Supporting Map Symbology Interoperability

DHS Standards

DHS includes many groups that do emergency management mapping.

- DHS has no agency-wide standard map symbol set.
- HSWG developed the ANSI INCITS 415-2006 standard for point symbols, but it does not address all needs.

Since 2009, DHS has sponsored Penn State to research DHS symbol standards.

- Investigated current use of the ANSI standard.
- Created a process for refining mission-specific symbol standards.
- Piloted this process with Customs and Border Protection.

Next steps:

- Conduct symbol refinement process with additional DHS mission areas.
- Create prototype for a web-based Symbol Store.
- Identify best practices for designing dynamic and multi-scale symbols.

Dynamic & Multi-scale Symbols

In the symbol store, users can browse and search for symbols with simple keywords. The Symbol Store also shows which DHS mission uses each symbol, and whether or not a symbol has been vetted through our standardization process.

- Users assemble a new set of symbols by dragging them to a cart.
- Users can preview symbols on different kinds of maps, and can test the symbols with varying attributes such as scale, density, and size.
- A prototype of the Symbol Store is expected by early 2011.

New Process and Platform

We developed the e-Symbology Portal to refine symbols standards in each mission area.

- Most DHS mission areas use in-house symbol sets for internal standards.
- Participants can collaborate to refine and formalize these standards.
- Customs and Border Patrol participants identified nearly 60 issues with their symbols, and created new symbol categories.

In the web-based e-Symbology Portal, topics can be polled, discussed and progressively refined.

We proposed the Symbol Store to help DHS map-makers and map users find and share symbols.

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Dynamic geospatial data sources are becoming increasingly more common.

- It is essential to have symbology that effectively communicates dynamic data to users.
- We will propose new methods for designing, manipulating, and managing these symbols.
- Results from this work will be extensible to future DHS web mapping tools.