in050826

1. Source of the Proposed Project

   1.1 Title: Emergency and Hazard Management Mapping Standard – Point Symbology

   1.2 Date Submitted: *** September 2005**

   1.3 Proposer(s): Federal Emergency Management Agency of the Department of Homeland Security (FEMA/DHS)

2. Process Description for the Proposed Project

   2.1 Project Type: **D**

   2.2 Type of Document: Standard

   2.3 Definitions of Concepts and Special Terms:

   None: Concepts and special terms, if any, are from common mapping and information technology. Specific symbol definitions and use concepts are the purpose of the standard.

   2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.:

   The Homeland Security Mapping Standard - Point Symbology for Emergency Management, hereinafter referred to as the Point Symbology Standard, will compliment ANSI NCITS 353-2001, Spatial data standard for facilities, infrastructure, and environment.

   The Point Symbology Standard complies with applicable ANSI and ISO Geographic information series of standards being developed through ISO Technical Committee 211, Geographic Information/Geomatics.

   Refer to Annex A for relevant ISO, ANSI, and FGDC standards.

   2.5 Recommended INCITS Development Technical Committee (Existing or New):

   INCITS L1, Geographic Information Systems

2.6 Anticipated Frequency and Duration of Meetings:

Since this is the translation of an existing federally developed standard into a public, consensus based standard, frequency and duration of review and editing meetings will be based on INCITS procedures and the need to progress this standard through the necessary steps. The experience of INCITS L1 in moving other federally developed standards through to public, consensus based standards will be utilized in determining the requirements for meetings. Standards development team and editing committees will include volunteer subject matter experts and other interested parties drawn from federal, state, local and tribal government agencies and private industry.

2.7 Target Date of Initial Public Review: September 2005

2.8 Estimated Useful Life of Standard or Technical Report: 10 years or more

3. Business Case for Developing the Proposed Standard or Technical Report

3.1 Description:

This Standard establishes a standard for point symbols when mapping for emergency management and hazard situations. It provides the foundation for defining, developing, and communicating a common set of cartographic symbols relevant to emergency management and homeland security objectives, including:

- reducing loss of life and property by strengthening nationwide response readiness,
- minimizing disruptions to governmental operations, critical cyber and physical infrastructures, and socioeconomic sectors,
- improving communications,
- strengthening national recovery plans and capabilities,
- promoting E-Government modernization and interoperability initiatives,
- strengthening nationwide preparedness and mitigation against acts of terrorism, natural disasters, or other emergencies, and
- providing scalable and robust all-hazard response capability and recovery assistance.

This Standard is applicable to all organizations that create maps or otherwise display features for the emergency management or first responder communities. It is limited at this time to support portrayal of point features that relate to the emergency management and hazard mapping disciplines..

3.2. Existing Practice and the Need for a Standard:

The existing mapping practice when responding to an emergency is for each federal, State, or local governmental unit to gather and display data about the situation. This is due to a variety of factors: dependence on symbology of available GIS software; historical or local policy and procedures; and lack of agreed upon standard set of symbols.

The importance of this becomes apparent when agencies are required to work together during an emergency situation. Frequently maps of the same situation produced by different agencies depict the information using different symbols. The loss in time and possible error involved when comparing and using differently symbolized information can and has hampered emergency response and placed lives and property in jeopardy.

Establishment of the Emergency and Hazard Management Mapping Standard – Point Symbology will significantly improve emergency response and facilitate providing critical government services among 87,000 government entities in the United States.

3.3. Implementation Impacts of the Proposed Standard

3.3.1 Development Costs:

The development cost will be borne by the Department of Homeland Security and INCITS L1 members and participating organizations. There should be no significant costs to INCITS associated with the development of these Standards.

3.3.2 Impact on Existing or Potential Markets:

This standard will have a positive impact on the overall GIS community by promoting smoother emergency response among federal, State, local, and tribal entities. The private sector (software developers and vendors) will benefit by developing tools that provide the display functionality required to implement this Standard.

3.3.3 Costs and Methods for Conformity Assessment:

Conformance guidance will be provided to evaluate whether implementations are in conformance with the Point Symbology Standard and any implementation annexes.

