (*Historical*) Display Date: until April 1949 Earliest: 1921 Latest: 1949

- vernacular and other languages
- variant transliterations
- preferred English, ISO, and other flags
- preferred vs. official name, not necessarily the longest form
**Names and Date**

- **Siena** (vernacular, preferred) used since 13th century (start: 1200, end: 9999)
- **Sienna** (English) obsolete spelling (start: 1500, end: 1900)
- **Senae** (historical) medieval (start: 800, end: 1500)
- **Sanna** (historical)
- **Saena Julia** (historical) Roman (start: -100, end: 300)
- **Sena Julia** (historical)
- **Sena** (historical) Etruscan (start: -800, end: -100)

- Names may be current or historical
- Names may have display dates
- Years delimiting span are included for retrieval, not displayed to end user
When obvious one city is meant in most cases, lacking other context = “Noted” (“Famous”)
Automatically choose the TGN homograph intended, if the broader context is not given in the contributed record?
1. Editor interaction
2. In some cases, such as place of publication, automatically assume the famous/noted “Boston” Massachusetts is intended.
It is flagged as such in TGN to allow auto-matching.

Boston in Massachusetts is flagged
Comment: Famous
Historical name or separate record?

- If the historical entity is not the same place as the modern counterpart
- Then there should be in separate authority records
- E.g., historical Flanders did not have the same boundaries as modern Belgium; they are NOT equivalents in a thesaurus

World

Europe (continent)
- Bulgaria (nation)
- Belarus (nation)
- Belgium (nation)
- Czech Republic (nation)
- Denmark (nation)
- Germany (nation)
- Spain (nation)
- Flanders (historic region)
  - Aalst (inhabited place)[N]
  - Antwerp (inhabited place)
  - Bruges (inhabited place)[N]
  - Brussels (inhabited place)
  - Gent (inhabited place)[N]
  - Leuven (inhabited place)
In this case, ancient and modern town names are equivalents.

Unique TGN IDs exist for both the place and each name.
Hierarchical Relationships

BTG = Genus/Species (generic)
   AAT hierarchical relationships are usually BTG (bronze is a type of metal)
BTP = Part/Whole (partitive)
   TGN relationships are usually part/whole (Tuscany is part of Italy)
BTI = Instance
   used seldom or never in AAT and TGN, may be used in ULAN:
      a child is an example of the parent, often used with proper names arrayed under a generic terms
      • For the parent Persons, Artists, Picasso is an example of
      • If in some vocabulary or implementation (such as in Gallery Systems’ implementation of TGN), for the parent rivers, Nile is an example of the parent
Hierarchical Relationship in TGN - Whole/Part

- provinces are part of the nation
- displayed with indentation
- indicated by linking each place to its “parent”

Top of the TGN hierarchy (hierarchy root)
.... World (facet)
......... North and Central America (continent)
............... Costa Rica (nation)
........................ Alajuela (province)
........................ Cartago (province)
........................ Guanacaste (province)
........................ Heredia (province)
........................ Limón (province)
........................ Puntarenas (province)
........................ San José (province)
Hierarchical Relationship in TGN - Whole/Part

- Choosing the parent
- To add a new record, TGN requires that you name the correct administrative division within the nation where the place should be positioned
- Consult the Rules and precedent for other places in that nation
- If you cannot determine the correct administrative subdivision, use the narrowest level known (e.g., state or nation, if you do not know the county)
LEVELS BELOW INHABITED PLACE

- hierarchy generally descends to level of inhabited place
- neighborhoods are included for largest cities

World
  North and Central America (continent)
  United States (nation)
  California (state)
  San Francisco (inhabited place)
    Chinatown (neighborhood)
    Ingleside (neighborhood)
    Mission (neighborhood)
    Nob Hill (neighborhood)
    North Beach (neighborhood)
    Washerwomans Bay (former physical feature)
Historical and Former Places

Top of the TGN hierarchy (hierarchy root)
---- World (facet)
------- Africa (continent)
---------- Egypt (nation)
----------- Urban (region)
------------- Al-Iskandariyyah (governorate)
---------------- Alexandria (inhabited place)

- Former features and administrative entities are included.
- Some places may no longer exist, e.g., submerged island of Alexandria, Egypt.

