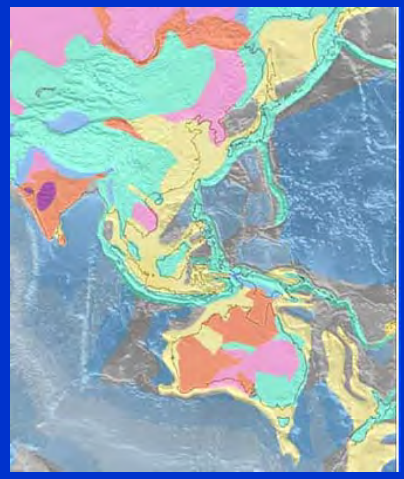
# Geoinformation Metadata Standard of CCOP

**Davao, The Philippines**
**Oct 7-9, 2009**

**1** CCOP Metadata Standard of Geoinformation

**2** Software development

**3** Benefits and way forward



# 1 CCOP Metadata Standard

## based on ISO19115 and CGS DD2006-05

**2006**

Guangzhou, China 2006

- CCOP Metadata working group workshop in 2006

Pic. By Marivic

Summary on 28-item standard

Requirement Analysis for an entire coverage metadata standard

Advanced IT application and products for geological survey and exploration

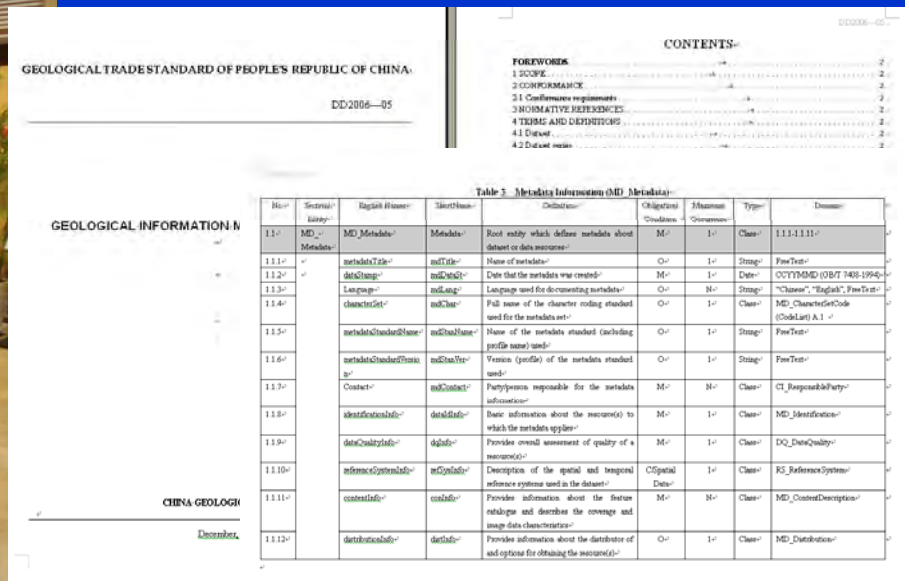
# CCOP metadata project phase II

**2007**

CGS submitted a proposal to support phase II CCOP metadata standard work and was approved in 43rd annual meeting at Daejeon, Korea, 2006.

English version of Chinese ***Geo-information Metadata Standard*** sent to most of the CCOP member countries as reference.

CGS launched a project early 2007 to fund CCOP metadata phase II



GEOLOGICAL TRADE STANDARD OF PEOPLE'S REPUBLIC OF CHINA

DD2006—05

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GEOLOGICAL INFORMATION M

CHINA GEOLOGI

December,

Table 3 Metadata Information (MD_Metadata)

| No. | Sections/ Entity | English Names | IdentNames | Definitions | Obligation/ Conditions | Maximum Occurrences | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 1.1 | MD_ Metadata | MD_Metadata | Metadata | Root entity which defines metadata about dataset or data resources | M | 1 | Class | 1.1.1-1.1.11 |
| 1.1.1 | | metadataTitle | mdTitle | Name of metadata | O | 1 | String | FreeText |
| 1.1.2 | | dateStamp | mdDateSt | Date that the metadata was created | M | 1 | Date | CCYYMMD (GB/T 7408-1994) |
| 1.1.3 | | Language | mdLang | Language used for documenting metadata | O | N | String | "Chinese", "English", FreeText |
| 1.1.4 | | characterSet | mdChar | Full name of the character coding standard used for the metadata set | O | 1 | Class | MD_CharacterSetCode (CodeList) A.1 |
| 1.1.5 | | metadataStandardName | mdStanName | Name of the metadata standard (including profile name) used | O | 1 | String | FreeText |
| 1.1.6 | | metadataStandardVersion | mdStanVer | Version (profile) of the metadata standard used | O | 1 | String | FreeText |
| 1.1.7 | | Contact | mdContact | Party/person responsible for the metadata information | M | N | Class | CI_ResponsibleParty |
| 1.1.8 | | identificationInfo | dataIdInfo | Basic information about the resource(s) to which the metadata applies | M | 1 | Class | MD_Identification |
| 1.1.9 | | dataQualityInfo | dqInfo | Provides overall assessment of quality of a resource(s) | M | 1 | Class | DQ_DataQuality |
| 1.1.10 | | referenceSystemInfo | rsCitySInfo | Description of the spatial and temporal reference systems used in the dataset | C/Spatial Data | 1 | Class | RS_ReferenceSystem |
| 1.1.11 | | contentInfo | conInfo | Provides information about the feature catalogue and describes the coverage and image data characteristics | M | N | Class | MD_ContentDescription |
| 1.1.12 | | distributionInfo | distInfo | Provides information about the distributor of and options for obtaining the resource(s) | O | 1 | Class | MD_Distribution |

| | |
|---|---|
| *Cataloguing information 1* | |
| Metadata file identifier | |
| Title in English Translation (Full) | |
| Edition | |
| Series name | |
| Reference date | |
| *Responsible party information* | |
| Responsible party organization name | |
| Postal address | |
| City | |
| Postal Code | |
| Country | |
| On-line resource linkage | |
| Electronic mail address | |
| Voice telephone | |
| Fax number | |
| *Location information* | |
| West bounding coordinate (Generally Lat-Lon decimal degree) | |
| East bounding coordinate | |
| North bounding coordinate | |
| South bounding coordinate | |
| Geographic extent name | |
| Resolution level (Map scale) | |
| *Constraint information* | |
| Access constraints | |
| Use constraints | |
| *Cataloguing information 2* | |
| Spatial reference system (Description) | |
| Distribution data format name (like Shape, Raster, DXF, etc.) | |
| Distribution media | |
| Language of metadata code | |
| Metadata character code set (ASCII) | |
| Metadata date | |

