

FGDC Homeland Security Working Group 2009 WORK PLAN

Lead: Robert Phillips, DHS/USCG, Chair

Subcommittee or Working Group: Homeland Security Working Group, Symbology Subgroup

Background & Objectives:

The Federal Geographic Data Committee (FGDC) Homeland Security Working Group (HSWG) has voted to establish the Symbology Subgroup in order to expand various aspects of the Homeland Security Mapping Standard - Point Symbology for Emergency Management (ANSI INCITS 415-2006) by adding to the symbol set and broadening adoption and implementation by the Homeland Security and Homeland Defense (HLS/HD) community at all levels. (Note: ANSI INCITS 415-2006 was the result of work performed previously by the FGDC HSWG Emergency Response Symbology Subgroup.)

Participation from local, state, federal responders, academic and industry groups will ensure the creation of an extended, validated, and easily identifiable set of mapping symbols which convey the same meaning to multiple disciplines and levels of users.

Multiple formats will be offered to simplify use of the existing ANSI INCITS 415-2006 standard symbols with geospatial and presentation products and broaden distribution of these symbology products. New catalog techniques will enable simplified discovery of appropriate symbols for the situation at hand.

Additionally, subgroup efforts will result in extensions to the ANSI INCITS 415-2006 standard symbols, and/or definitions of new standards, that could include the development of linear and area HLS/HD symbology. Efforts will include investigating how to document managing HLS/HD symbology across heterogeneous missions and end-user environments.

Benefits or Justification/Legal Mandate:

The activities of the HSWG Symbology Subgroup are in accordance with OMB Circulars A-16, A-119, and A-130, and Executive Order 12906. These efforts will result in more comprehensive Homeland Security and Homeland Defense symbology standards used by responders at all levels and provide easily recognizable and commonly understood cartographic symbols. This will lead to better interoperability, better preparedness, and mitigate problems caused by misinterpretation of mapping symbols in emergency management or homeland defense scenarios commonly involving joint operations between federal and civil government, such as delayed response, loss of life or resources, interruption of government or critical infrastructure operations.

Scope of Work:

The objectives of the Symbology Subgroup include:

- a) Solicit membership from a variety of responders and cartographic professionals;
- b) Acquire feedback from the existing base of symbology users for expansion of point symbols and attributes and evaluate for adoption;
- c) Assist the Department of Homeland Security (DHS) in the extension and enhancement of the current symbology standard. Extensions could include definition of linear and area symbology and managing symbology across heterogeneous missions and end-user environments. This task is funded by DHS Science and Technology Directorate and is managed by the DHS Geospatial Management Office through its oversight role of the FGDC HSWG Symbology Subgroup;
- d) Explore and collaborate on additional emergency response, hazard mapping and HLS/HD symbol implementations by other organizations. This work includes collaboration with international groups that have an interest in adopting and/or expanding on the existing the ANSI INCITS 415-2006 work of the HSWG;
- e) Collaborate with academia in validation of cartographic symbols using accepted methods and standardized criteria for evaluation and qualification of mapping symbols in terms of comprehensibility and application at various mapping scales, and ensuring cultural sensitivity issues are thoroughly addressed;
- f) Collaborate with the OGC and industry groups to identify the most widely desired and accepted graphic formats enabling simplified implementation across various products and operational platforms. This may include such attributes as transparency, coloring, and symbol fill pattern and density. This may also have a spin off advantage in simplifying maintenance, distribution, and installation of symbology products.
- g) Collaborate with the FGDC Content Subgroup regarding the Geospatial Data Model (GDM) to ensure proper correlation of point symbols to features included within the data model;
- h) Acquire mission oriented taxonomies to aid in the discovery process and interpretation of symbols for proper application to the response map;
- i) Through a survey of a broad base of responders, develop a common term index by which responders associate a symbol with an action or an event. This thesaurus would form a basic keyword-symbol association in terms the responders commonly use and would provide additional lookup criteria for discovery of symbols in a symbol catalog system;

j) Using GDM, taxonomical and key term survey information, create a symbol browser which not only correlates with the user context but also informs the user as to the proper association of the symbol to an event/feature in accordance with the GDM symbol association. This symbol browser is based on web browser technology;