Al-Hadrah........ (neighborhood)
Antirrhodos....... (former island)
Pharos............ (island)
Polyhierarchy

- Multiple hierarchical relationships may include historical parents
- The date of the relationship may also be included
The date of the relationship may also be

E.g., Orvieto is linked to the historical entity, Etruria, with dates...
Changing relationships through history

- Urban diminishment
- Occasionally large urban areas are replaced with several smaller towns
- E.g., villages on site of deserted settlement, Thebes
- Urban expansion
- Former independent towns incorporated into modern city, Vienna

World
- Europe (continent)
- Austria (nation)
- Vienna (state)

Vienna (inhabited place)
- Almannsdorf (suburb)
- Aspern (suburb)
- Atzgersdorf (suburb)
- Breitenlee (suburb)
- Dornbach (suburb)
- [...]
- Stammersdorf (suburb)
- Strebersdorf (suburb)
Physical feature crosses national boundaries

- Physical features that cross boundaries are placed under the level that entirely contains them.

- Reasons: focus of TGN is on inhabited places; complex linking of physical features would clutter the thesaurus.

World
- Europe (continent)
  - Adriatic Sea (sea)
  - Alemannia (region, general)
  - Alps (mountain system)
  - Alsace-Lorraine (region, general)
  - Andorra (nation)
no set number of levels in administrative structure

Different nations have different numbers of levels
Also, to facilitate island nations, TGN has the policy of incorporating the physical features, islands, into the hierarchy, even if they are not coextensive with administrative division

E.g., hierarchy with physical feature as intervening level, Pate Island, Kenya

Africa (continent)
...Kenya (nation)
......Coast (province)
..........Bura (inhabited place)
..........Galana (river)
..........Gazi (inhabited place)
..........Kinango (inhabited place)
..........Lamu (inhabited place)
..........Lugards Falls (waterfalls)
..........M kunumbi (inhabited place)
..........Pate Island (island)
............Pate (inhabited place)
............Rasini (inhabited place)
............Rabai (inhabited place)
............Shimoni (inhabited place)
Note - Extensive area, including nations of SW Asia & NE Africa; term formerly used to also include Afghanistan, Pakistan, India & Burma; term "Near East" is used to refer to the same general area as "Middle East," but may also be used to mean a larger area.

Names:
- Middle East (C,O)
- Le Moyen-Orient (C,O)
- Oriente Médio (C,O)
- El Medio Oriente (C,O)
- Vorderasien (C,O)
- Near East (C,O)
- Proche-Orient (C,O)

"General region” = no consistently defined boundaries
- currently has no hierarchical depth
Place types

for Indianapolis, Indiana

inhabited place
city
state capital
manufacturing center
transportation center
sporting center
financial center
agricultural center

- minimum record has one place type
- fuller records have more
- one is flagged as “preferred”

For cities, towns, villages, preferred = inhabited place

images from indy.com: photos copyright Indianapolis Star, photographers: race cars by Rich Miller; harvest by Mike Fender; Monument Circle by Robert Scheer; basketball by Paul Sancya

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**Place types**

- **For Cahokia Mounds (deserted settlement)**
  (United States, Illinois, Saint Clair county)

- **Deserted settlement (preferred, C)**
  - **Display Date:** flourished by 1,000 CE, declined by 1350 CE
  - **Start:** 500 **End:** 1400

- **Archaeological site (C)**

- **State park (C)**

- **Inhabited place (H)**

- **City (H)**

- **Mississippian (H)**

  - Include dates of habitation; estimate broad span of habitation (began years before flourishing), was inhabited for some time after declining
  - Terms in “place types” may also indicate culture *Mississippian*
PLACE TYPES

for Machu Picchu, Peru

- May be historical or current
- E.g., “deserted settlement” is preferred current, “inhabited place” is historical