# CCOP 28 Item Standard

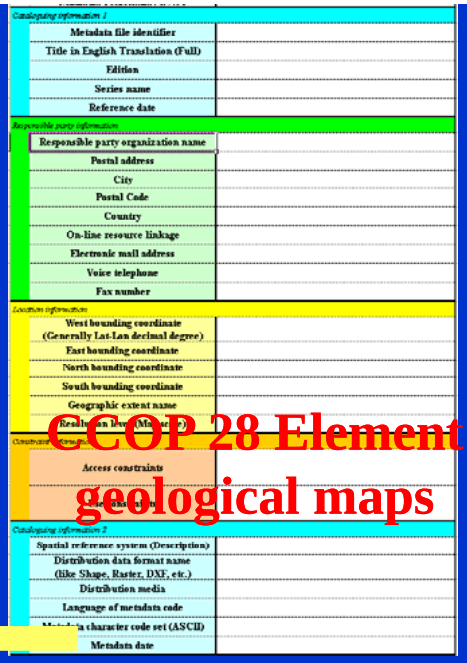
## For geological maps

2008

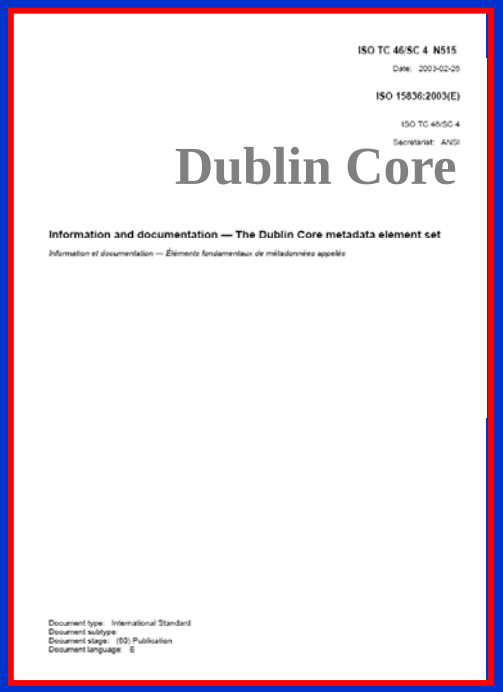
# CCOP Metadata standard

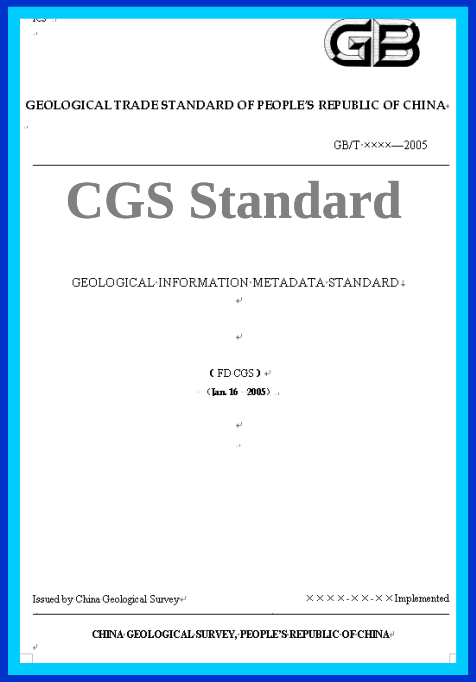
***General*** **Draft**

CCOP Metadata Project Phase II – First Workshop
18 – 20 March 2008, Haikou, China




**CCOP 28 Element geological maps**

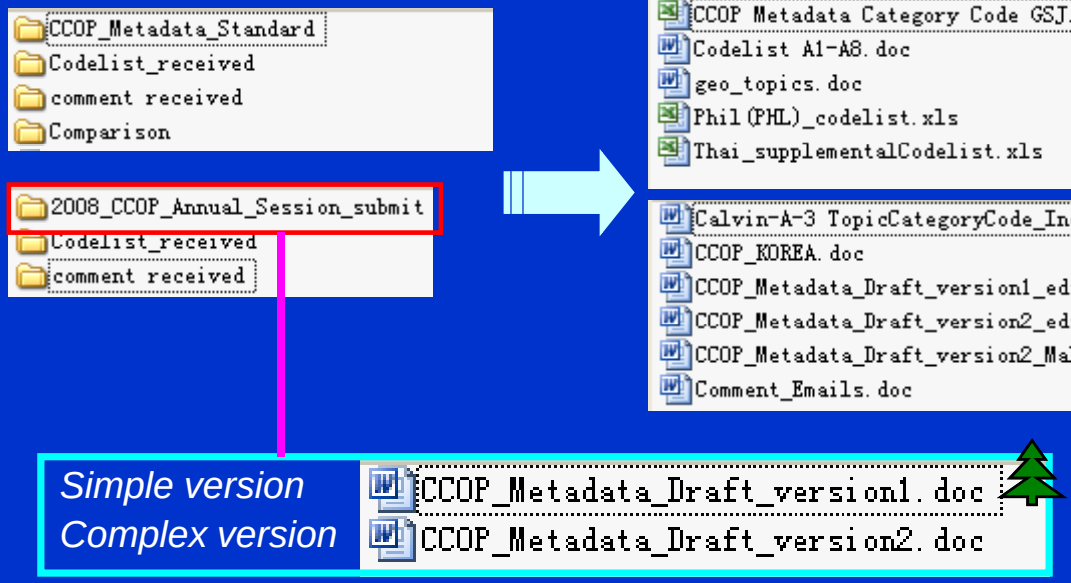


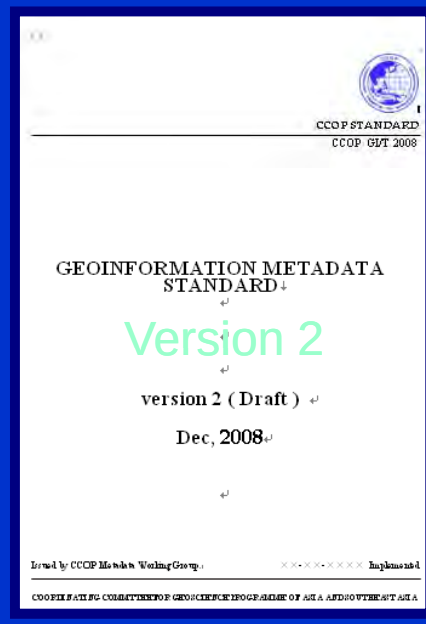



**5 packages**
**6 code-list**
**56 elements**

# *2 circulations* since Mar.,2008

**2008**

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- *Mr. Le Tuan Anh, Vietnam*
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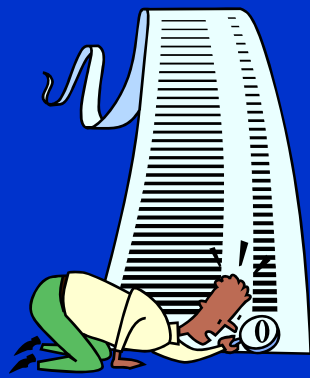

Workshop on CCOP Metadata Standard & Requirement Analysis for
the CCOP Natural Gas Database Metadata
in Cooperation with
CCOP Metadata Project Phase II
Shanghai, China, 1 -3 April 2009
2009
CCOP Metada Standard
Version 2 final
Workshop on
CCOP metadata standard & requirement analysis for the CCOP
Natural Gas Database Metadata
In cooperation with
CCOP Metadata Project Phase II
Shanghai, China, 1 -3 April 2009
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CCOP STANDARD
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GEOINFORMATION METADATA STANDARD
Version 2
Issued by CCOP Metadata Working Group, ××-××-×××× Implemented
COORDINATING COMMITTEE FOR GEOSCIENCE PROGRAMME OF EAST AND SOUTHEAST ASIA
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5 packages
7 code-list
45 elements

