

*Accredited Standards Committee
InterNational Committee for Information
Technology Standards (INCITS) **

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**Annual Report for Technical Committee L1,
Geographic Information Systems (GIS)
June 2006- June 2007**

Website: www.incits-l1.org

Informal Description of Work

Geographic Information Systems form a distinct class of information systems through their unique requirements for collecting, converting, storing, retrieving, processing, analyzing, creating, and displaying geographic data. The generic nature of GIS, organizing information by location, is interdisciplinary and not specific to any application.

The work of L1, Geographic Information Systems (GIS) consists of adopting or adapting information technology standards and developing digital geographic data standards. Digital geographic data standards are concerned with creating, defining, describing, and processing such data.

Executive Summary

INCITS holds the U.S. TAG to ISO/TC 211, Geographic Information/Geomatics, with technical responsibilities assigned to L1, GIS. The United States Delegation attended the 22nd ISO/TC 211 Plenary and working group meetings in Orlando, Florida, USA in May 2006. The US Delegation will be attending and the 24th ISO/TC 211 Plenary and working group meetings in Rome Italy in May 2007.

The U.S. holds or has held the project leaderships for twenty-three of the forty- eight plus ISO/TC 211 work items and provided or provides 13 editors in support of them. As many of these ISO/TC 211 work items become International Standards, L1, GIS will be making recommendations for adoption by the US.

Significant INCITS L1 Accomplishments

2006 - Processed Standards

The INCITS L1 membership has processed ten (10) major standards over the course of the reportable 2006 year. These standards are presented in Attachment 2 of this report.

United States Hosted Plenary

The United States InterNational Committee for Information Technology Standards Technical Committee L1 (INCITS L1) hosted the 22 Plenary (May 2006) meeting of ISO TC211. INCITS L1 serves as the U.S. Technical Advisory Group (TAG) to ISO TC211 is a very active participant and leads many work items in ISO TC211.

The objectives of the L1 Planning Committee as hosts of the 22nd Plenary of TC211 were:

Conduct a professional, efficient TC211 Meeting, which enhances positive feelings about the value and importance of TC211 and its role.

Conduct the meeting with a minimum of problems and a rapid resolution of any that may arise.

Provide outstanding Host Services, which make all participants feel comfortable and part of a consensus-oriented organization

The Planning Committee believes that with the contributions, of its sponsors and with the work of all involved in planning and conducting the Meetings, that these objectives were met.

The Planning Committee also believes that it learned some lessons. While most of the following are undoubtedly familiar to those who regularly plan conferences and meetings, perhaps they can assist in future planning for geospatial/standards meetings:

- Start early to line up the meeting facility
- Start early to identify total funding and support needs and to secure financial and other commitments to meet those needs
- Establish coordination and maintain communications with any organizations which have specific requirements for the way the meeting is to be conducted. In this case, the organization was ISO/TC211
- Maintain an open and frequent communication channel with conference facility representatives
- Monitor the items you have made guarantees for such as room nights. Make adjustments to compensate for your target audience
- Plan conservatively to allow the flexibility to add features and value as you go rather than to take things away.
- Have someone separate from the Planning Committee keep the official financial records
- Require two people to approve an expense
- Conduct a site visit well in advance of the meeting

Maintain as much continuity as possible on the Planning Committee and try to select a conference venue with an excellent reputation for service and for continuity of its personnel.

Significant INCITS L1 Challenges

North American Standards

MOU for cooperation between ANSI INCITS (International Committee on Information Technology and Standards) and CGSB-COG (Canadian General Standards Board – Committee on Geomatics), the equivalent national committee in Canada, for the development of common geographic information standards approved by INCITS Executive Board February 2003. INCITS L1 officers met with CGSB-COG leadership on March 29, 2004 to develop a strategy for the development of common geographic information standards. The strategy will be implemented in the 2005. The work under this agreement will continue until the North American Metadata Profile has reached conclusion. The L1 plan is to present the document to ITI in the early fall of 2007. Upon achieving that goal the Standards of the Americas activity will continue profiling of the ISO TC 211 documents.