**deserted settlement (preferred, current)** ... construction of settlement started ca. 1440; was inhabited until the Spanish conquest of Peru in 1532
  Start: 1430  End: 1550

**archaeological site (current)** ... rediscovered in 1911
  Start: 1911  End: 9999

**ruins (current)**

**inhabited place (historical)**

**Inca (historical)** ... building started ca. 1440; was inhabited until the Spanish conquest of Peru in 1532
  Start: 1440  End: 1550
- Choose an appropriate Place Type
- Controlled by AAT
- Currently via a mapping between the controlled list and AAT

<table>
<thead>
<tr>
<th>Place Type ID</th>
<th>Place Type</th>
</tr>
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<tbody>
<tr>
<td>83210</td>
<td>deserted settlement</td>
</tr>
<tr>
<td>83211</td>
<td>ghost town</td>
</tr>
<tr>
<td>83212</td>
<td>ruined settlement</td>
</tr>
<tr>
<td>83213</td>
<td>former community</td>
</tr>
<tr>
<td>83214</td>
<td>buried settlement</td>
</tr>
<tr>
<td>83215</td>
<td>tell</td>
</tr>
<tr>
<td>83216</td>
<td>huyuk</td>
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<td>83217</td>
<td>tepes</td>
</tr>
<tr>
<td>83218</td>
<td>lost settlement</td>
</tr>
<tr>
<td>83219</td>
<td>ephemeral community</td>
</tr>
<tr>
<td>83220</td>
<td>lost area</td>
</tr>
</tbody>
</table>
for a deserted settlement in Israel

DESCRIPTIVE NOTE:
Located over Huleh Valley, near the modern town Hazor; for centuries it was one of most important cities of Canaan, in control of rich agricultural area and vital trade and military route; according to the Bible, site of victory of Joshua and other battles of Israelites.
**Associative Relationship in TGN**

**What is a lost settlement?**

- A place known from ancient documentation, but its exact location on planet Earth is unknown
- Lost settlement is linked to possible identifications
- Does not have coordinates
- Placed under the level where it is agreed to have existed, “lost & found” level
### Associative Relationship Examples

<table>
<thead>
<tr>
<th>Context</th>
<th>Relationship Type</th>
<th>Related Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>for the Ancient Mesopotamian kingdom, Assyria, which is distinct from</td>
<td>distinguished from</td>
<td>Assyria (Roman Empire) (province)</td>
</tr>
<tr>
<td>the Roman Province of the same name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the record for the lost settlement of Sharuhen</td>
<td>possibly identified as</td>
<td>Tel el-Far'ah (As Suwayd$01a', Syria) (deserted settlement)</td>
</tr>
<tr>
<td>for Kings county, New York, USA</td>
<td>coextensive with</td>
<td>Brooklyn (New York, New York, USA) (borough)</td>
</tr>
<tr>
<td>for ancient Persia</td>
<td>predecessor of</td>
<td>Iran (nation)</td>
</tr>
</tbody>
</table>

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ASSOCIATIVE RELATIONSHIP EXAMPLES

- Dates for Relationships

[for Lincoln, England]
Relationship Type: capital of
Related Place: Flavia Caesariensis (Britannia Inferior, Roman Republic and Empire) (province)
Display Date: from the early 4th century CE
Start Date: 296   End Date: 900

[for Florence, Italy]
Relationship Type: ally of
Related Place: Orvieto (Terni province, Umbria, Italy) (inhabited place)
Display Date: Guelf allies during the 13th and 14th centuries
Start Date: 1250   End Date: 1400
**Coordinates**

- Derived from published sources: atlases, NGA/NIMA, USGS
- For “finding purposes,” not GIS
- Expressed in degrees, minutes, and seconds
- Translated into decimal degrees
- Represent a point at the center of a place, or the source of linear features (e.g., rivers)
- Elevation
- Bounding coordinates