# **3** CCOP Metadata Standard

- **Including 5 packages ( 4 sections + 1 common class) and 7 code lists.**
- **35 +10 elements in total, with 15 mandatory.**
- **Issued in 2008 by CCOP Metadata Working Group**
- **On the basis of ISO19115 and CGS Standard DD2006-05**
- **Covering the whole metadata contents of the former *28- item* Standard and *Dublin Core***
- Applicable to the publication and interchange of spatial and non-spatial geological information covering *geological maps, minerals, groundwater, geo-hazard, oil and gas, coal, geothermal, coastal zone, geophysics, geochemistry, drilling, geo-archives, etc.*

# CCOP GEOINFORMATION METADATA STANDARD

Edition 2 published in Sep.2009

## 1 SCOPE

## 2 TERMS AND DEFINITIONS

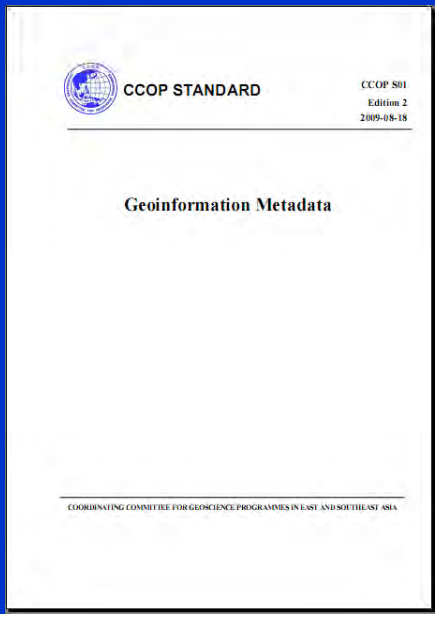
- Dataset
- Metadata
- Metadata element
- Metadata section

## 3 METADATA STRUCTURE AND CONTENT

- Metadata structure
- Metadata contents
- Data Dictionary

*DATA DICTIONARY : 5 TABLES*

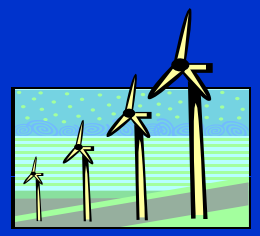
*ANNEX : 7 CODELISTS*



# 1 SCOPE

- This standard has defined the schema required for description of geoinformation and provides information about the identification, quality, contents, spatial reference information, and the distribution of geological information.

- This standard is applicable to the description, dataset information publication, and network interchanges of the geological datasets dominated by various spatial data and the non-spatial information datasets and can also be referenced in the metadata collection and the metadata database construction.



## 2 TERMS AND DEFINITIONS

A. Dataset

Identifiable collection of data.

Collection of data can be either a database or a part of the database.

B. Metadata

Data about data.

They describe the related information about the data, including the contents, coverages, quality, status, management, owner, and the distribution.

C. Metadata element

Discrete unit of metadata.

Metadata elements are collected and described in tables called metadata dictionary.

D. Metadata section

Set of metadata elements describing the same aspect of a dataset. Metadata section can be either a single section or an aggregation of one or more sections and elements.

# 3 METADATA STRUCTURE AND CONTENT

## A. Metadata structure

Fig.1 describes the structure of geoinformation metadata.

Geoinformation metadata comprises of 4 sections:

- One mandatory section
- Two optional sections
- A common class named ResponsibleParty.

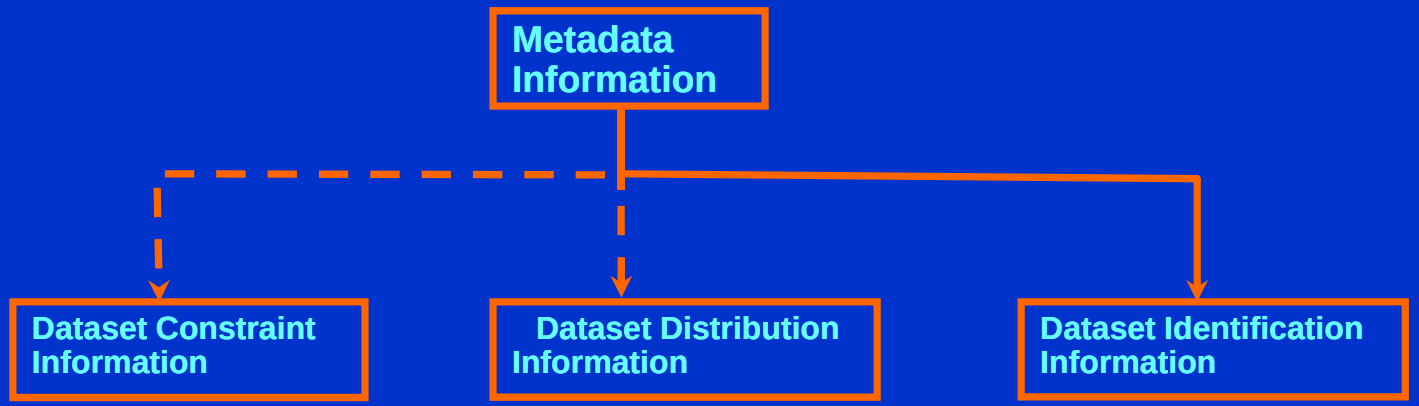



Fig.1 The structure diagram of geoinformation metadata

# 3 METADATA STRUCTURE AND CONTENT

## B. Metadata contents

- Metadata Information

  Metadata information section describes the whole metadata information of geoinformation, and is represented by the mandatory section MD_Metadata. It comprises of the following metadata sections and elements: Mandatory section, Optional section, Mandatory elements, Optional elements

- Dataset Identification Information

  Identification information is the basal one of geo-dataset, and is represented by MD_Identification section which is a mandatory section.

- Dataset Constraint Information

  Constraint Information describing general limitation for access and restrictions on using the dataset. It is an optional section.

- Dataset Distribution Information

  Dataset distribution information describing dataset distributor and data-obtaining method. It is an optional section.

## CCOP Geoinformation Metadata Standard *Sections and Elements*

| ***Section*** | ***Total*** | ***Mandatory*** | ***Conditional*** | ***Optional*** |
|---|---|---|---|---|
| Metadata information **(MD_Metadata)** | 6 | 2+1 | | 3 |
| Dataset identification information **(MD_Identification)** | 23 | 7 | 9 | 7 |
| Dataset constraint Information **(MD_Constraint)** | 2 | 1 | | 1 |
| Dataset distribution Information **(MD_Distribution)** | 4 | 3 | | 1 |
| *Responsible Party and Contact Information* ***(ResponsibleParty)*** | 10 | 1 | | 9 |
| ***SUM*** | 45 | 15 | | |

## Metadata Information

It describes the whole metadata information of geoinformation, and comprises of the following sections and elements:

- Mandatory section
  - MD_ Identification
- Optional section
  - RS_Constraint
  - MD_Distribution
- Mandatory elements
  - metadataTitle
  - metadataStamp
- Optional elements
  - contact( refer to a common class ***ResponsibleParty***)

# Dataset Identification Information

It's the basal one of geo-dataset, and is represented by MD_Identification. It is an aggregation of the following elements:

Mandatory elements:

- **title**
- **dateRelease**
- **language**
- **abstract**
- **dataRepresentationType**
- **topicCategory**
- **pointOfcontact**

*7 Ms*

Conditional elements:

- **keyWords**
- **spatialResolution**
- **eastBoundLongitude**
- **westBoundLongitude**
- **southBoundLongitude**
- **northBoundLongitude**
- **geographicIdentification**
- **browseGraphic**
- **coordinateSystemType**
- **referenceSyetemName**

*10 Cs*

Optional elements:

- **edition**
- **seriesName**
- **characterSet**
- **projection**

*4 Os*

## Dataset Constraint Information

It describes general limitation for access and restrictions on using the dataset. It is an optional section.

