Facility Informatics with GeoVisipedia

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Randy Roberts, John Goforth and George Weinert

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The BIG picture

What is GeoVispedia?

Why is GeoVisipedia useful?

Why is GeoVisipedia important?
GeoVisipedia is a methodology and a toolset

Conventionally annotated image is static—it’s knowledge content does not change

Imagery annotated with GeoVisipedia is dynamic, constantly updating—imagery becomes a portal to knowledge and insight
GeoVisipedia *automatically* propagates existing annotations to new satellite imagery of facility, regardless of view angle.

Preserves analyst’s knowledge about a facility, greatly simplifies dissemination of knowledge about the facility.
GeoVisipedia exploits a 3D facility model to project annotations to any viewpoint.

Annotations derived from a data structure containing:
- Coordinates of annotation on 3D model
- Unique index for annotation
- Annotation
  - Notes
  - Diagrams
  - Pictures
  - Links to other information
- Metadata for annotation
GeoVisipedia is a Visual Wikipedia

**Decision-makers:**
Easy to learn about a facility and query SMEs—Satellite imagery is the interface to knowledge

**Analysts:**
Densely interconnected knowledge with other analysts enables insight into a facility’s purpose and operations

**GeoVisipedia**
- Satellite imagery automatically annotated, regardless of view angle
- Computer assisted knowledge elicitation
- Crowdsourcing questions to community

**Crowdsourcing**

**Subject Matter Experts**
What is GeoVispedia?
A visual wikipedia for satellite imagery. It is a toolset and methodology that greatly enhances analyst’s effectiveness.

Why is GeoVispedia useful?
Annotations are automatically propagated to new (or old) imagery of a facility. Annotate once, annotated forever.

Why is GeoVispedia important?
It preserves analyst’s knowledge about a facility, and greatly simplifies dissemination of knowledge about the facility.
A GeoVisipedia prototype is under development

1. Mouse over image and highlighted objects appear
2. Right click over highlighted object and menu of annotation template appears
3. Fill out the template
The figures show the 3D model of the building, the template created from the model, and the template applied to the building.

*Note the accuracy with which the stack is resolved from the different viewpoints*
The GeoVisipedia prototype makes it easy for SMEs to add knowledge

- SME accesses template by right clicking on highlighted object in image
- Four templates available for SME input
  - Building
  - Stack
  - Tank
  - Other Structure
- Template provides some structure, but free text entry also allowed
- GeoVisipedia’s interface very important to its success
  - Many potential interfaces, each designed for specific applications or user communities
  - We are beginning interactions with potential users to determine features of interest and how GeoVisipedia would fit into their workflow
GeoVisipedia is an evolving concept of knowledge connectivity

https://casis.llnl.gov/casis-2014