### Coordinates

<table>
<thead>
<tr>
<th>Latitude</th>
<th>Degree</th>
<th>Minute</th>
<th>Second</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitude</td>
<td>Degree</td>
<td>Minute</td>
<td>Second</td>
<td>Direction</td>
</tr>
</tbody>
</table>

### Elevation

- **Feet**
- **Meters**

**Click to add bounding coordinates**
• Recording a single point
  • Usually adequate for smaller places
  • Point = source of linear features
  • Marginally helpful for center of areas (may record point AND bounding box)

Coordinates for nation of India

Latitude: 20 00 N, Longitude: 077 00 E
For Gaul (historical region)

Note: Refers to the region inhabited by the ancient Gauls, comprising modern-day France and parts of Belgium, western Germany, and northern Italy. It was a powerful ancient country. Inhabited from ca. 600 BCE by Celtic Galli. French Gaul (the area of Gaul that is modern France) was later divided by Rome into four provinces: Narbonensis, Aquitania to the west and south of the Loire, Lugdunensis in central France between the Loire and the Seine, and Belgica in the north and east.

Descriptive Note

Topics may include the following:

- disputed issues, sovereignty, or ambiguity regarding the names or critical facts about the place
- possible confusion of the place due to its name being a homograph for a nearby place
- physical description
- description of its location (do NOT repeat the hierarchy information, but you may mention physical features, etc.)
- the first habitation of the place
- its political history, in chronological order
- its importance relative to other places or to the history of art and architecture
- for modern nations, include the languages spoken
- population may be included for inhabited places, provided you cite the date of your source
Sources

• Required to list sources.
• For preferred name, prefer the most authoritative, up-to-date sources available.
• Sources of information in the TGN record may include the following in this order of preference:

Standard general reference sources
atlases, loose maps, gazetteers
geographic dictionaries, encyclopedias, guidebooks
government Web sites, including NGA (NIMA) and USGS

Other official sources
newsletters from ISO and United Nations communication with embassies
Library of Congress subject headings

Other material on topics of geography or current events
books, journal articles, and newspaper articles
archives and other original sources

Other sources
inscriptions on art objects, coins, or other artifacts
catalog records of repositories of art objects
books on history of art and architecture
Recent Editorial Issues

Survey of a few issues reported at the 2014 ITWG meeting
TGN: Harmonizing Place Type List to AAT

- TGN Place Type list had to be harmonized with the AAT
- Required auto-matching and editors filling in spreadsheets for no match, false match, ambiguous match
- Some new terms were added to the AAT
### TGN Place Type List

<table>
<thead>
<tr>
<th>ID</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>54216</td>
<td>coalfield</td>
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<tr>
<td>54459</td>
<td>submerged site</td>
</tr>
<tr>
<td>54471</td>
<td>barrow</td>
</tr>
<tr>
<td>54472</td>
<td>tumulus</td>
</tr>
<tr>
<td>54473</td>
<td>earthwork</td>
</tr>
<tr>
<td>54492</td>
<td>type site</td>
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<td>54557</td>
<td>caravanera</td>
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<td>urban county</td>
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<td>81142</td>
<td>deme</td>
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<td>81160</td>
<td>town council</td>
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<tr>
<td>81199</td>
<td>ancient region</td>
</tr>
<tr>
<td>82136</td>
<td>pirate haven</td>
</tr>
<tr>
<td>83001</td>
<td>occupation site</td>
</tr>
<tr>
<td>83157</td>
<td>sanctuary center</td>
</tr>
</tbody>
</table>