Standards for the Americas

Geographic information standards are the underpinning for the development of Spatial Data Infrastructures (SDIs) at international, national and local levels. With such standards, SDIs operate compatibly in a global network of SDIs and enable the development of a Global Spatial Data Infrastructure (GSDI). The work of standards development organizations such as ISO Technical Committee 211 (ISO/TC 211) and the Open Geospatial Consortium Inc. (OGC) have led to the development and adoption of a framework of consensus geospatial standards and specifications, which form the groundwork for interoperable Spatial Data Infrastructures.

Within the Americas, a number of coordination activities occur. They happen mainly between individual nations to address specific purposes such as economic development, environmental management, or public safety. However, some of the activities have a much broader scope and include multiple nations. This the case with the activities oriented towards improvement in the use of geospatial information and technology for multi-purposes. The Permanent Committee on Spatial Data Infrastructure for the Americas (PC IDEA), which was officially established in March 2000, is one such multi-nation SDI activity. PC IDEA has a Geographic Information Standards Working Group. Any SDI initiatives in the Americas should be in accordance with PC IDEA's orientations.

The United States believes that this partnership to collaboratively move forward with common geospatial standards implementation will significantly improve the implementation of Spatial Data Infrastructures and the beneficial use of geospatial capabilities to address needs within the Americas. Through cooperative working arrangements both the US and Canada wish to join other nations in the America's in continuing to implement consensus standards and profiles to further interoperability of geographic information and technology and spatial data infrastructure.

INCITS Standards Program

NOTE: Organization identified within parentheses is the INCITS L1 member organization that leads the project

INCITS Project: 1844-D, Information Technology – Topographic LiDAR Remote

INCITS Project: 1845-D, Information Technology - Minimum Geographic Feature Identifying Attributes

INCITS Project: 1846-D, Information Technology – United States National Grid.

INCITS Project: 1847-D, Information Technology - Codes for the Identification of the Congressional Commissioner Districts of the United States

INCITS Project: 1848-D, Information Technology – Codes for the Identification of Metropolitan Statistical Areas of the United States and Puerto Rico

INCITS Project: TBD, Information Technology - Geospatial Coordinate Measurement Representation.

INCITS Project: TBD, Information Technology - SQL MM - Part 3 is the Spatial Implementation using SQL

NWIP to ISO TC 211 Geographic information – Imagery Sensor Models for Geopositioning

Expected INCITS L1 Challenges

Standards Outreach

The purpose of the Standards Outreach Program is to provide information about current standards and the standards development process to GIS professionals. One goal of the outreach program is to involve as many GIS professionals as possible in the standards development process. Another goal is to offer information about standards.

Global Outreach

In cooperation with the INCITS Staff, L1 conducted Outreach activities to the global geospatial community during the GSDI 9 Conference. This conference held in Santiago Chile brought together leaders from around the world to foster the continued implementation of spatial data infrastructures to help support the needs of society. Specific L1 Outreach included: A Plenary Presentation on the Vision and Concepts of the Global Spatial Data Infrastructure; a presentation on Standards and Interoperability to the United Nations Geographic Information Working Group; participation in a Workshop on standards activities in Latin America and interaction with the delegates from many nations and organizations at the event. These Outreach efforts helped build increased awareness of INCITS L1 and its willingness to play a leadership role as appropriate in multi-national standards efforts.

