

# **North American Profile**

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# Introduction

**This presentation will review the process and the content of the standard but in detail review what the Federal Geographic Data Committee has/ or will do to aid in the new standard's implementation. This paper will conclude with an open forum to allow the federal community to comment and make recommendations.**

# ISO 19115 Geospatial Metadata

- Provides a schema for describing geographic data and services
  - individual dataset descriptions
  - geospatial web services
  - data catalogs
  - clearinghouse activities
- Applies to multiple levels of geographic information:
  - datasets
  - dataset series
  - individual data features
  - individual feature properties



# Why ISO 19115 ? Establishes an international, multilingual framework to:

- provide appropriate information to characterize geographic data properly
- facilitate the organization and management of geographic information
- enable users to efficiently apply geospatial data by knowing the data basic characteristics
- enable users to locate, access, evaluate, deliver, and integrate geographic data**

# ISO 19115 and other ISO Standards

- Language Codes
- County Codes
- Conceptual Schema Language
- Profiles
- Spatial Schema
- Temporal Schema
- Rules for Application Schema
- Methodology for Feature Cataloging
- Spatial Referencing by Coordinates
- Quality Principles
- Quality Evaluation Procedures
- Metadata, Technical Corrigendum 1
- Encoding
- Services
- Geographic Information Services
- Geodetic codes and Parameters
- Location Based Services- Tracking and Navigation
- GML
- XML
- **OGC's Web Services Common Specification**

# ISO 19115 Geospatial Metadata

- Defines a core set of metadata required to serve the full range of applications:
  - data discovery
  - fitness for use
  - data access
  - data transfer
  - data application



# ISO 19115 Geospatial Metadata

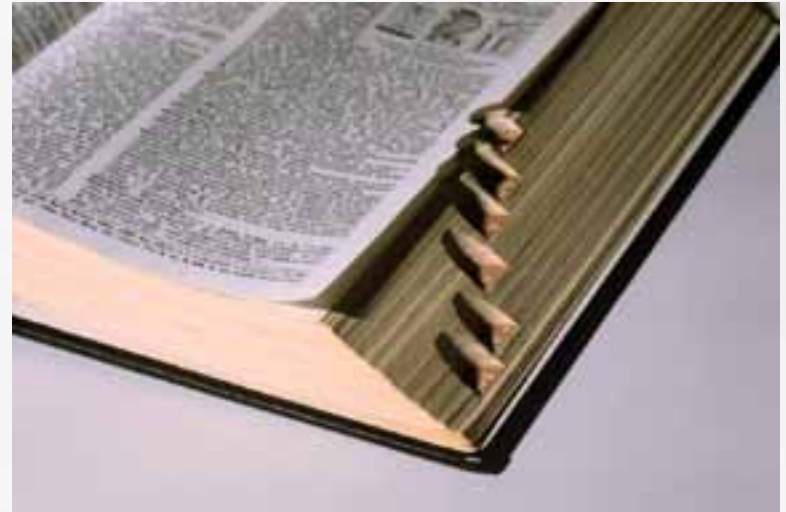
- Provides information about the geographic data or service :
  - identification
  - extent
  - quality
  - spatial schema
  - temporal schema
  - spatial reference
  - distribution





# ISO 19115 Geospatial Metadata

- Establishes:
  - terminology
  - definitions
  - conditionality
    - mandatory
    - conditional
    - optional
  - a method for extending the metadata record to address specialized or custom needs





# Why ISO 19115 ?

- Compared to the Content Standard for Digital Geospatial Metadata (CSDGM), ISO 19115:
  - can be applied to a wider range of geographic products
  - provides a greater number of open domains and optional elements to support greater flexibility in describing geographic products
  - utilizes a more complex structure to better address the many facets of geographic products

- Metadata Entity Set Information
- Identification Information
  - Dataset Identification
  - Service Identification*
- Constraints
- Data Quality Information
- Maintenance Information
- Spatial Representation Information
- Reference System Information
- Content Information
- *Portrayal Catalogue Information*
- Distribution Information
- *Application Schema Information*