- **barrows**
  - (burial mounds, funerary structures, ... Built Environment (Hierarchy Name)) [300007148]
- **caravanserais**
  - (public accommodations, <single built works by function>, ... [300007148]
- **earthworks (engineering works)**
  - (<single built works by location: topographical>, <single built Environment (Hierarchy Name)) [300008020]
- **earthwork (engineering work)**
- **earthworks (sculpture)**
  - (environmental art, <visual works by material or technique>, ... (Hierarchy Name)) [300047857]
- **earthwork (sculpture)**
- **submerged sites**
  - (underwater sites, sites (locations), ... Built Environment (Hierarchy Name)) [300008020]
- **submerged site**
- **tumuli**
  - (burial mounds, funerary structures, ... Built Environment (Hierarchy Name)) [300008020]
- **tumulus**
- **type sites**
  - (sites (locations), <complexes by function>, ... Built Environment (Hierarchy Name)) [300008020]
  - type site
Restructuring of hierarchies to allow more automatic incorporation of nations from the National Geospatial Intelligence Agency (NGA)

- May involve removing a lower level of subdivision such as regions and districts under German states; losing granularity, but is the only practical solution to keeping the current world data up-to-date
TGN: Preparing hierarchies for NGA loads

- Restructuring of hierarchies to allow more automatic incorporation of nations from the National Geospatial Intelligence Agency (NGA)

---

<table>
<thead>
<tr>
<th>Name (Type)</th>
<th>Geopolitical Entity Name (Code)</th>
<th>First-Order Administrative Division Name (Code)</th>
<th>Latitude, Longitude DMS (DD)</th>
<th>MGRS</th>
<th>Fed. Design (C)</th>
</tr>
</thead>
<tbody>
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<td>Aalkeb (Approved - N)</td>
<td>Germany (GM)</td>
<td>Bavaria [conventional] / Bayern [German] (GM02)</td>
<td>49° 52′ 21″ N, 011° 20′ 11″ E (49.872609, 11.336357)</td>
<td>32UPA6787427096</td>
<td>popular</td>
</tr>
<tr>
<td>GM01 Baden-Württemberg</td>
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<tr>
<td>GM02 Bavaria [conventional] / Bayern [German]</td>
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<tr>
<td>GM03 Bremen</td>
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</tr>
</tbody>
</table>
TGN: Contributions from GCI & CONA stubs

- GCI contributes archaeological sites and ancient place names as they require them
- TGN records added through contributions to CONA
  - In the CVA/Processor, a “stub” record is made as candidate, then vetted later
TGN: Is the entity for TGN or CONA work?

- Built works may be place names
- One factor, is it in a geographic resource such as NGA (National Geospatial-Intelligence Agency)?
  - TGN includes physical and administrative entities (mountains vs. cities)
- Cities could be corporate bodies in ULAN (e.g., patron of a work)
TGN: Ancient site same as modern town?

- Cleaning up ancient sites; adding coordinates, variant names, other data
- Modern town? A modern town may indeed be built atop an ancient site, when both names should be combined in the same record
- But sources often combine ancient site name and nearby modern town
- We are correcting these as we find them

- Contributor interprets this parenthetical name in the source as a variant name
- Submits both names in the same TGN record
- In fact, the parenthetical name is the name of a nearby modern town
TGN: Ancient site same as modern town?

- Corrected in TGN, modern town is linked through associative relationships
- "site name" is flagged
- "near/adjacent to" only for archaeological sites, as is common practice

**Note:** Site of ancient city on the western bank of the river Tigris, in the Qal'at Sherqat district and near the city of Ash Sharqāṭ (Qal'at Sherqat); was an Early Bronze Age settlement by during 3rd mill. BCE; earliest capital of Assyria until replaced by Calah in the 9th mill. BCE; destroyed by Medes in 614 BCE.
TGN: Lost settlements

- Lost settlements are linked to possible locations, if known
- No coordinates

**Aūza (lost settlement)**

**Note:** Earliest African city of the Phoenician civilization that existed 3,500 years ago. The site of this city is unknown, although scholars have traditionally placed it somewhere beyond Carthage in Tunisia. Recent research suggests it may have been closer to Egypt, in modern Libya.

**Related geographic places:**
- possibly identified as .... **Aziris** .......... (deserted settlement)
- ........................................ (World, Africa, Libya, Al Jabal al Akhḍar) [7059227]
- ........................................ proposed by John Boardman of the University of Oxford in 2010
TGN: Is the entity for TGN or CONA IA?