Mandatory elements:

useConstraint

Optional elements:

accessConstraint

## Dataset Distribution Information

It describes dataset distributor and data-obtaining method.

- Mandatory elements:
  - distributorContact
  - mediaName
  - dataFormatName
- Optional element:
  - onlineSource

# 3 METADATA STRUCTURE AND CONTENT

- Data Dictionary
- Element and section names

  Element name is the sole marker of metadata element.
- Short names

  Except for the codelists, each metadata element has a unique short name in the entire standard.
- Definitions

  Definition offers accurate description of metadata entites and metadata elements.
- Obligation/Condition

  This is a descriptor indicating whether a metadata section or metadata element shall always be documented in the metadata or sometimes be documented (i.e. contains value(s)). This descriptor may have the following values: M (mandatory), C (conditional), or O (optional).

*Mandatory (M): It defines the metadata section or metadata element that should be documented. The optional sections may have the mandatory elements; these elements only become mandatory if the optional sections are used.*

*Conditional (C):It defines the conditions whether or not the metadata section/element is documented. When the condition is met, the section/element becomes mandatory.*

*Optional (O):The metadata section or the metadata element may be documented or may not be documented. If an optional section is not used, all the elements contained within that section (including mandatory elements) will also not be used. Optional sections may have mandatory elements; those elements only become mandatory if the optional section is used.*

- Maximum occurrence

  It specifies the maximum number of instances the metadata section or the metadata element may have. Single occurrence is shown by “1”; repeating occurrences are represented by “N”.
- Data type

  It specifies a set of distinct values for representing the metadata elements. It may be basal data type or the section called class, stereotype, and associations.
- Domain

  For a metadata section, the domain indicates the line numbers (the serial numbers of the tables in metadata dictionary) covered by that section. For a metadata element, the domain specifies the values allowed, the section or class names, the code list names, data type names, or the use of free text.

# DATA DICTIONARY ： 5 TABLES

• Table 1 to 5 have offered a data dictionary that describes the details of geoinformation metadata sections, classes and elements with names, short names, definitions, obligation/condition, maximum occurrence, types and domain.

• They together with the metadata codelists in Annex have comprised of a complete definition of geoinformation metadata of CCOP.

# Data dictionary tables

## Table 1

Table 1. Metadata information (MD_Metadata)

| No. | Section | Element name | Short name | Definition | Obligation/ Condition | Maximum occurrence | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 1 | MD_Metadata | | Metadata | Root section which defines metadata about dataset or data resources | M | 1 | Class | 1.1-1.8 |
| 1.1 | | metadataTitle | mdTitle | Name of metadata | M | 1 | String | Free Text |
| 1.2 | | dataStamp | mdDataSt | Date that the metadata was created | M | 1 | Date | YYYYMMDD( i.e.YearMonthDay) (use standard) |
| 1.3 | | contact | mdContact | Party/person responsible for the metadata information | O | N | Class | **ResponsibleParty** |
| 1.4 | | identificationInfo | dataIdInfo | Basic information about the resource(s) to which the metadata applies | M | 1 | Class | **MD_Identification** |
| 1.5 | | constrainsInfo | constInfo | Offering general limitation for access and restrictions on using the dataset | O | 1 | Class | **MD_Constraint** |
| 1.6 | | distributionInfo | distribution | Describing dataset distributor and data-obtaining method | O | N | Class | **MD_Distribution** |

# Table 2

Table 2. Dataset identification information (MD_Identification)

| No. | Section | Element name | Short Name | Definition | Obligation/ Condition | Maximum occurrence | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 2.13 | | pointOfContact | idPoC | A person or party related with the dataset | M | N | Class | **ResponsibleParty** |
| 2.14 | | westBoundLongitude | westBL | Western-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east) | C/neither browseGraphic nor geographicIdentification is documented | 1 | Real Type | Decimal, degree -180.0 <= <= West Bounding Longitude Value <= 180.0 |
| 2.15 | | eastBoundLongitude | eastBL | Eastern-most coordinate of the limit of the dataset extent, expressed in longitude in decimal degrees (positive east) | C/ westBoundLongitude is documented | 1 | Real Type | Decimal, degree -180.0 <= East Bounding Longitude Value<= 180.0 |
| 2.16 | | southBoundLatitude | southBL | Southern-most coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north) | C/ westBoundLongitude is documented | 1 | Real Type | Decimal, degree -90,0 <= South Bounding Latitude Value <= 90,0; South Bounding Latitude Value <=North bounding Latitude Value |
| 2.17 | | northBoundLatitude | northBL | Northern-most, coordinate of the limit of the dataset extent, expressed in latitude in decimal degrees (positive north) | C/ westBoundLongitude is documented | 1 | Real Type | Decimal, degree -90,0 <= North Bounding Latitude Value <= 90,0; North Bounding Latitude Value >=South Bounding Latitude Value |
| 2.18 | | geographicIdentification | geoId | Spatial location of a dataset. Describe the conventional or well-known geographic names/scopes of spatial scopes of a dataset, including place names, map sheet names, and their serial numbers. | C/ browseGraphic is not documented | N | String | Free text |
| 2.19 | | browseGraphic | browGraph | The browsing map or index map name of a dataset | C/ geographicIdentification is not documented | 1 | String | Free Text |
| 2.20 | | referenceSyetemName | refSysName | Name of spatial reference system based on geographic identifier | C/spatial dataset is documented | 1 | String | Free Text |

# Table 3 and 4

Table 3. Dataset constraint Information (MD_Constraint)

| No. | Section | Element name | Short name | Definition | Obligation/ Condition | Maximum occurrence | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 3 | MD_ Constraints | | Consts | Restriction on the access and use of a resource or metadata | O | N | | 3.1-3.2 |
| 3.1 | | accessConstraint | accessConsts | Assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the resource or metadata | O | N | Class | RestrictionCode(CodeList) A.5 |
| 3.2 | | useConstraint | useConsts | Assure the protection of privacy or intellectual property, and any special restrictions or limitations or warnings on using the resource or metadata | M | N | Class | RestrictionCode(CodeList) A.5 |

Table 4. Dataset distribution information (MD_Distribution)

| No. | Section | Element name | Short name | Definition | Obligation/ Condition | Maximum occurrence | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 4 | MD_Distribution | | Consts | Restriction on the access and use of a resource or metadata | O | N | | 4.1-4.4 |
| 4.1 | | onlineResource | onLineSrc | Information about online resources from which the resource can be obtained; addresses that offer online access in the model of URL address. | O | N | Class | URL (IETF RFC1738 IETF RFC2056) |
| 4.2 | | distributorContact | distorCont | Distributor of geological information dataset or data resources | M | N | Class | ResponsibleParty |
| 4.3 | | mediaName | medName | Medium name of dataset offered by the distributor | M | 1 | Class | MediumNameCode (CodeList)A.7 |
| 4.4 | | dataFormatName | fomatName | Name and version of data transfer format(s) offered by the dataset distributor | M | 1 | String | Free Text |