# North American Profile - ISO 19115

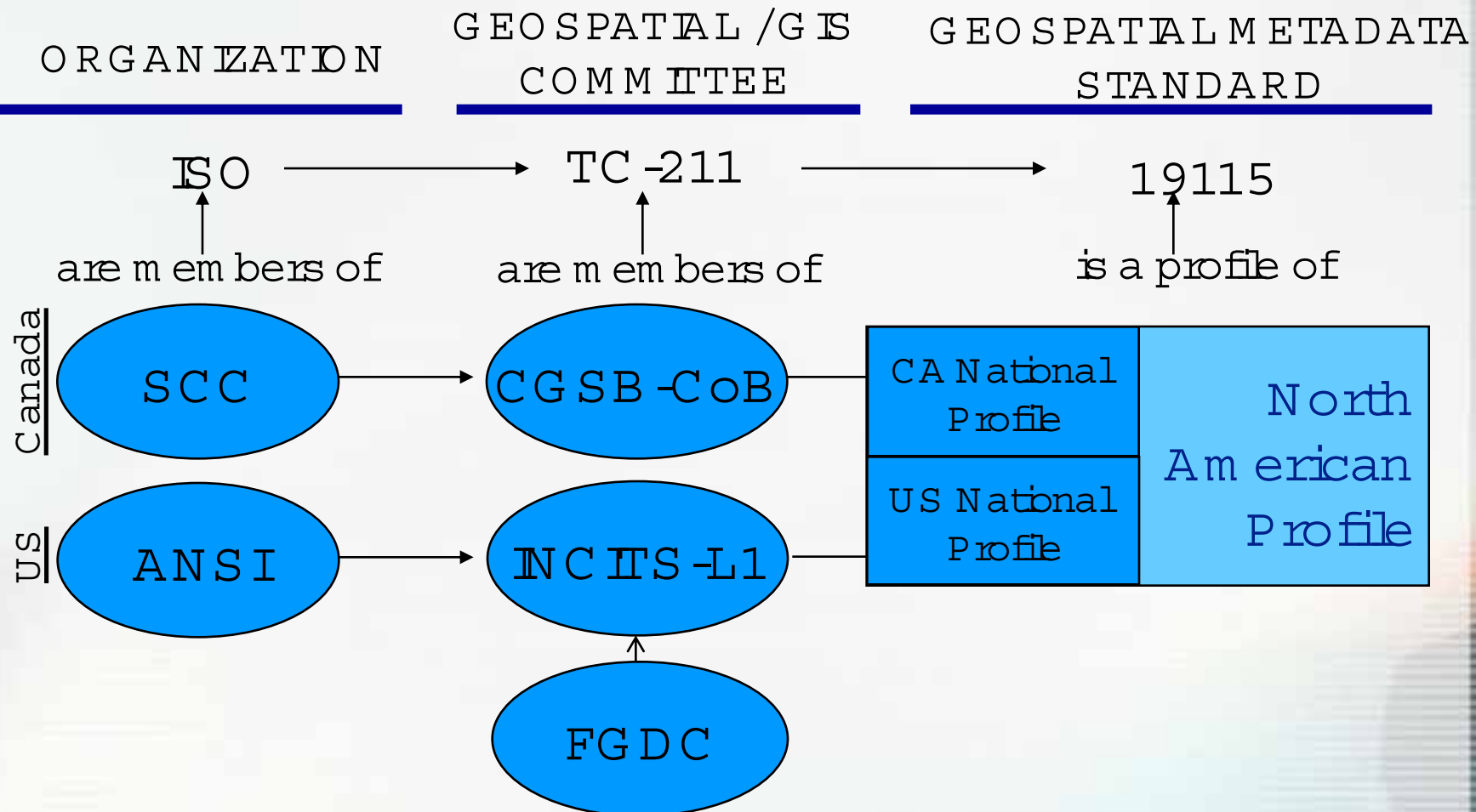
- **Goal.**

- Meet the geospatial metadata implementation needs of the US through the development of a Profile guidance document.

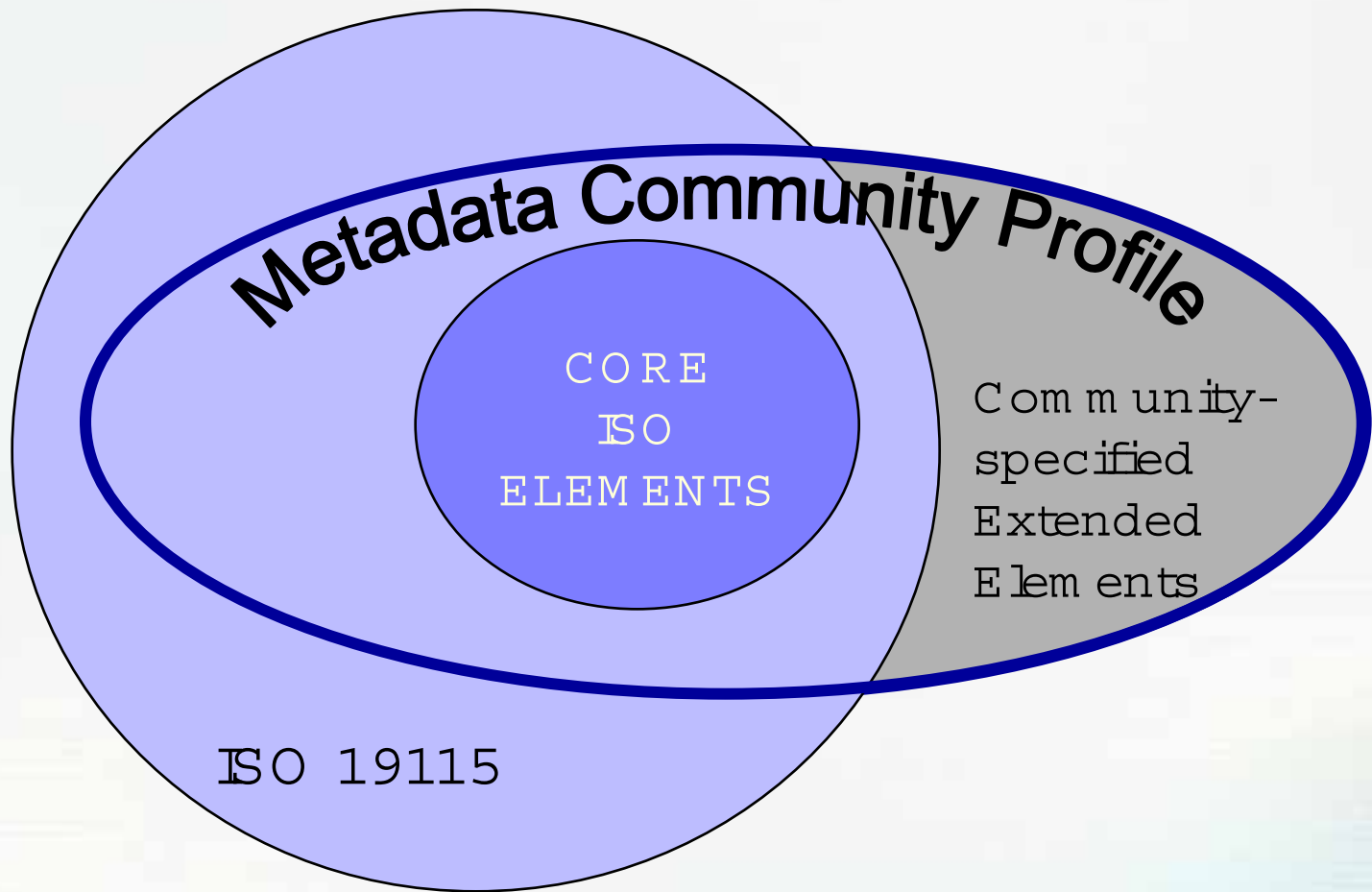
- **Objectives.**

- Comprehensive profile.
- Identical content with Canadian Profile.
- Release by ANSI same date and time as CSB.
  - Results in North American Profile: NAP