ISO/TC 211 Working Groups/ Advisory Groups

<http://www.isotc211.org>

Working Group 4 Geospatial Services

Working Group 6 Imagery

Working Group 7 Information Communities

Working Group 8 Location Base Services

Working Group 9 Information Management

[Programme Maintenance Group \(PMG\)](#)

[Advisory group on strategy](#)

[Advisory group on strategy - Planning team \(AGS-PT\)](#)

[Advisory group on outreach](#)

[Terminology maintenance group \(TMG\)](#)

[Harmonized Model Maintenance Group \(HMMG\)](#)

[ISO/TC 211 / OGC Joint Advisory Group \(JAG\)](#)

[ISO/TC 204 /TC 211 task force](#)

[Focus group on data producer use of geographic information standards](#)

[ISO/TC 211 - ISO/IEC JTC 1/24 task force](#)

[Ad hoc group on registry establishment and management](#)

[Ad hoc group to evaluate offers for a register for geodetic codes and paratemers](#)

[Ad hoc group for UBG1](#)

[Ad hoc group on Catalogue Services](#)

INCITS L1 Committee Activities

2006 L1 Meetings

INCITS L1 Meeting Number	Date	Location
68 INCITS L1/US TAG	7-8 February 2006	Northrop Grumman – Chantilly, VA.
69 INCITS L1/US TAG	4-5 April 2006	Northrop Grumman – Chantilly, VA.
70 L1 Delegation Meeting	16 May 2006	ITI
ISO TC 211 22 th Plenary	21-26 May 2006	Orlando, Florida
71 INCITS L1/US TAG	13 July 2006	ESRI
72 INCITS L1/US TAG	5 October 2006	BAH
73 L1 Delegation Meeting	2 November 2006	Northrop Grumman – Chantilly, VA
ISO TC 211 23 rd Plenary	11-15 November 2006	Riyadh, Saudi Arabia
74 INCITS L1/US TAG	7 December 2006	Lockheed Martin

2007 L1 Meetings

INCITS L1 Meeting Number	Date	Location
75 INCITS L1/US TAG	7 February	Environmental Protection Agency, Washington D.C.
76 INCITS L1/US TAG	11 April	EPA
77 L1 Delegation Meeting	22 May	US Census Bureau
ISO TC 211 18 th Plenary	28 May -1 June	Rome, Italy
78 INCITS L1/US TAG	11 July	Northrup Grumman
79 INCITS L1/US TAG	11 September	TBD
80 L1 Delegation Meeting	24 October	TBD
ISO TC 211 19 th Plenary	29October -2 November	Xiam, China
81 INCITS L1/US TAG	6 December	TBD

Liaison Activities

Liaison Activities	from L1	to L1
INCITS H2, Database	John R. Herring Oracle Corporation jrherrin@us.oracle.com	Paul Scarponcini Bentley Transportation paul.scaponcini@bentley.com
INCITS H3, Computer Graphics And Imagery (to be established)	Paul Scarponcini Bentley Transportation paul.scaponcini@bentley.com	Paul Scarponcini Bentley Transportation paul.scaponcini@bentley.com
INCITS L8, Metadata	Norman Andersen Lockheed Martin Norman.c.andersen@lmco.com	Dan Gillman Bureau of Labor Statistics gillmand@bls.gov
Open Geospatial Consortium	Charles Roswell NGA/NCGIS charles.a.roswell@nga.mil	George Percivall Open Geospatial Consortium gpercivall@opengeospatial.org

INCITS L1 Officers

Position	Training date	Name and Organization Represented
Chair	TBD	Norman C. Andersen National Center for Geospatial Intelligence Standards Office of Strategic Transformation Mail Stop P-106 12310 Sunrise Valley Drive Reston, VA 20191 Phone: 703-814-4565 norman.c.andersen@nga.mil
Vice Chair	TBD	Julie Maitra FGDC c/o USGS 590 National Center 12201 Sunrise Valley Drive Reston, VA 20192 703 648 4627 703 648 5755 FAX jmaitra@usgs.gov
Secretary	TBD	Robert Kuffel 15036 Conference Center Drive Chantilly, VA, 20151 703-961-3644 robert.kuffel@ngc.com
International Representative	TBD	Dr. Charles Roswell National Center for Geospatial Intelligence Standards Office of Strategic Transformation Mail Stop P-106 12310 Sunrise Valley Drive Reston, VA 20191 +1 703 7-814-4566 roswellc@nga.mil

Membership

(Complete INCITS L1 Membership is presented in Attachment 1)

ACSM

American Society for Photogrammetry and Remote Sensing

Bentley Systems, Inc

Booz Allen & Hamilton, Inc

ESRI

Environmental Protection Agency (EPA)

Federal Geographic Data Committee

George Mason University

GeoQwest International, Inc.