# Table 5

Table 5. Responsible Party and Contact Information (ResponsibleParty)

| No. | Common Class | Element name | Short name | Definition | Obligation/Condition | Maximum occurrence | Type | Domain |
|---|---|---|---|---|---|---|---|---|
| 5 | ResponsibleParty | | RespParty | Information about the person(s) and organizations associated with the dataset | Use obligation or condition from the referencing object | Use maximum occurrence from the referencing object | | 5.1-5.10 |
| 5.1 | | individulName | rpIndName | Name and title of the responsible person, separated by a delimiter | C/ organisationName not documented | 1 | String | Free Text |
| 5.2 | | organisationName | rpOrgName | Name of responsible party | C/ individualName not documented | 1 | String | Free Text |
| 5.3 | | electronicMailAddress | eMailAddr | Public address of the electronic mailbox of the responsible organization or individual | M | N | String | Free Text |
| 5.4 | | phone | cntPhone | Telephone numbers at which the organization or individual may be contacted | O | N | String | Free Text (use standard) |
| 5.5 | | facsmile | cntFaxNum | Fax numbers at which the organization or individual may be contacted | O | 1 | String | Free Text |
| 5.6 | | deliveryPoint | cntDelPnt | Detail physical address at which the organization or individual may be contacted, including road name and room number | O | 1 | String | Free Text |
| 5.7 | | city | city | city of the location (city name, county name) | O | 1 | String | Free Text |
| 5.8 | | country | country | Country of the responsible party | O | 1 | Class | Free Text (use standard) |
| 5.9 | | postCode | postCode | ZIP or other postal code | O | 1 | String | Free Text |
| 5.10 | | onlineResource | cntOnlineRes | On-line information that can be used to contact the individual or organization | O | 1 | String | URL (IETF RFC1738 IETF RFC2056) |

# Annex: Geoinformation Metadata CodeList

## A1 and A2

A. 1 LanguageCode (based on ISO639. 2)

| No. | English Names | Code | Definition |
|---|---|---|---|
| | LanguageCode | LanguCd | Name of the language used in one or more of CCOP member countries |
| 1 | KHM | 001 | Khmer (in Cambodia) |

A. 2 CharacterSetCode

| No. | English Names | Code | Definition |
|---|---|---|---|
| | CharacterSetCode | CharSetCd | Character coding standard |
| 1 | UTF8 | 004 | 8-bit variable size UCS Transfer Format, based on ISO/IEC 10646 |
| 2 | ISO-8859-1 | 006 | GB/T 15273.1-1994 Information Process 8-bit single byte coded graphic character sets --Part 1: Latin alphabet No. 1 |
| 3 | usASCII | 025 | United States ASCII code set (ISO 646 US) |
| 4 | BIG5 | 028 | Traditional Chinese code set used in Taiwan, Hong Kong of China and other areas |
| 5 | GB2312 | 029 | Simplified Chinese code set |
| 6 | Windows-874 | | Thai character set encoding for Windows (a standard should not be bounded with particular software.) |
| 7 | TIS 620 | 030 | Thai Industrial Standards ,8-bits character set, a subset of ISO-IR-166, declared by Thai Industrial Standards Institute (TISI) |
| 8 | ISO-8859-11 | 016 | ISO/IEC8859-11 Information Process 8-bit single byte coded graphic character sets --Part 11: Latin alphabet /Thai character |
| 9 | eucKR | 027 | Korean character set |
| 10 | TCVN3-ABC | | 8 bit character code set (Vietnam) |
| 11 | TCVN 6909:2001 | | Unicode font (Vietnam) |
| 12 | eucJP | 024 | Japanese code set used on UNIX based machine (TBC) |
| 13 | shiftJIS | 023 | Japanese code set used on MS-DOS based machine (TBC) |
| 14 | others | | Other characters not defined above |

A3

A. 3 MD_RepresentationTypeCode

| No. | English Names | Code | Definition |
|---|---|---|---|
| | RepresentationTypeCode | RepTypCode | Types of spatial data |
| 1 | vector | 001 | Vector data is used to represent geographic data |
| 2 | grid | 002 | Grid data is used to represent geographic data |
| 3 | text | 003 | Textual data is used to represent geographic data |
| 4 | TIN | 004 | Use triangulated irregular network to represent geographic data |
| 5 | stereomodel | 005 | Multidimensional representation of data |
| 6 | video | 006 | Represent data in video |
| 7 | matrix | 007 | Matrix data |
| 8 | table | 008 | Tabular data is used to represent geographic data |
| 9 | Raster | 009 | Scanned and digital images |
| 10 | Others | 010 | Other types not defined above |

A4

| No. | 1st Category Name | 2nd Category Name | Definition and illustration | | code |
|---|---|---|---|---|---|
| 1 | Geography | | The study of the Earth and its lands, features | | 1000 |
| | | Geochemistry | Geochemistry includes isotope geochemistry, biogeochemistry, organic geochemistry, regional, environmental and exploration geochemistry, such as rock geochemical exploration, soil geochemical exploration, stream sediment geochemical exploration, atmospheric geochemical exploration, biogeochemical exploration, water geochemical exploration, geo-gas survey, chemical analysis, geochemical mapping, geothermal manifestation, radiometric dating, etc. | 2500 |
| 2 | Geology | Geological exploration | Geology on searching or discovery of geo-resources, such as minerals, oil & gas, etc. It includes mineral exploration, ore geology, ocean geoexploration, mineral economics, and so on. | | 2600 |
| | | Exploration and mining administration | Regulations, law and relative activities and documents on geological exploration and mining. | | 2700 |
| | | Drilling | Geological drills for exploration, scientific studies | | 2800 |
| | 3 | Oil and Gas | It includes petroleum geology, oil and gas exploration, exploitation or production, oil and gas field, etc. | | 4300 |
| | | Coalbed methane | It includes coalbed methane geology, coalbed methane exploration, coalbed methane production, etc. | | 4400 |
| | | Gas hydrate | It includes both natural and experimental gas hydrate, gas hydrate geology, gas hydrate exploration, gas hydrate exploitation, etc. | | 4500 |
| | | Coal | It include coal geology, coal exploration, coal production, etc. | | 4600 |
| | | Oil shale | It include oil shale geology, oil shale exploration, oil shale production, etc. | | 4700 |
| | | Geothermal | It is related to energy and may refer to heat that comes from within the Earth. It includes geothermal geology, geothermal exploration, geothermal exploitation, geothermal tourism, etc. | | 4800 |
| | 5 | Geo-Literature | | Literatures of and about geology | 5000 |
| | | Geological publications | Publications of geology, such as books, periodicals, magazines, etc. | | 5100 |
| | | Geological Archives | Geological reports and written materials that mostly are not published | | 5200 |
| | 4 | Geopark | It includes activities, databases, books and other materials about Geopark. A geopark is defined by UNESCO as a territory encompassing one or more sites of scientific importance, not only for geological reasons but also by virtue of its archaeological, ecological or cultural value. | | 5600 |
| | 6 | Others | | Can not be classified above | 6000 |