# ISO, TC211, ANSI and FGDC



# ISO 19115 Community Profiles



# ISO 19115 Community Profiles

- removes ISO optional components that do not apply to the community
- **increases the obligation of ISO 'optional' elements of strong significance to the community**
- creates new metadata entities, sections or elements to improve characterization of community geospatial data or services
- adds to or amends the domain of an existing ISO element to include community specific descriptors

# ISO 19115 Community Profiles

- What are the obligations associated with the creation of a community profile?
- Those developing a community profiles must:
  - check the ISO 19115 profile registry before creating a new profile to ensure that a suitable profile has not already been created
  - adhere to the rules laid out by ISO
  - not change the name, definition, or data type of an existing ISO metadata element
  - register their final profile with ISO
  - maintain the profile



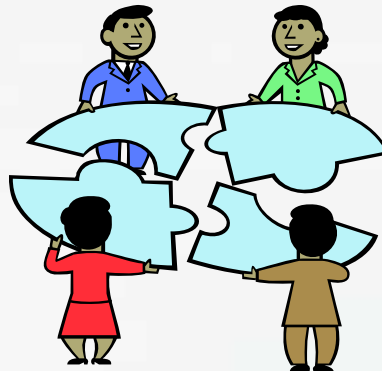
# NAP Editing Committee

## Canada

- Natural Resources Canada
- Ontario Ministry of Natural Resources
- CGSB-CoG
  - Members

## USA

- Federal Geographic Data Committee
  - FGDC Metadata Working Group
- INCITS-L1
  - Members



# **The US National Profile**

## **Goal of the US National Profile**

- **Meet the geospatial metadata implementation needs of the US through the development of a Profile guidance document**
- **Objectives of the US National Profile**
  - **determine the metadata content necessary to fully support the documentation needs of the US geospatial community**
  - **coordinate content and publication with the Canadian National Profile so that a common, North American Profile, is established**

# The North American Profile

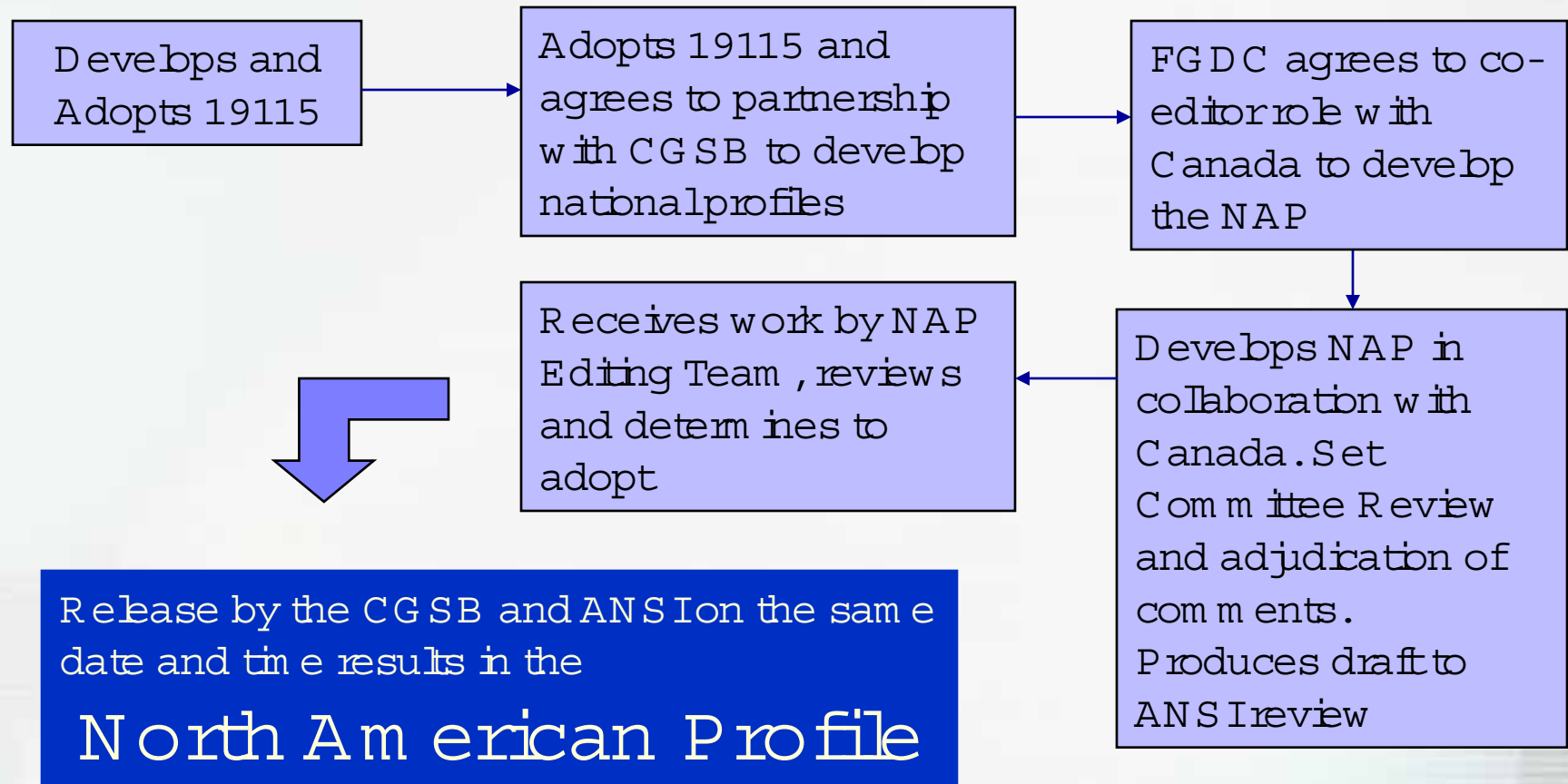
- **Canada and the US agreed to:**
  - add no new attributes (elements) to the standard
  - increase conditionality for those attributes deemed critical
  - modify codelists (fixed domains) to reflect US/CA geospatial activities and applications
  - create new codelist for free text elements that were relatively standard in the US and Canada
  - modify/simplify UML diagrams
  - establish best practices to guide metadata content for specific attributes