Intergraph Services Company (ISC)

Lockheed Martin Corporation

Mitre Corporation

NASA/Goddard Space Flight Center

National Geospatial Intelligence Agency (NGA)

Northrop Grumman

Oracle Corporation

SEICORP, Inc.

United States Bureau of the Census

United States Dept. of Homeland Security

United States Dept. of the Army - Corps of Engineers

United States Geologic Survey

USDA Forest Service/Fire Science Lab

Future Trends

The trend of incorporating geoprocessing functionality into major software and database products continues the need for spatial data standards and compatibility with information technology standards. Growth in the mass market/consumer oriented proportion of the GIS industry will increase the demand for spatial data for location-based services among wireless mobile users. Consortium developed specifications related to the GIS industries are emerging. Internationally, there has been considerable progress made in establishing spatial data infrastructures at the national, regional, and global levels. The majority of these spatial data infrastructures intend to use the ISO/TC 211 family of standards.

The next set of major activities facing the Geospatial Community is the standardization of Geospatial ontology's, taxonomies and semantics. This work attempts to understand the geospatial requirements needed to enable federated discovery services to work with geospatial discovery and retrieval metadata catalog content extensions. It has been stated that up to 80% of all information contains some notion of location. Indeed, this provides opportunity for some of the fundamental stitching needed to sew the Semantic Web. A widely-used, common set of spatial ontology's would enable the linkage of data from a vast & varying number of domains that will need to interoperate in the Semantic Web. To date, such a set of multi-purpose, robust spatial ontology's has yet to emerge. Hence, this semantic wiki serves as a collaborative forum for the development of such a set of common spatial ontology's for the Semantic Web that could eventually lead to standardization. There are several groups already engaged in these activities, the Spatial Ontology Community of Practice (SoCOP) a Federal CIO Council, sponsored by OMB, The Geospatial Intelligence Standards Working Group, sponsored by the National Geospatial-Intelligence Agency (NGA), and proposed work in ISO TC 211 Geographics.

INCITS L1 Projects

The projects assigned to the committee can be found at the following URL:

http://www.incits.org/tc_home/l1sd4.htm

Attachment 1 INCITS L1, GIS Membership

Voting Members (Principle / Alternate) (Voting/Advisory)

