Applying ISO/TC 211 standards to the development of standards through Geospatial One-Stop

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Topics

- Overview of Geospatial One-Stop (slides 3-5)
- Standards under development through Geospatial One-Stop (slides 6-7)
- Standardization approach (slides 8-9)
- Applying ISO/TC 211 standards to the development of standards through Geospatial One-Stop (Slides 10-15)
- Status of Geospatial One-Stop (Slide 16)
- Links (Slide 17)
Geospatial One-Stop

E-Government (E-gov) Initiative

• Component of President’s Management Agenda
• Geospatial One-Stop is one of 24 E-gov initiatives

Objectives

• Raise the visibility of the strategic value of geographic information and the National Spatial Data Infrastructure (NSDI).

• Accelerate implementation of the NSDI.

• Increase Federal agency accountability for the stewardship and sharing of geospatial resources.

• Make it easier, faster, and less expensive for all levels of government and public to access geospatial information.
Geospatial One-Stop

- U.S. Office of Management and Budget oversees the direction of all E-Government Initiatives.

- U.S. Department of the Interior serves as the Managing Partner for Geospatial One-Stop.

- A Board of Directors of both Federal and non-Federal representatives provides guidance to the project.

- The Federal Geographic Data Committee (FGDC) provides project support to the implementation of Geospatial One Stop.
Geospatial One-Stop Project Modules

1. Develop standards for data themes used by many different GIS applications. These themes are known as NSDI Framework themes.

2. Inventory existing Framework data holdings and create metadata to enable data discovery through the NSDI Clearinghouse.

3. Create metadata for planned data acquisition and update of Framework data to enable data discovery through the NSDI Clearinghouse. The intent is to enable opportunities for partnerships.

4. Prototype and deploy enhanced data access and web mapping services for Federal Framework data.

5. Establish a (One-Stop) Federal Portal providing web services to extend the capabilities of the NSDI Clearinghouse Network.
Standards under Development through Geospatial One-Stop

Base Standard

- Elevation
- Cadastral
- Hydrography
- Governmental Units
- Orthoimagery
- Transportation
  - Rail
  - Air
  - Roads
  - Transit
  - Waterways
- Geodetic Control
Standards under Development through Geospatial One-Stop

- Working draft base standard
- Working draft data theme standards
- Working draft sub-theme standards

Module 1
- Base Standard
- Elevation
- Cadastral
- Hydrography
- Governmental Units
- Orthoimagery
- Geodetic Control
- Transportation
  - Air
  - Rail
  - Roads
  - Transit
  - Waterways

Final draft pre-ANSI harmonized framework data standard
Draft framework data standard (submitted September 30)
Standardization approach

• Bring together subject matter experts from all levels of government, academia, and the private sector to develop data standards for NSDI Framework themes

• Develop standards through the procedures of the InterNational Committee for Information Technology Standards (INCITS).
Geographic Information Standards Activities in the United States

- **ISO**
  - Is U.S. member body of
  - Is a Technical Committee of
  - ISO Technical Committee (TC) 211
  - Accredits U.S. TAG to

- **American National Standards Institute (ANSI)**
  - Is accredited by
  - Is a Subcommittee of
  - IS0

- **InterNational Committee on Information Technology Standards (INCITS)**
  - Is accredited by
  - Is a Subcommittee of
  - Is a voting member of

- **INCITS Technical Committee L1**
  - Is an advisory member of
  - Is strategic member of

- **Consortia and Academia**
  - Open GIS Consortium
    - OMG
    - W3C
    - OASIS etc.

- **Federal Standards**
  - Accredited Standards Development Organization

- **States**
- **Municipalities**
- **ICSP**
  - Chairs

- **NIST**
  - Reports to

- **OMB**
  - Sets Policy For

- **FGDC**
  - Participate in standards development

- **Federal Standards Development Organizations**

- **Other Standards Development Organizations**
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Focus on

• ISO 19109, Geographic information - Rules for application schema
• ISO 19115, Geographic information - Metadata
• ISO 19123, Geographic information - Schema for coverage geometry and functions
Application of ISO 19109

- Use General Feature Model to describe geographic features (applies to geodetic control, cadastral, hydrography, transportation, and government units boundaries themes)

- Build Application schema in UML using rules in Section 8
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UML Example:
Government Units Boundaries
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Data dictionaries provide supporting documentation for UML models

Example: excerpt from data dictionary for GUB_GovernmentalUnit class
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Application of ISO 19115

Standards developed through Geospatial One-Stop will be compliant with ISO 19115

Some elements listed as optional in ISO 19115 are mandatory in Geospatial One-Stop

- Metadata standard name
- Metadata standard version
- Dataset purpose
- Dataset progress
- Dataset maintenance and update frequency

Elements cross-walked to FGDC Content Standard for Digital Geospatial Metadata, FGDC-STD-001-1998 (version 2.0); therefore, data standards will be compliant with FGDC standard
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Application of ISO 19123 (for digital orthoimagery and elevation themes)

Digital orthoimagery adopts ISO 19123 classes such as CV_Coverage, CV_ContinuousGridCoverage, CV_Grid, CV_GridValuesMatrix

Elevation standard currently undergoing revision, which will instigate revision of orthoimagery.
Status of standards being developed through Geospatial One-Stop

- Standards project registered as INCITS Project 1574-D, Geographic Information – Framework Data Content Standard
- Package of standards was submitted for review and ballot by INCITS Technical Committee L1, Geographic Information Systems, on 8 October 2003 - comparable to submitting an ISO standard for ballot as CD
- Objective is an American National Standard (ANS)
Resources

- Geospatial One-Stop, www.geo-one-stop.gov
- FGDC, www.fgdc.gov
- INCITS Technical Committee L1, www.incits-l1.org
- INCITS, www.incits.org
Questions?

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