# The North American Profile - Process

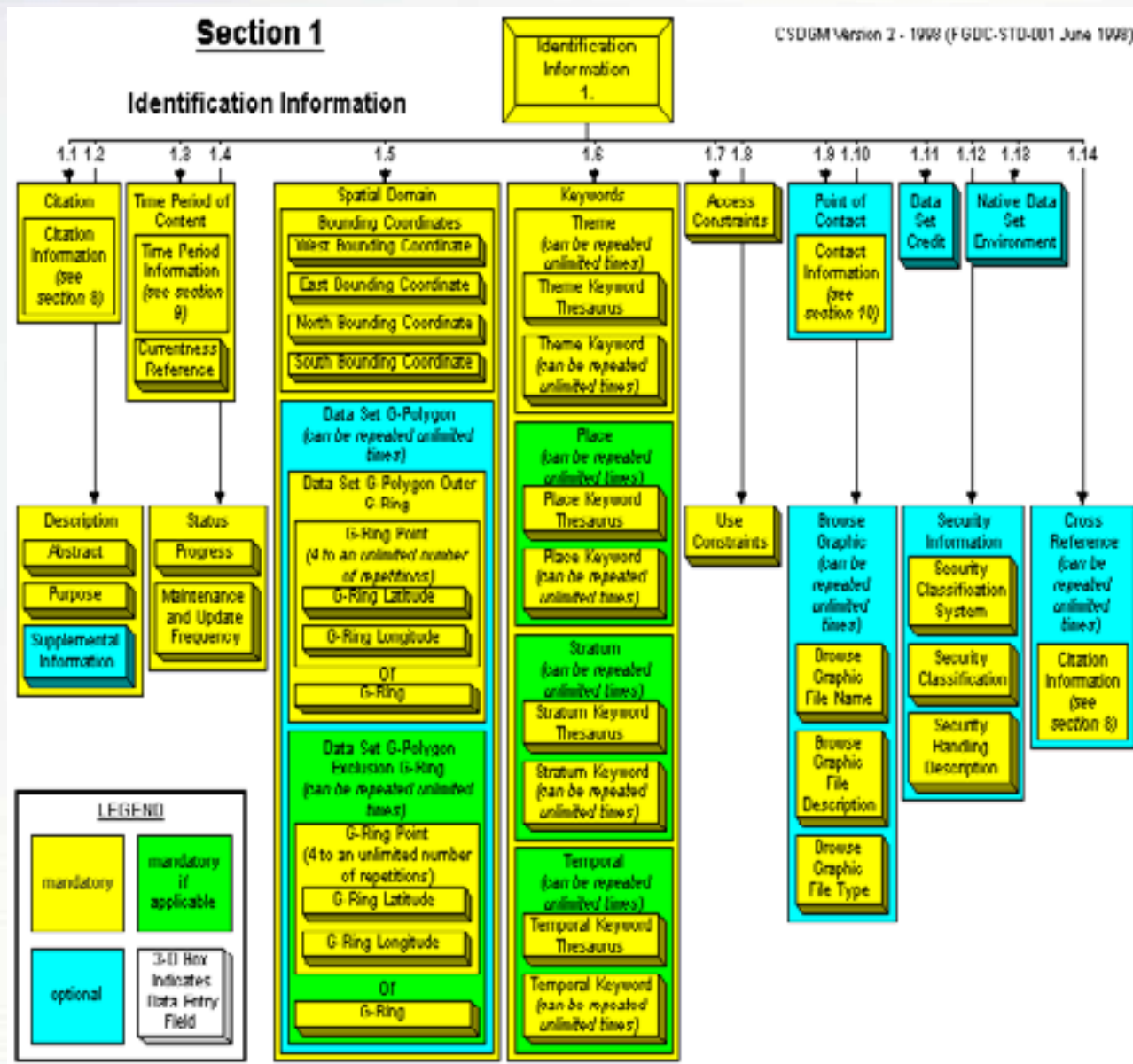
ISO

ANSI

FGDC



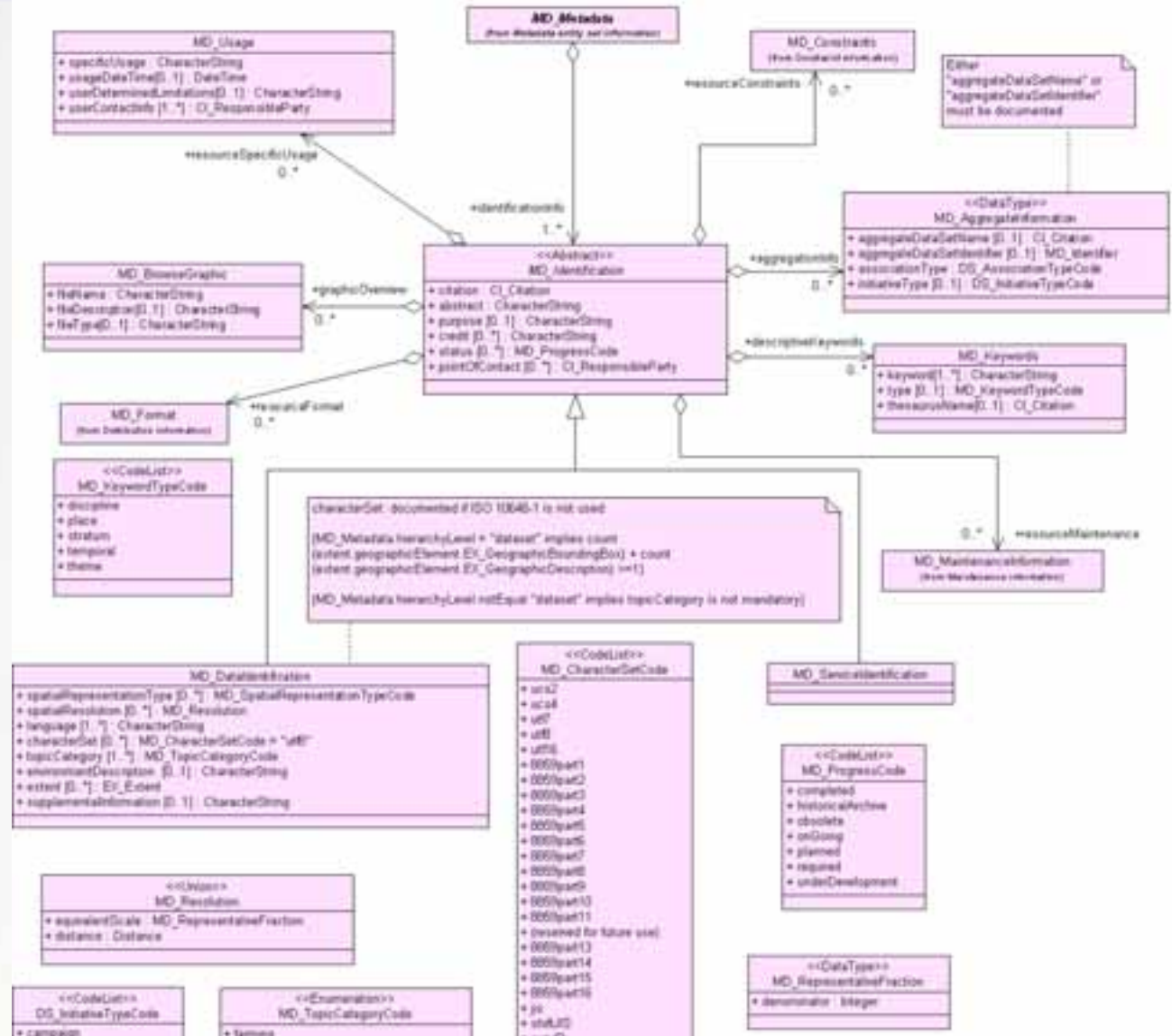
# FGDC CSDGM Graphic Representation



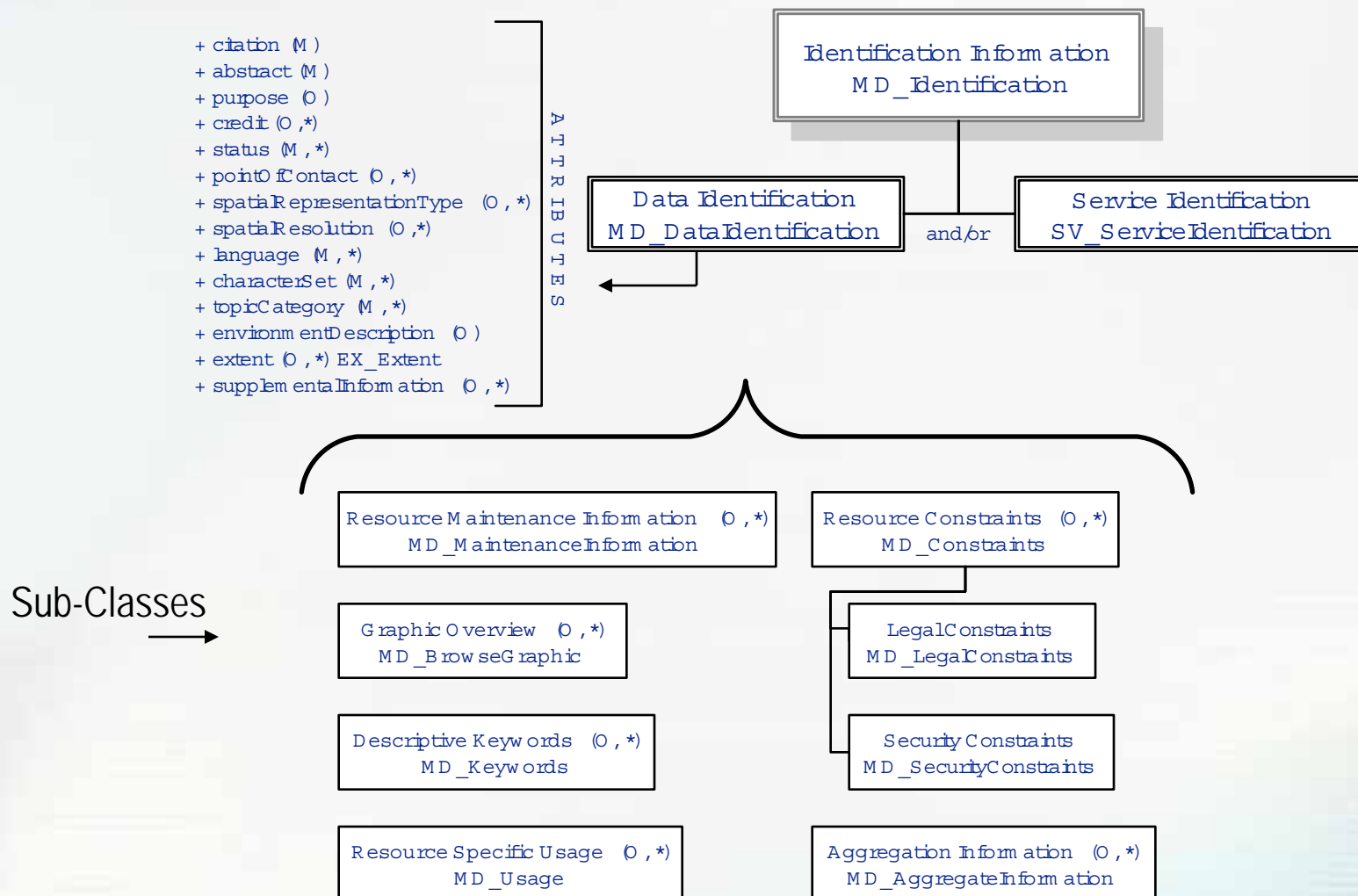
# ISO UML Diagrams

# Decisions?:

- Stylize
- Simplify
- Colorize



# NAP Diagrams- current model





# Organization and Terminology

## •FGDC

- Sections
- Elements
- Compound Elements
- Domains

## •ISO / NAP

- Classes
- Subclasses
- Attributes
- Domains



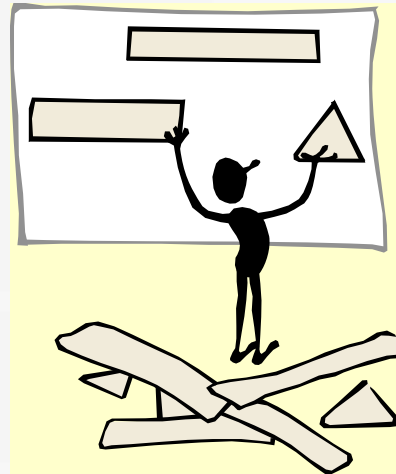
# Obligation Terminology: FGDC to ISO

## •FGDC:

- Mandatory
- Mandatory-if-applicable
- Optional

## •ISO/NAP:

- Mandatory
- Conditional
- Optional



# **ISO 19115 / North American Profile- Code lists**

**Codelists are used to control vocabulary and to support the multi-lingual quality of ISO 19115 metadata.**

**A code list registry is used in the North American Profile to register the codes used in ISO 19115 and in the Profile**

# North American Profile Code List Registry

■ [http://www.cits.rncan.gc.ca/html/brodeurj/.protege/.napMetadata/napMetadataWebsite/register/ISO19115NorthAmericanProfile\\_Instance\\_0.html](http://www.cits.rncan.gc.ca/html/brodeurj/.protege/.napMetadata/napMetadataWebsite/register/ISO19115NorthAmericanProfile_Instance_0.html) (currently)

NAP  
METADATA  
REGISTER

Instance: North American Profile of ISO19115:2003 Metadata Register

Types

● RE\_Register

Own Slots

Slot Name	Value