**6** **1st** ***Category Names***

**31** **2nd** ***Category Names***

**72** **3rd** ***Category Names defined***

# A5 and A6

## A.5 RestrictionCode

| No. | English Names | Code | Definition |
|---|---|---|---|
| | RestrictionCode | Restrict | Limitation(s) placed upon the access or use of the data |
| 1 | copyright | 001 | Exclusive right to the publication, production, or sale of the rights to a literary, dramatic, musical, or artistic work, or to the use of a commercial print or label, granted by law for a specified period of time to an author, composer, artist, distributor |
| 2 | patent | 002 | Government has granted exclusive right to make, sell, use or license an invention or discovery |
| 3 | patentPending | 003 | Produced or sold information awaiting a patent |
| 4 | trademark | 004 | A name, symbol, or other device identifying a product, officially registered and legally restricted to the use of the owner or manufacturer |
| 5 | license | 005 | Formal permission to do something |

ition of non-tangible property

## A.6 CoordinateSystemTypeCode

| No. | English Names | Code | Definition |
|---|---|---|---|
| | CoordinateSystemTypeCode | CoorSysType | |
| 1 | Cartesian | 001 | A *n*-dimensional (*n* stands for an arbitrary positive integer) coordinate system that consists of *n* number axes which perpendicularly cut each other at the origin |
| 2 | Geodetic | 002 | A spherical coordinates of a ground point location expressed in longitudinal and latitudinal degrees |
| 3 | Projected | 003 | Coordinate systems formed through different projection methods |
| 4 | Polar | 004 | A coordinate system that describes the location of a point through the distance between the point and the pole as well as the extensional direction |
| 5 | Gravity Related | 005 | A norm for gravity survey and related calculation |
| 6 | WGS 84 | 4326 | World wide GPS coordinate system. |

A7

## A. 7 MediumNameCode

| No. | English Names | Code | Definition |
|---|---|---|---|
| | MediumNameCode | MediumNameCd | Name of the medium |
| 1 | cdRom | 001 | Read-only optical disk |
| 2 | dvd | 002 | Digital versatile disk, include rewritable disk |
| 3 | dvdRom | 003 | Digital versatile disk, read only |
| 4 | 3halfinchFloppy | 004 | 3,5 inch magnetic disk |
| 5 | 7trackTape | 006 | 7 track magnetic tape |
| 6 | 9trackTape | 007 | 9 track magnetic tape |
| 7 | 3480CatridgeTape | 008 | 3480 cartridge tape drive |
| 8 | 3490 CatridgeTape | 009 | 3490 cartridge tape drive |
| 9 | 3590 CatridgeTape | 010 | 3590 cartridge tape drive |
| 10 | 4mm CatridgeTape | 011 | 4mm magnetic tape |
| 11 | 8mm CatridgeTape | 012 | 8mm magnetic tape |
| 12 | 1quaterInch CatridgeTape | 013 | 0.25 inch magnetic tape |
| 13 | digitalLinearTape | 014 | Half inch cartridge streaming tape drive |
| 14 | onLine | 015 | Direct computer linkage |
| 15 | Satellite | 016 | Linkage through a satellite communication system |
| 16 | TelephoneLink | 017 | Communication through a telephone network |
| 17 | hardcopy | 018 | Pamphlet or leaflet giving descriptive information |
| 18 | harddisk | 019 | Hard disk |
| 19 | flashMemory | 020 | Flash disk |
| 20 | electronicMail | 021 | Offering data in e-mail mode |
| 21 | cdRewritable | 022 | Rewritable optical disk |
| 22 | blurayDisk | 023 | High-definition optical disk |
| 23 | portable hard disk | 024 | Portable Computer hard disk |
| 24 | U-disc/flash disc | 025 | Memory disk of small size |
| 25 | videoDigital | 026 | Digital video recording |
| 26 | others | 099 | Medium not listed |

# 2 Software development

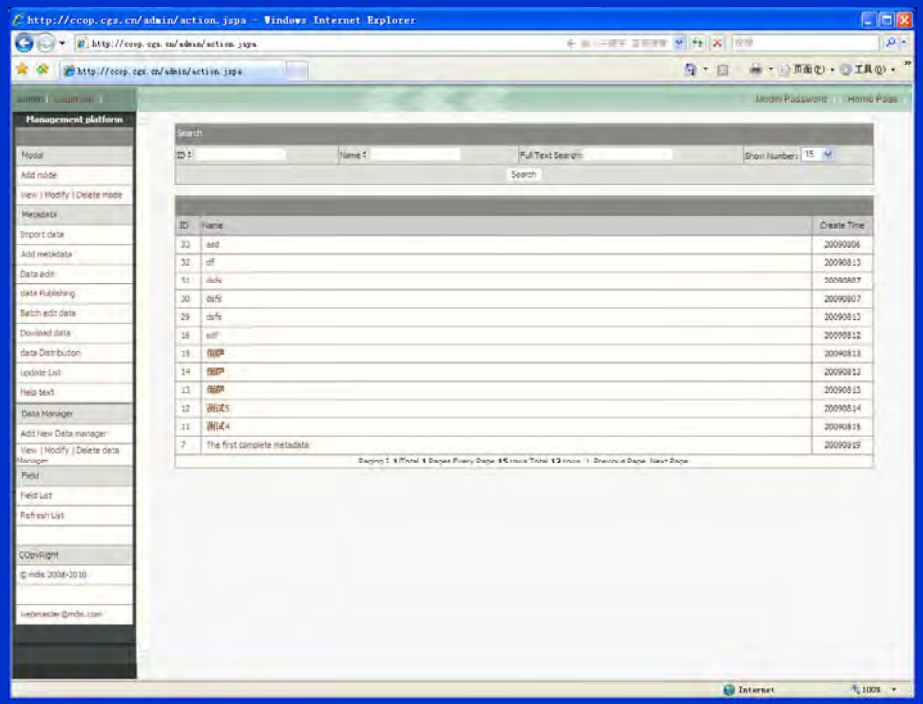
Web based software for metadata management is just finished this September.