Member	Principle Representative	Alternative Representative
ACSM Voting	Harold Moellering ACSM c/o Dept. of Geography 1036 DB Ohio State University Columbus, OH 43210 614-292-2608 614-292-6213 FAX geohal+@osu.edu	Dave Danko ESRI 8620 Westwood Center Dr Vienna, VA 22182 703-506-9515 x8011 703-506-9514 FAX ddanko@esri.com
ASPRS Voting	Gary k. Higgs Saint Louis University 3750 Lindell Blvd St Louis, MO 63108-3412 314-977-3384 314-977-1616 FAX higgsgb@SLU.EDU	Richard Pearsall NGA/NCGIS 12310 Sunrise Valley Drive P-106 Reston , VA, 20191 703-648-4532 703-814-4556 FAX Richard.a.pearsall@nga.mil
Bentley Systems, Inc Voting	Dr. Paul Scarponcini, PE Transportation Data Management Bentley Systems, Inc. 66 Willowleaf Drive Littleton CO 80127 303-948-2657 303-904-2364 FAX Paul.Scarponcini@bentley.com	No Alternate
Booz Allen & Hamilton Inc Voting	Steven Johnson Booz Allen Hamilton 8283 Greensboro Drive McLean, VA 22102 703-902-5149 703-902-3613 FAX Johnson_steven_e@bah.com	Joshua McQueen Booz Allen Hamilton 8283 Greensboro Drive McLean, VA 22102 703-377-7606 703-902-3613 FAX McQueen.joshua@bah.com
Environmental Protection Agency (EPA) Voting	Kevin J. Kirby US EPA 1200 Pennsylvania Ave NW Room 6408, Mailcode 2822 Washington DC 20460 202-566-1656 202-566-1639 FAX kirby.kevin@epamail.epa.gov	Nathan Wilkes Data Standards Branch US EPA OEI/OIC, EPA West 1200 Pennsylvania Ave NW Room 6146D, Mailcode 20460 202-566-0335 202-566-1639 FAX wilkes.nathan@epa.gov
ESRI Voting	Dave Danko ESRI 8620 Westwood Center Dr Vienna, VA 22182 703-506-9515 x8011 703-506-9514 FAX ddanko@esri.com	Jeanne Foust ESRI 3504 Damon Street Eau Claire, WI 54701 715-835-6041 715-835-6406 951-314-7204 (Mobile)
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GeoQuest International, Inc.	Carl Burnett 10440 Little Patuxent Parkway Suite 900 Columbia, MD 21004 301-890-6288 301-847-7329 FAX info@geoquest.com	No Alternate
George Mason University Voting	Dr Liping Di George Mason University LAITS 6301 Ivy Lane Suite 620 Greenbelt, MD 20770 301-982-0795 301-345-5492 FAX ldi@gmu.edu	Dr Barry Schlesinger George Mason University LAITS 6301 Ivy Lane Suite 620 Greenbelt, MD 20770 301-220-0353 301-345-5492 FAX bschlesi@gmu.edu
Intergraph Services Company (ISC) Advisory	Ms Robin Lovell Intergraph Services Co (ISC) Po Box 6724 Huntsville, AL 35824 256-730-7580 256-730-6728 FAX robin.lovell@intergraph.com	Ms Karen Lynch Intergraph Services Co (ISC) Po Box 6724 Huntsville, AL 35824 256-730-7001 256-730-6728 FAX Karen.lynch@intergraph.com
Lockheed Martin Corporation Voting	Shawn Silkensen Lockheed Martin Corp. 15050 Conference Center Drive Chantilly, VA 20151 703-460-3406 703-460-3040 FAX shawn.m.silkensen@lmco.com	No Alternate
MITRE Voting	Stephen A. Hirsch MITRE Corp. Mail Stop W 452 1820 Dolley Madison Blvd. McLean, VA 22102 703-883-7769 703-883-3615 FAX hirsch@mitre.org	Mike Jay MITRE Corp. Mail Stop H 317 7515 Colshire Dr McLean, VA 22102 703-883-5645 703-883-3308 FAX mikejay@mitre.org
NASA Voting	Ms. Myra Bambacus NASA Geosciences Interoperability Office Code 610.0 (GIO) Goddard Space Flight Center, MD 20771 301-286-3215 Myra.J.Bambacus@nasa.gov	Phil Yang NASA Geosciences Interoperability Office Code 610.0/GMU Goddard Space Flight Center, MD 20771 301-286-5329 cyang3@gmu.edu
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Oracle Voting	Dr. John R. Herring Oracle Corporation One Oracle Drive Nashua NH 03602 USA 603-897-3216 603-897-3334 FAX john.herring@oracle.com	Dr. Jayant Sharma Oracle Corporation One Oracle Drive Nashua, New Hampshire 03062 (603) 897-3187 (phone) (603) 897-3334 (fax) jayant.sharma@oracle.com
SeiCorp, Inc Voting	William Craig 5870 Trinity Parkway Suite 350 Centreville, VA 20120 703-222-9722 703-409-7546 - cell bcraig@seicorp.com	James Greenwood 5870 Trinity Parkway Suite 350 Centreville, VA 20120 703-222-9722 jgreenwood@seicorp.com
United States Bureau of the Census Voting	Randy Fusaro Chief, National Geographic Partnerships Team U.S. Census Bureau 4600 Silver Hill Road- MS 7400 Washington, DC 20233-7400 301-763-1118 301-457-4710 FAX randy.j.fusaro@census.gov	Anne .V.O Connor U.S. Census Bureau 4600 Silver Hill Road- MS 7400 Washington, DC 20233-7400 301-763-1056 301-457-4710 FAX anne.v.o.connor@census.gov
United States Department of Homeland Security Voting	Barry Reff DHS/FEMA 5321 Riggs Road Gaithersburg, MD 20882 301-926-5566 202-646-3398 barry.reff@dhs.gov	Nate Smith DHS/FEMA 500 C street S.W. Washington D.C. 20472 202-646-4503 Nate.smith@dhs.gov
United States Army – Corps of Engineers Voting	Kevin Mullane US Army Corps of Engineers Attn: CEERD - TR-R, 7701 Telegraph Road Alexandria, VA, 22315-3864 703-428-6792 703-428-6834 mullane@usace.army.mil	Bobby Carpenter US Army Corps of Engineers Attn: CEERD – ID 3909 Halls Ferry Road Vicksburg, MS 391-634-4572 601-634-4584 FAX bobby.g.carpenter@erdc.usace.army.mil
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USDA Forest Service/Fire Science Lab Voting	Bryce Nordgren 5775 West Highway 10 Missoula, MT 59808 406-829-6955 bnordgren@fs.fed.us	J. Meghan Salmon 5775 West Highway 10 Missoula, MT 59808 406-829-6974 jmsalmon@fs.fed.us