registerCitation	MetadataRecordInformation, fileIdentifier, language, characterSet, parentIdentifier, hierarchyLevel, contact, dateStamp, metadataStandardName, metadataStandardVersion, dataSetURL, locale, spatialRepresentationInfo, referenceSystemInfo, identificationInfo, contentInfo, distributionInfo, dataQualityInfo, portrayalCatalogueInfo, metadataConstraints, applicationSchemaInfo, metadataMaintenance, identificationInformation, citation, abstract, purpose, credit, status, pointOfContact, resourceMaintenance, graphicOverview, descriptiveKeywords, resourceConstraints, aggregationInfo, DataIdentification, spatialRepresentationType, spatialResolution, language, characterSet, topicCategory, environmentDescription, extent, supplementalInformation, ServiceIdentification, serviceType, serviceTypeVersion, accessProperties, extent, couplingType, coupledResource, operatesOn, containsOperation, Resolution, equivalentScale, distance, RepresentativeFraction, denominator, BrowseGraphic, fileName, fileDescription, fileType, Keywords, keyword, type, thesaurusName, AggregateInformation, aggregateDataSetName, aggregateDataSetIdentifier, associationType, initiativeType, CoupledResource, identifier, operationName, OperationMetadata, operationName, DCP, operationDescription, invocationName, connectPoint, dependsOn, parameters, Parameter, name, direction, description, optionality, repeatability, valueType, Type, ConstraintInformation, useLimitation, LegalConstraints, accessConstraints, useConstraints, otherConstraints, SecurityConstraints, classification, userNote, classificationSystem, handlingDescription, DataQualityInformation, scope, report, lineage, Completeness, CompletenessCommission, CompletenessOmission, LogicalConsistency, ConceptualConsistency, DomainConsistency, FormatConsistency, TopologicalConsistency, PositionalAccuracy, AbsolutePositionalAccuracy, GriddedDataPositionalAccuracy, RelativePositionalAccuracy, TemporalAccuracy, AccuracyOfTimeMeasurement, TemporalConsistency, ThematicAccuracy, ThematicClassificationCorrectness, QualitativeAttributeAccuracy, QuantitativeAttributeAccuracy, Report, nameOfMeasure, measureIdentification, measureDescription, evaluationMethodType, evaluationMethodDescription, evaluationProcedure, dateTime, result, Lineage, statement, source, processStep, Source, description, scaleDenominator, sourceReferenceSystem, sourceCitation, sourceExtent, ProcessStep, description, rationale, dateTime, processor, Scope, level, extent, levelDescription, ScopeDescription, attributes, features, featureInstances, attributeInstances, dataset, other, Result, QuantitativeResult, valueType, valueUnit, errorStatistic, value, ConformanceResult, specification, explanation, pass, MaintenanceInformation, maintenanceAndUpdateFrequency, dateOfNextUpdate, userDefinedMaintenanceFrequency, updateScope, updateScopeDescription, maintenanceNote, contact, SpatialRepresentationInformation, GridSpatialRepresentation, numberOfDimensions, axisDimensionsProperties, cellGeometry, transformationParameterAvailability, GeorectifiedGridInformation, checkPointAvailability, checkPointDescription, cornerPoints,



ISO19115NorthAmericanProfile20070801 Project: North American Profile of ISO19115:2003 Metadata - Windows Internet Explorer

http://www.cits.mcan.gc.ca/html/brodeur/j.protege/napMetadata/napMetadataWebsite/register/ISO19115NorthAmericanF

ISO19115NorthAmericanProfile20070801 Project: Nor...

