Temporal Referencing for Historical Gazetteers

With Special Emphasis on the Ancient World

Lex Berman
China Historical GIS
Center for Geographic Analysis
Harvard University
Existing Gazetteers

Core Elements:

- Placenames
- Types
  - Feature Types
  - Ontology of Relationships Between Types
- Footprints

- Vernacular Names Treated as “Variant” Names
- Spellings lack specific sources, case by case
- Feature Types Lacking Historical / Local Terms
- Static Administrative Hierarchy
- Points for Footprints
- Lack Dates (GNS, Geonames, Getty TGN)
Historical Gazetteers & Historical GIS

Vernacular Names Treated as Default Names
- Both vernacular and romanized required (CHGIS)
- Default spellings & alternate spellings (GBHGIS)
- Multiple name attestations allowed (Pleiades)

Feature Types Customized For Content
- Cultural and historical specific terms
- Semantic interoperability problems

Dynamic Administrative Hierarchy
- Explicit dates in PartOf relationships (CHGIS)
- Series of dated static relationships (NHGIS)
- isPartOf relationship [ontology] w/o dates (GBHGIS)

Dates
- Specific Placename Instances (CHGIS)
- Time Slices (NHGIS)
- Content Specific Date Ranges (Pleiades)
- Repeatable Date fields for each entry (ADL)

Footprints
- Uncertainty, Accuracy, Lack of Sources, Scale
Constructing Gazetteer Objects

- 320 CE - 1500 CE
- 400 CE - 480 CE
- 100 CE - 700 CE

Graphical representation:
- Ftprint
- Name
- Type
- isPartOf

Legend:
- Purple circle: Ftprint
- Red circle: Name
- Green circle: Type

Timeline:
- 320 CE - 1500 CE
- 400 CE - 480 CE
- 100 CE - 700 CE
Pleiades Project - Next Gen Historical Gazetteer

Attestations (Based on Specific Historical Source)

Placename attestation
- Feature type is optional (may be unknown)
- Location is optional
- Date is optional

Location of feature attestation
- Feature type is required
- Placename is optional
- Date is optional

Placename + Location = “Historical Place”
- Feature type is optional
- Date is optional

Date Attestation
- Based on generally defined periods (Classical, Archaic, etc...)

Collections: groups of objects according to Feature Type or Date attestations
Temporal context for gazetteer entries

Socio-political “root unit” = the overall context

Roman Period

Roman Kingdom Roman Republic United Roman Empire

British

Gallic

Western Empire Eastern Roman Empire

Caligula Claudius Nero

Invades Britain Rome burns

43 CE

41 CE  54 CE

44 BCE  395 CE
Date Attestations within Temporal Context

Placenames:

Rutupiae (default) (historical) (endoynm) (lat)
Richborough (alternate) (modern) (exonym) (eng)

Dates:

43 CE (begin) (sourced) (authority: x)
43 CE (end) (sourced) (authority: x)
41 CE (period begin) (inherited) (authority: chronology of Roman Rulers)
54 CE (period end) (inherited) (authority: chronology of Roman Rulers)
44 BCE (context begin) (inherited) (authority: chronology of Roman Rulers)
395 CE (context end) (inherited) (authority: chronology of Roman Rulers)

Range:

44 BCE (-0044) (earliest) (derived) (based on: context begin)
395 CE (0395) (latest) (derived) (based on: context end)
Temporal Referencing System

Core Elements:

- Keyframes (Emperors, Reign Periods, Local Calendar Periods)
- Named Periods
- Process for ingesting ad-hoc collections of user-defined periods
- User Interface for Browsing (Simile Timeline)
- Means of posting selected Timeline dates directly into external application
- Repository of Keyframes for free public consumption (web service)

Input Spec:
- .csv
- .xml

Output:
- .json
- .geoRSS
- .xml

Template: Simile Timeline

Input Spec: .csv .xml
parser
Output: .json .geoRSS .xml
Template: Simile Timeline
gazetteer database
Data entry
```json
{
    'dateTimeFormat': 'iso8601',
    'wikiURL': 'http://chgis.hmdc.harvard.edu',
    'wikiSection': '/time',

    'events': [
        {
            "point": {"lon": 108, "lat": 34},
            "title": "秦 趙子楚",
            "description": "Period: 秦 趙子楚  -249 BCE to -247 BCE Capitol: 咸阳 (咸阳市)",
            "start": "-249-01-01",
            "end": "-247-12-31",
            "color": "#99FF00",
            "textColor": "#000000"
        },
        {
            "point": {"lon": 108, "lat": 34},
            "title": "秦 趙政",
            "description": "Period: 秦 趙政  -246 BCE to -210 BCE Capitol: 咸阳 (咸阳市)",
            "start": "-246-01-01",
            "end": "-210-12-31",
            "color": "#99FF00",
            "textColor": "#000000"
        },
        {
            "point": {"lon": 108, "lat": 34},
            "title": "秦 胡亥",
            "description": "Period: 秦 胡亥  -210 BCE to -207 BCE Capitol: 咸阳 (咸阳市)",
            "start": "-210-01-01",
            "end": "-207-12-31",
            "color": "#99FF00",
            "textColor": "#000000"
        }
    ]
}
```
Time Referencing System: Chinese Reign Periods

Sources:

**Quietus**

From Wikipedia, the free encyclopedia

For other uses, see Quietus (disambiguation).

<table>
<thead>
<tr>
<th><strong>Quietus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usurper of the Roman Empire</strong></td>
</tr>
<tr>
<td>Antoninianus-Quietus-RIC 0009.jpg</td>
</tr>
<tr>
<td>Quietus on a coin celebrating <em>Eternal Rome.</em> [1]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Reign</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>260-1 (with Macrianus Minor)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Full name</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Titus Fulvius Iunius Quietus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Died</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>261</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Predecessor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallienus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Successor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallienus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Father</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Macrianus Major</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mother</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>? (of senatorial descent)</td>
</tr>
</tbody>
</table>

**Titus Fulvius Iunius Quietus** (died 261) was a Roman usurper against Roman Emperor Gallienus.

Quietus was the son of Fulvius Macrianus and a noblewoman, possibly named Iunia. According to *Historia Augusta*...
Repository of Keyframe Chronologies

available now:

- Chinese Reign Periods  (simple version, by year)
- Roman Rulers  (from Augustus to the Divided Empire)

planned updates:

- Chinese Reign Periods (accurate to the day, via DDBC)
- Japanese Eras  (accurate to the day, via DDBC)

[Dharma Drum Buddhist College – Time Authority Database]

permanent website will be linked from here:
http://fas.harvard.edu/~chgis