k) Strive to identify the requirements and evaluate the usefulness of a service which will supply symbol search and download or embedding functions for DHS components on the DHS Enterprise Service Bus, and to the broader community of responders. A symbol may be delivered with the associated geospatial data as a presentation layer for the GDM structured data, arrive as an embedded artifact within a NIEM based construct, or other methods yet to be determined;

l) Coordinate with DoD organizations for creation of a common understanding of the symbology including translation requirements where appropriate to the Homeland Defense mission and data exchange;

m) Develop mapping presentation scenarios to test usability of symbol sets;

n) Develop outreach and training materials that promote acceptance and implementation of the symbol sets within emergency response communities;

o) Explore joint venture opportunities for funding research in these areas; and

p) Explore grant language encouraging use of the standard symbol set.

Tasks, Milestones, Task Leads, and Budget:

Task	Date	Who	Others	Budget
T1. Subgroup Meetings	As scheduled	Bob Phillips	See Groupspace Link for Staff	DHS USCG DHS GMO
T2. Solicit membership from a variety of responders and cartographic professionals.		Bob Phillips	See Groupspace Link for Staff	DHS USCG DHS GMO

T3. The objective of this requirement is to assist the Department of Homeland Security (DHS) in the extension and enhancement of the current symbology standard. Extensions could include definition of linear and area symbology and managing symbology across heterogeneous missions and end-user environments.		Bob Phillips	See Groupspace Link for Staff	DHS USCG DHS GMO DHS S&T
T3a. Develop Project Management Plan.		TBD	See Groupspace Link for Staff	DHS S&T
T3b. Gather and report on lessons learned and best practices for symbology standardization.		TBD	See Groupspace Link for Staff	DHS S&T
T3c. Identify, gather and report on existing symbology standards and practices that are related to the broad HLS mission.		TBD	See Groupspace Link for Staff	DHS S&T
T3d. Identify, interview and document requirements from stakeholders in the DHS and DHS partner community.		TBD	See Groupspace Link for Staff	DHS S&T
T3e. Develop and document artifacts for extension and enhancement of the Homeland Security Mapping Standard for Symbology.		TBD	See Groupspace Link for Staff	DHS S&T
T3f. Support the standards development process.		TBD	See Groupspace Link for Staff	DHS S&T
T4. Acquire feedback from the existing base of symbology users.		TBD	See Groupspace Link for Staff	DHS S&T

T5. Explore emergency response and hazard mapping symbol implementations by other organizations including international.		TBD	See Groupspace Link for Staff	
T6. Collaborate with academia in validation of cartographic symbols.		TBD	See Groupspace Link for Staff	
T7. Collaborate with the OGC and industry groups to identify the most widely desired and accepted graphic formats.		TBD	See Groupspace Link for Staff	
T8. Collaborate with the FGDC Content Subgroup regarding the Geospatial Data Model (GDM).		TBD	See Groupspace Link for Staff	
T9. Acquire mission oriented taxonomies to aid in the discovery process and interpretation of symbols.		TBD	See Groupspace Link for Staff	
T10. Develop a common term index, or thesaurus, by which responders associate a symbol with an action or an event.		TBD	See Groupspace Link for Staff	
T11. Create a symbol browser.		TBD	See Groupspace Link for Staff	
T12. Identify requirements and evaluate service to supply symbol search and download.		TBD	See Groupspace Link for Staff	
T13. Coordinate requirements appropriate to the Homeland Defense mission and data exchange.		TBD	See Groupspace Link for Staff	
T14. Develop mapping presentation scenarios to test usability of symbol sets.		TBD	See Groupspace Link for Staff	

T15. Develop outreach and training materials that promote acceptance and implementation of the symbol sets within emergency response communities.		TBD	See Groupspace Link for Staff	
T16. Explore joint venture opportunities for funding research in these areas.		TBD	See Groupspace Link for Staff	
T17. Explore grant language encouraging use of the standard symbol set.		TBD	See Groupspace Link for Staff	

Identification of funding sources or requests:

Except for Task Number 3, no funds are specifically budgeted for this effort, other the staff costs associated with membership participation. Therefore, scope, cost, schedule and performance projections are difficult to determine and quantify. Execution will be 'best effort'.

Points of Contact, Contact Info, and Area of Responsibility:

Symbology Subgroup Chair:

Robert Phillips, DHS/USCG, (216) 902-6211