registerContainedItem

GeographicBoundingBox, westBoundLongitude, eastBoundLongitude, southBoundLatitude, northBoundLatitude, GeographicDescription, geographicIdentifier, TemporalExtent, extent, SpatialTemporalExtent, spatialExtent, VerticalExtent, minimumValue, maximumValue, verticalCRS, Citation, title, alternateTitle, date, edition, editionDate, identifier, citedResponsibleParty, presentationForm, series, otherCitationDetails, collectiveTitle, ISBN, ISSN, Date, date, dateType, ResponsibleParty, individualName, organisationName, positionName, contactInfo, role, Contact, phone, address, onlineResource, hoursOfService, contactInstructions, Telephone, voice, facsimile, Address, deliveryPoint, city, administrativeArea, postalCode, country, electronicMailAddress, OnlineResource, linkage, protocol, applicationProfile, name, description, function, Series, name, issueIdentification, page, napCI\_DateTypeCode, creation, publication, revision, notAvailable, inForce, adopted, deprecated, superseded, **napCL\_OnLineFunctionCode, download**, information, offlineAccess, order, search, upload, webService, emailService, browsing, fileAccess, webMapService, napCI\_PresentationFormCode, documentDigital, documentHardcopy, imageDigital, imageHardcopy, mapDigital, mapHardcopy, modelDigital, modelHardcopy, profileDigital, profileHardcopy, tableDigital, tableHardcopy, videoDigital, videoHardcopy, audioDigital, audioHardcopy, multimediaDigital, multimediaHardcopy, diagramDigital, diagramHardcopy, napCI\_RoleCode, resourceProvider, custodian, owner, user, distributor, originator, pointOfContact, principalInvestigator, processor, publisher, author, collaborator, editor, mediator, rightsHolder, napDQ\_EvaluationMethodTypeCode, directInternal, directExternal, indirect, napDS\_AssociationTypeCode, crossReference, largerWorkCitation, partOfSeamlessDatabase, source, stereoMate, isComposedOf, napDS\_InitiativeTypeCode, campaign, collection, exercise, experiment, investigation, mission, sensor, operation, platform, process, program, project, study, task, trial, napMD\_CellGeometryCode, pointArea, voxel, napMD\_CharacterSetCode, ucs2, ucs4, utf7, utf8, utf16, 8859part1, 8859part2, 8859part3, 8859part10, 8859part11, 8859part13, 8859part14, 8859part15, 12, napMD\_ClassificationCode, unclassified, restricted, confidential, secret, topSecret, sensitive, forOfficialUseOnly, napMD\_CoverageContentTypeCode, image, thematicClassification, physicalMeasurement, napMD\_DimensionNameTypeCode, row, column, vertical, track, crossTrack, line, sample, time, napMD\_GeometricObjectTypeCode, complex, composite, curve, point, solid, surface, napMD\_ImagingConditionCode, blurredImage, cloud, degradingObliquity, fog, heavySmokeOrDust, night, rain, semiDarkness, shadow, snow, terrainMasking, napMD\_KeywordTypeCode, discipline, place, stratum, temporal, theme, product, subTopicCategory, napMD\_MaintenanceFrequencyCode, continual, daily, weekly, fortnightly, monthly, quarterly, biannually, annually, asNeeded, irregular, notPlanned, unknown, semimonthly, napMD\_MediumFormatCode, cpio, tar, highSierra, iso9660, iso9660RockRidge, iso9660AppleHFS, UDF, napMD\_MediumNameCode, cdRom, dvd, dvdRom, 3halfInchFloppy, 5quarterInchFloppy, 7trackTape, 9trackTape, 3480Cartridge, 3490Cartridge, 3580Cartridge, 4mmCartridgeTape, 8mmCartridgeTape, 1quarterInchCartridgeTape, digitalLinearTape, onLine, satellite, telephoneLink, hardcopy, hardcopyDiazPolyester08, hardcopyCardMicrofilm, hardcopyMicrofilm240, hardcopyMicrofilm35, hardcopyMicrofilm70, hardcopyMicrofilmGeneral, hardcopyMicrofilmMicrofiche, hardcopyNegativePhoto, hardcopyPaper, hardcopyDiaz, hardcopyPhoto, hardcopyTracedPaper, hardDisk, USBFlashDrive, napMD\_PixelOrientationCode, center, lowerLeft, lowerRight, upperRight, upperLeft, napMD\_ProgressCode, completed, historicalArchive, obsolete, onGoing, planned, required, underDevelopment, proposed, napMD\_RestrictionCode, copyright, patent, patentPending, trademark, license, intellectualPropertyRights, restricted, otherRestrictions, licenseUnrestricted, licenseEndUser, licenseDistributor, privacy, statutory, confidential, sensitivity, napMD\_ScopeCode, attribute, attributeType, collectionHardware, collectionSession, dataset, series, nonGeographicDataset, dimensionGroup, feature, featureType, propertyType, fieldSession, software, service, model, tile, napMD\_RepresentationTypeCode, vector, grid, textTable, tin, stereoModel, video, napMD\_TopicCategoryCode, farming, biota, boundaries, climatologyMeteorologyAtmosphere, economy, elevation, environment, geoscientificInformation, health, imageryBaseMapsEarthCover, intelligenceMilitary, inlandWater, location, oceans, planningCadastre, society, structure, transportation, utilitiesCommunication, napMD\_TopologyLevelCode, geometryOnly, topology1D, planarGraph, fullPlanarGraph, surfaceGraph, fullSurfaceGraph, topology3D, fullTopology3D, abstract, nap\_DCPList XML, CORBA, JAVA, COM, SQL, WebServices, napSV\_ParameterDirection, in, out, in/out, napSV\_CouplingType, loose, mixed, tight, napMD\_FileFormatCode,

napCL\_OnLineFunctionCode, download

Internet 100%

# NAP METADATA REGISTER

Instance: download

Types

- RE\_RegisterItem

Own Slots

Slot Name	Value
itemAdditionInformation	creation of the registry of the North American Profile of ISO19115:2003 metadata
itemAlternativeExpressions	téléchargement
itemAmendmentInformation	
itemClarificationInformation	
itemClass	napCI_OnLineFunctionCode
itemDateAccepted	2007
itemDateAmended	
itemDefinition	online instructions for transferring data from one storage device or system to another
itemDescription	
itemFieldOfApplication	geographic information
item	
item	
item	
itemSpecificationLineage	
itemSpecificationSource	B.5.3.2
itemStatus	{valid, valide, válido}
itemSuccessor	

online instructions for translating data from one storage device or system to another