3.3.4 Return on Investment (ROI):

No specific ROI can be calculated at this time. However, a significant ROI can be expected, given the anticipated improvement in emergency response.

3.4 Legal Considerations

3.4.1 Patent Assertions: **None**
3.4.2 Dissemination of the Standard or Technical Report:

As the Point Symbology Standard will be developed using public funds, all government agencies shall be able to freely publish and distribute the contents of the Standard electronically (as provided through the Freedom of Information Act - FOIA.)

Upon adoption of the as American National Standards, the Information Technology Industry Council will copyright the American National Standards version of the Point Symbology Standard on behalf of INCITS. Upon copyrighting the Point Symbology Standard, ITI will provide free of charge to the FGDC a non-exclusive license to the Point Symbology Standard in a format acceptable to all Parties.

4. Related Standards Activities

4.1 Existing Standards – At present, no government-wide or other national standard exists.

4.2 Related Standards Activity

ISO TC 211, 19100 series, Geographic information
Federal Geographic Data Committee standards

4.3 Recommendations for Close Liaison: none

5. Units of Measurement used in the Standard

Indicate units of measurement used in the Standard:

- ___ International Systems of Units (SI)
- ___ Inch/Pound
- _X__ Both
- ___ Other
- ___ Not Measurement Sensitive

Standards Supporting More than One Theme

ANSI Standards

Spatial Data Standard for Facilities, Infrastructure, and Environment, INCITS 353:2001

Feature type, attribute type, domain, and feature relationship information, etc. shall be harmonized with the Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE), where applicable, and incorporated into the Point Symbology standard. The Standard development team shall coordinate with maintainers of the SDSFIE recommend changes for consideration in future versions/editions of the SDSFIE.

Spatial Data Transfer Standard (SDTS), ANSI NCITS 320:1998)

ISO Standards (refer to ISO Program of Work)

ISO 19107, Geographic information – Spatial Schema
ISO 19109, Geographic information – Rules for application schema
ISO 19110, Geographic Information- Feature cataloging methodology (applies to transportation, hydrography, government units, and cadastral information)
ISO 19111, Geographic information – Spatial referencing by coordinates
ISO 19115, Geographic information – Metadata
ISO 19117, Geographic information – Portrayal

FGDC Standards

Content Standard for Digital Geospatial Metadata (version 2.0), FGDC-STD-001-1998

Spatial Data Transfer Standard (SDTS), Part 6: Point Profile, FGDC-STD-002.6

Geospatial Positioning Accuracy Standard, Part 1, Reporting Methodology, FGDC-STD-007.1-1998

Geospatial Positioning Accuracy Standard, Part 3, National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998

Encoding Standard for Geospatial Metadata (draft stage)

Geodetic Control

FGDC Standards

Geospatial Positioning Accuracy Standard, Part 2, Geodetic Control Networks, FGDC-STD-007.2-1998

Elevation

FGDC Standardization Activities

Content Standard for Framework Land Elevation Data (completed public review)

Governmental Units

ANSI Standards

X3.31 Structure for the Identification of the Counties and County Equivalents of the U.S. and its Outlying and Associated Areas for Information Interchange

X3.47 Structure for the Identification of Named Populated Places, Primary County Divisions and other Entities of the U.S. and its Outlying

Annex B: Overview of the Standards Development Process for the Emergency Management and Hazard Mapping Standard – Point Symbology

The Point Symbology Standard establishes a common set of symbols for use on maps produced in support of emergency managers and first responders. It will allow users to rapidly interpret data and to be able to disseminate consistent usable information. It contains descriptions of point symbols and guidance on their appropriate use. The contents of this Standard are applicable to all organizations that create maps or otherwise display features for emergency managers or first responders. It is applicable to both paper and electronic maps. This standard does not replace existing standards, but establishes point mapping symbols that data producers, consumers, and vendors can use for the interchange of that data.

This Standard is limited to the portrayal of point symbols related to emergency management and hazard mapping. Standards for area and linear features will be forthcoming as part of the effort to provide a full set of symbols for emergency management and hazard mapping.