- Is the place a real place, even though a *lost settlement*? Or is it legendary or mythological?
- Can make links to TGN from the CONA IA as necessary

**Xibalba**

<table>
<thead>
<tr>
<th>Iconography Type:</th>
<th>Fictional Place</th>
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</thead>
<tbody>
<tr>
<td>Descriptive Note:</td>
<td>Maya underworld, described in the Popol Vuh as a court below the surface of the Earth associated with death and with twelve gods or powerful rulers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sources</th>
<th>Associative Rel</th>
<th>AAT Rel</th>
<th>Place Rel</th>
<th>Person/Corp Rel</th>
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<td>associated with</td>
<td>Cobș00an (Alta Verapaz, Guatemala, North and Central Ar</td>
<td>1016644</td>
<td></td>
<td></td>
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</tbody>
</table>
Contributions to TGN

Contributors and Issues
Contributions to TGN

- TGN focuses on place names and related information used for cataloging, research, and discovery of art, architecture, archaeology, conservation, and related disciplines.
- Contributors to TGN include representatives of these disciplines, museums and special collections, the conservation community, and others.
- The hierarchies of the current world is maintained, with little or no editor intervention, by data from the National Geo-Spatial Intelligence Agency (NGA, formerly NIMA) and the US Geological Survey (USGS).
Recent Getty vocabulary contributors

- Contributors include projects at the Getty Research Institute, the Getty Conservation Institute, and the J. Paul Getty Museum

- Other recent contributors include the Centro de Documentación de Bienes Patrimoniales, Chile; Netherlands Institute for Art History (RKD); Academia Sinica of Taiwan; the Staatliche Museen zu Berlin Preussischer Kulturbesitz; the Courtauld Institute; Grove Art online; the Rijksmuseum in Amsterdam; Indiana University slide library; the Victoria and Albert Museum; Istituto Centrale per il Catalogo e la Documentazione, Rome; the Canadian Heritage Information Network (CHIN); the Canadian Centre for Architecture; the Frick Art Reference Library; the Smithsonian Institution National Museum of African Art; the National Art Library in London; the Mystic Seaport Museum; the Harry Ransom Humanities Research Center at the University of Texas at Austin; the Bunting Visual Resources Library at the University of New Mexico
How to disambiguate homographs

*merging duplicates in TGN loads*

- During loads of contributed data in TGN, records are merged automatically if names, coordinates, broader context, and place types match or closely correspond.

- Are these two records for the same place? If so, they will be “merged,” automatically if the data supports it, or by hand if data requires research.
How to disambiguate homographs

merging duplicates in TGN loads

For loading contributions:
Reports indicate which possible matches require human research
E.g., all compared fields match, except one: place type does not match

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>ID</th>
<th>Description</th>
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</thead>
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<td>'AtS01aqah, Jabal</td>
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<td>'Abd S01u DlyS01abah, WS01adS01i</td>
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<td>RamlS01iyah, Jabal ar</td>
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</tr>
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<tr>
<td>7536542</td>
<td>Marikh, WS01adS01i</td>
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<td>New</td>
</tr>
</tbody>
</table>
Utilizing TGN
Implementers and end users
How to disambiguate homographs in displays for end users

Alexandria (Asia, Pakistan, Baluchistan) .. (deserted settlement)

Alexandria (Baluchistan, Pakistan) .. (deserted settlement)

- Parent string in reverse order allows indexing results lists by continent, nation
- In natural order is easier for user to read
Accommodate requirements of horizontal vs. hierarchical displays. E.g., “display name” for parent string

- special name flagged for horizontal displays
- where simple name is confusing
- in a heading

**Names:**

- Coast (preferred, C,V,N)
- Coast Province (display, C,V,N)

Galana (Coast Province, Kenya, Africa) river
Displays

Hierarchical display for thesauri

- Preferred display of hierarchies is with indentation for a general audience, not thesaurus specialists
- Use graphics to indicate focus and where levels may be expanded

Top of the TGN hierarchy (hierarchy root)
.... World (facet)
....... Asia (continent)
........... India (nation)
............... Delhi (union territory)
.................. Delhi metropolitan area (metropolitan area)
........................ Delhi (inhabited place)
.......................... Qutb Minar (tower)
............................ Red Fort (fort)
Allow display of the hierarchy in multiple languages; TGN currently supports English and vernacular

English view may be constructed by using flagged English name
How are vocabularies used?