# **Summary- The North American Profile of ISO 19115**

- **Represents a cooperative effort between the US and Canada to establish a common geospatial metadata standard that meets the needs of both nations**
- **Supports the same goal and objectives as the ISO 19115 Geospatial Metadata Standard**
- **Is fully compliant with the ISO 19115 Geospatial Metadata Standard**
- **Follows ISO rules for the development of a community profile**
- **Closely resembles the CSDGM in content but has a more complex, robust, structure**



# **FGDC Implementation Strategies**

# FGDC CSDGM Conversion Tool

- Intergraph assumed a NSDI Cooperative Agreements Grant to develop a conversion tool.
- A GUI which invokes an XSLT file to transform the content in an FGDC.XML file.
- Shareware.

# NAP Training Modules

- Introduction to the NAP
- Interpreting the NAP
- NAP Content



# NSDI Curriculum

<i>The National Spatial Data Infrastructure (NSDI)</i>		
Geospatial Data Discovery and Access	Geospatial Data Integration	Geospatial Partnerships, Policy and Planning
<i>Geospatial One-Stop Portal</i>	<i>NSDI Standards</i>	<i>NSDI Policies and Practices</i>
<i>Geospatial Metadata</i>	<i>NSDI Data Themes</i>	<i>NSDI Partnership Opportunities</i>
<i>Geospatial Web Services</i>	<i>The National Map</i>	<i>Geospatial Business Planning</i>

# Classroom Metadata Training

- **NSDI Cooperative Agreements Program**

[www.fgdc.gov/grants](http://www.fgdc.gov/grants)

- **Other training opportunities**



# FGDC Event Calendar

Workshops are posted

The screenshot shows a web browser window titled "calendar — Federal Geographic Data Committee - Mozilla Firefox". The address bar displays "http://www.fgdc.gov/calendar". The website features a purple header with the "fgdc" logo and navigation links: Home, Library, Calendar, Forums, and Contact Us. A sidebar on the left lists various categories like Participants, Data & Services, Standards, Metadata, Framework, Policy & Planning, Training, Grants, International, Geospatial LoB, and NGAC. The main content area shows the "Calendar" view for February 2008, with filters for categories and a "Refresh" button. The calendar grid displays events for January 29, 30, 31, and February 5, 2008.

calendar — Federal Geographic Data Committee - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.fgdc.gov/calendar

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Site Map Accessibility Contact

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Federal Geographic Data Committee

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you are here: home → calendar

Submit an Event

3 months month week by day week by hour day

Categories: ☒ View All ☐ Conference ☐ Steering Committee Meeting ☐ Coordination Group Meeting ☐ Presentation ☐ Subcommittee/Working Group Meeting ☐ Training ☐ Geo LoB Workgroup Meeting ☐ Other

Refresh

<< previous month February 2008 next month >>

2008 Feb 11 Jump

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29 January 29, 2008 FGDC Steering Committee Meeting 02:00 pm - 04:00 pm	30 NBII+ Metadata Training Jan 30 - Jan 31	31 MADPS 2008 Winter Conference Jan 31 - Feb 4	1	2
3	4	5 Feb 5, 2008 FGDC Coordination	6	7	8	9

Done

# Train the Trainer

- One or multi-day format.
- Metadata experienced recruits.
- Focus on:
  - Instructional design.
  - Presentation skills.
  - Workshop logistics.
  - Develop a metadata learning module.





# Trainer Registry

- TTT alumni and self-designated metadata trainers register as metadata trainers on fgdc.gov.



fgdc  
Federal Geographic Data Committee

you are here: Home » participation » individual » Trainers

### Metadata Trainers

Registration at the FGDC Metadata Training Registry is not an endorsement by the FGDC.

Register as a Metadata Trainer

Name	Role	Discipline	Jurisdiction
Paul Aschmann	Basic metadata	state/local government	State of Texas
Michael Anthony	Basic metadata, from the trainers, other		
Kimberly Ball	Basic metadata, GIS, discipline none		none
Leslie Bearden	Basic metadata	Federal, state, local government	none
Mark Badier	Basic metadata, from the trainers		
Jose H. Beltran	Basic metadata, from the trainers	Natural resource management, GIS, remote sensing, Geomorphology, Conservation and sustainable development, Rural Communities	none
Wargo Benavidez	Basic metadata	none	Wyoming and Colorado front range
John Boehm	Basic metadata, from the trainers, other	State government (environmental)	New Jersey and surrounding states
John Booth	Basic metadata, from the trainers, other	Proactive in coastal environmental data, specifically coastal oceanography (physical, geological, chemical, biological)	none

# NAP Workbook

- In early stages of development
- Based on the North American Profile
- Free from the FGDC website
  - Black and white graphic representation
  - More tips and hints for implementation



# NAP Guidance Documents

- As interest and questions arises expect implementers needs to be addresses through informative documentation.

<http://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>



## FGDC Don't Duck Metadata Metadata Quick Guide

*A short reference guide for writing quality metadata*

- Formerly published as 'Metadata Cliff Notes', the document has been updated to include more specific information regarding 'Online\_Linkage', 'Progress', and 'Theme\_Keyword' elements.
- March 1, 2005 Corrected ISO Topic Category example 'soil fertility' (page 9) and revised capitalization of ISO Topic Category Names (pages 9-10).
- April 24, 2006 Corrected date format referenced w/in Publication\_Date (6.2)

# **Open Forum**

## **Direct FGDC implementation tools**