Attachment 2 - INCITS L1, Processed Standards for Reportable Year 2006

INCITS Project: 90-R, INCITS 38, Information Technology – Codes for the Identification of the States, the District of Columbia, Puerto Rico, and Insular Areas of the United States

INCITS Project: 91-R, INCITS 31, Information Technology – Structure for the Identification of the Counties and County Equivalents of the U.S. and its Outlying Associated Areas for Information Interchange

INCITS Project: 92-R, INCITS 47, Information Technology – Structure for the Identification of Named Populated Places, Primary County Divisions and other Entities of the U.S. and Its Outlying Areas for Information Interchange

INCITS Project: 93-R, INCITS 61, Information Technology – Representation of Geographic Point Locations for Information Interchange

INCITS Project: 510-R, INCITS 145, Information Technology – Codes for the Identification of Hydrographic Units in the United States and the Caribbean Outlying Areas

INCITS Project: 987-M, Information Technology – INCITS 320, Spatial Data Transfer

INCITS Project: 1411-M, INCITS 353, Information Technology – Spatial Data Standard for Facilities, Infrastructures and Environment (SDSFIE), rev.2.4

INCITS Project: 1574-D, Information Technology – Geographic Information Framework Data Content Standards – Base Document

INCITS 436.1 - Information Technology – Geographic Information Framework Data Content Standards –Cadastral

INCITS 436.2 - Information Technology – Geographic Information Framework Data Content Standards – Digital orthoimagery

INCITS 436.3 - Information Technology – Geographic Information Framework Data Content Standards – Elevation

INCITS 436.4 - Information Technology – Geographic Information Framework Data Content Standards – Geodetic Control

INCITS 436.5 - Information Technology – Geographic Information Framework Data Content Standards –Governmental unit and other geographic boundaries

INCITS 436.6 - Information Technology – Geographic Information Framework Data Content Standards – Hydrography

INCITS 436.7 - Information Technology – Geographic Information Framework Data Content Standards – Transportation Base

INCITS 436.7a - Information Technology – Geographic Information Framework Data Content Standards – Air

INCITS 436.7b - Information Technology – Geographic Information Framework Data Content Standards – Rail

INCITS 436.7c - Information Technology – Geographic Information Framework Data Content Standards – Roads

INCITS 436.7d - Information Technology – Geographic Information Framework Data Content Standards – Transit

INCITS 436.7e - Information Technology – Geographic Information Framework Data Content Standards – Inland waterways

INCITS Project: 1792-M, Information Technology – Homeland Security Mapping Standard – Point Symbology Management