For cataloging and indexing

CONA is linked to TGN, ULAN, and AAT

**CONA Record**

*CONA ID:* 700000153

*Class:* Sculpture  
*Work Type:* hacha

*Title:* Hacha (Ceremonial Ax)

*Creator Display:* unknown Veracruz

*Creation Date:* Late Classic Veracruz (600-900 CE)

*Current Location:* Dumbarton Oaks (**Washington DC, USA**)  
*ID:* B38 VCS

*Discovery Location:* **Veracruz (Mexico)**

*Subject:* •religion/mythology  
•human figure  
•face  
•game  
•sacrifice  
•ceremonial object  
•Inca ballgame

*Measurements:* 35 x 22.2 cm (height) (13 3/4 x 8 3/4 inches)

*Materials and Techniques:* marble

*Descriptive Note:* The hacha had ritualistic significance and likely served as an actual ballcourt marker.

---

**E.g., Place names in the CONA record are controlled by links to TGN; artists to ULAN, Work Type to AAT, etc.**
How are vocabularies used?

- Traditional use of vocabularies for retrieval focuses on the names
- If a user asks for one name/term, all of the synonyms can be used for retrieval
- For example, if a user searches on “Thebes”...

“thebes” OR “tebe or ” OR “طبيعة” OR “Nowe” OR “Diospolis Magna ”

From TGN

<table>
<thead>
<tr>
<th>Thēbai</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Θῆβαι</td>
<td>Nowe</td>
</tr>
<tr>
<td>Thebes</td>
<td>Thiva</td>
</tr>
<tr>
<td>Tebe</td>
<td>Nuwe</td>
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<tr>
<td>Θεία</td>
<td>Πόλη και Νοιοτρόπος (Πόλη και Νοιοτρόπος) (H) Νότια Πόλη, βρίσκεται περίπου 800 χλμ νότια της Μεσογείου, στην ανατολική οχή του Νείλου</td>
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<td>Thebae Aegypti</td>
<td>Diospolis</td>
</tr>
<tr>
<td>Thēvai</td>
<td>Diospolis Magna</td>
</tr>
</tbody>
</table>
How are vocabularies used? • New methods and LOD can incorporate hierarchical and associative relationships, and other links or inferred relationships to answer more complex questions and aid serendipitous discovery.

Hierarchical relationships:
- Egypt (nation) (Africa) [7016833]

Associative relationships:
- Thívai (inhabited place) (Europe, Greece, Central Greece and Euboea, Voiótía regional division) [7029383]
- Thebes (deserted settlement) (Africa, Egypt, Qinā governorate) [7001297]
What is Linked Open Data (LOD)?

• The AAT, TGN, and ULAN are now available as LOD
• They are published under the Open Data Commons Attribution License (ODC-By) 1.0

• When data is linked and open, it means that data is structured and published according to the principles of Linked Data, so that it can be both interlinked and made openly accessible and shareable on the Semantic Web. The goal of linked open data is to allow data from different resources to be interconnected and queried.

• In order for data to be understood and processed automatically by computers, data in records or about resources must be expressed in a standard format. Each thing (for example, a museum object, a place, or a person) must be represented by a persistent identifier (known as a Uniform Resource Identifier (URI)). A Resource Description Framework (RDF) is a language or format for describing things as well as the relationships between things as simple properties and values (known as 'triples'), while things are represented using URIs.
Getty vocabularies are linked to each other
Getty vocabularies providing conduits to links in the cloud