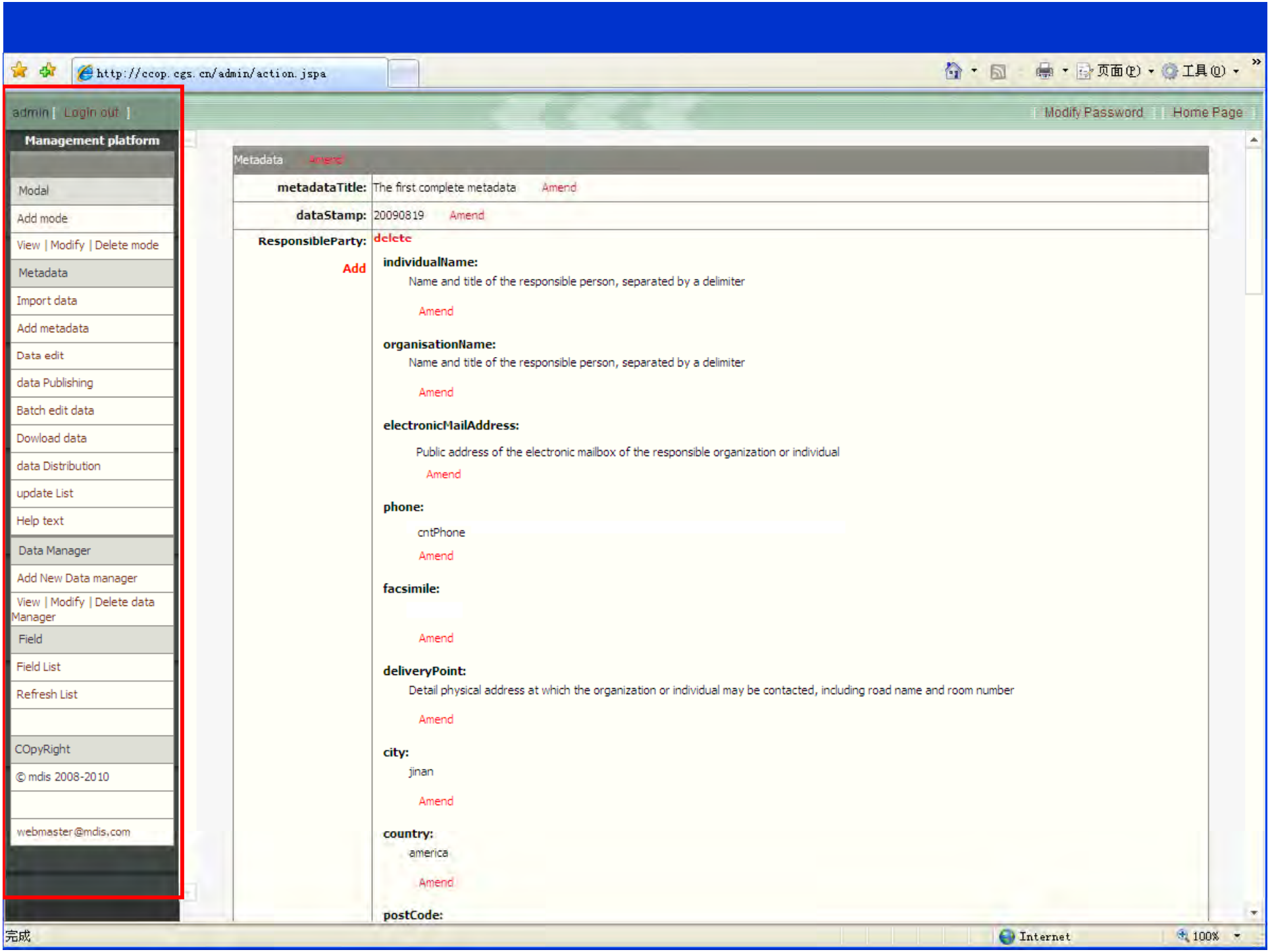
It's now installed at CGS website for test/trial for a month by the developing group. http://ccop.cgs.cn

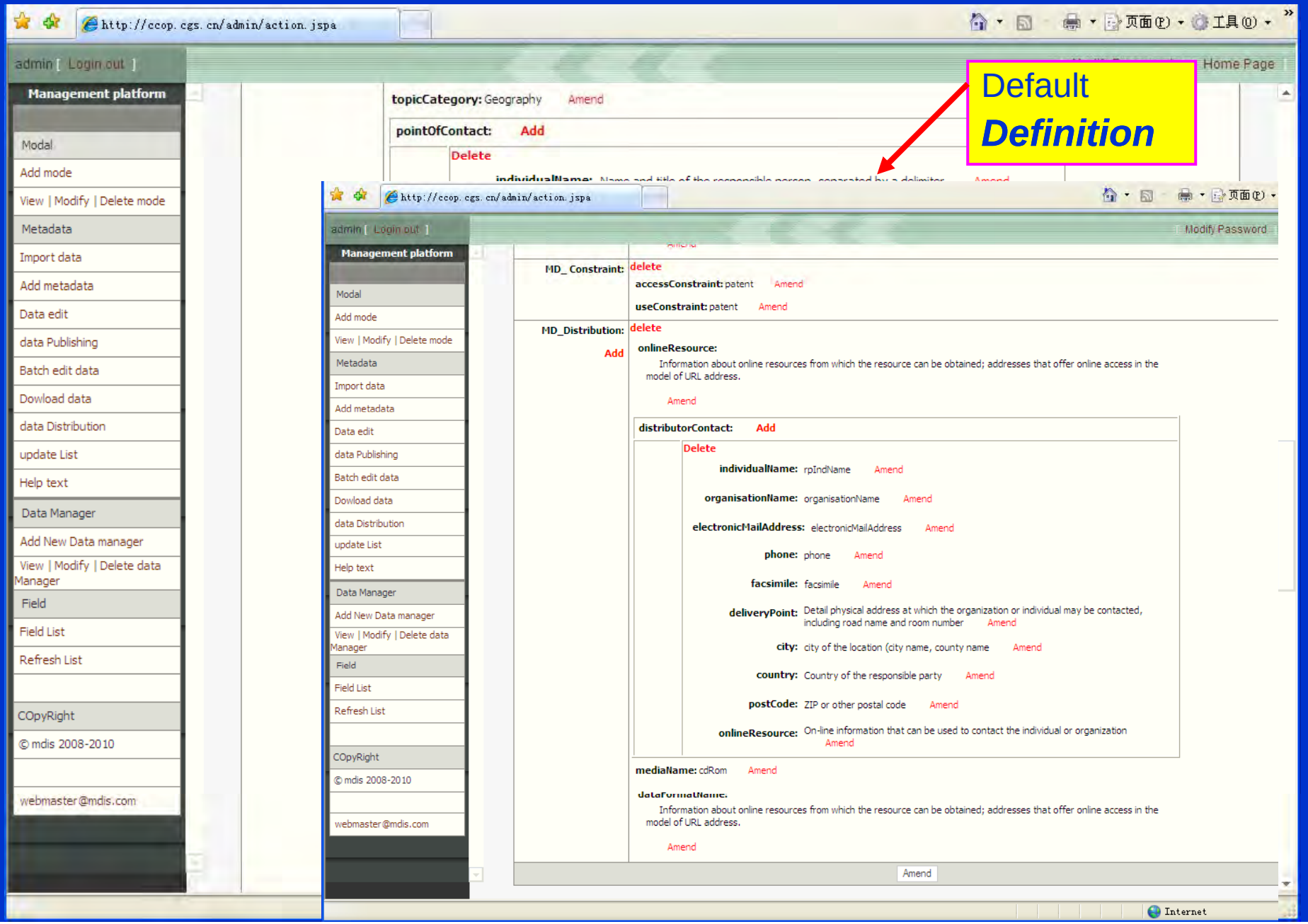
Name:

*Is* ***CCOP MDIS*** *okay ?*

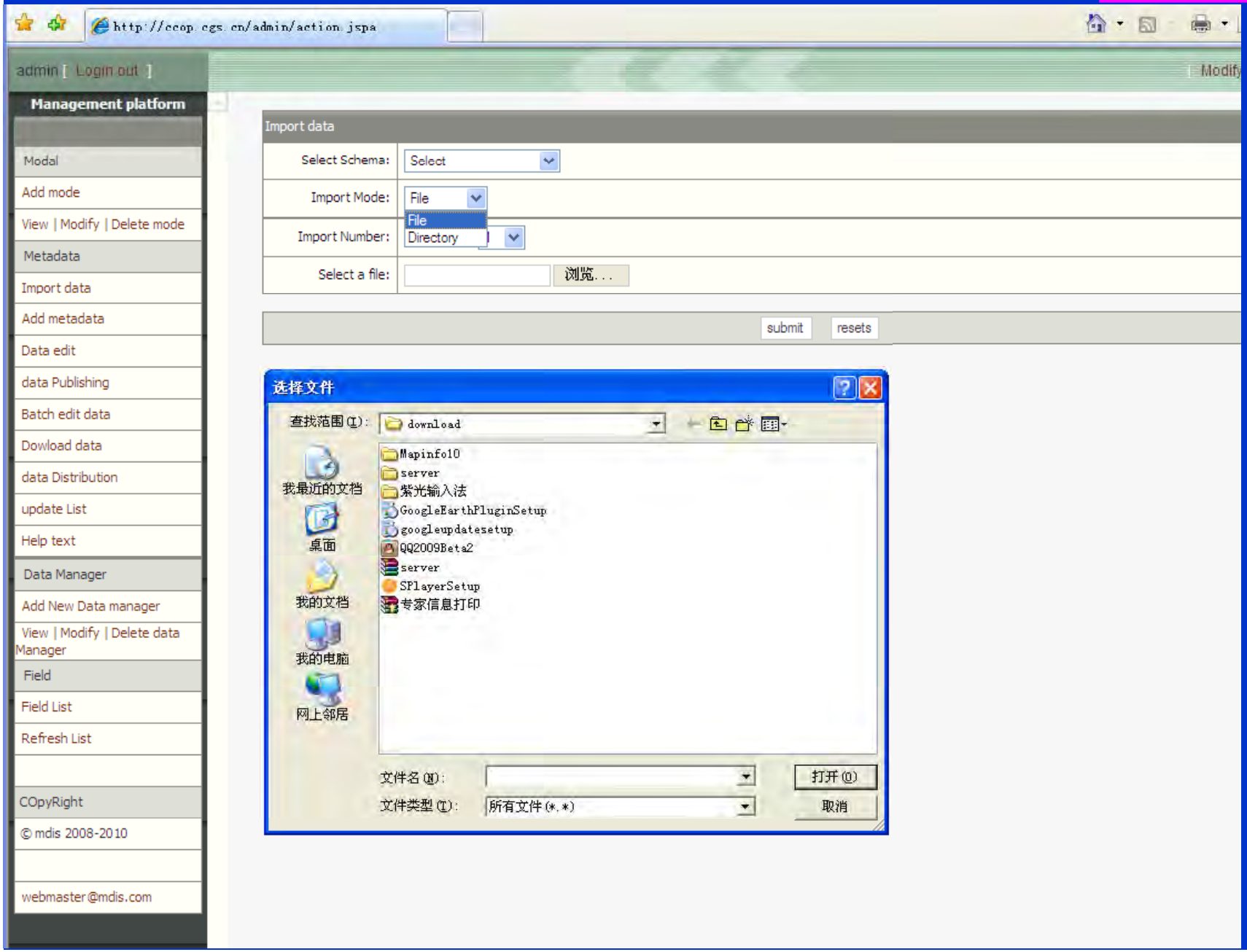
*_* ***MetaData Information System***



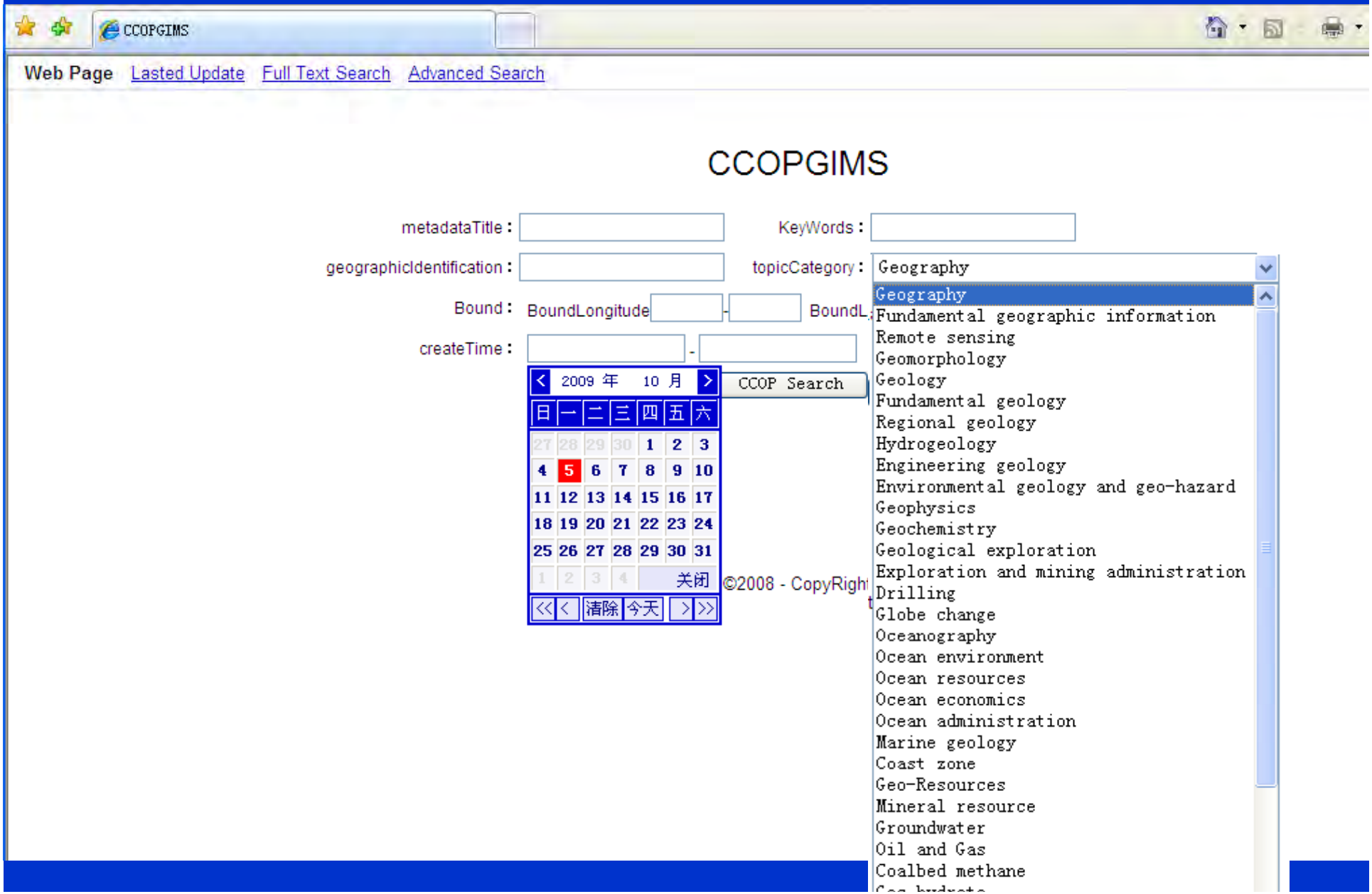

http://ccop.cgs.cn/admin/action.jspa
admin [ Login out ]
Modify Password | Home Page
Management platform
Modal
Add mode
View | Modify | Delete mode
Metadata
Import data
Add metadata
Data edit
data Publishing
Batch edit data
Dowload data
data Distribution
update List
Help text
Data Manager
Add New Data manager
View | Modify | Delete data Manager
Field
Field List
Refresh List
COpyRight
© mdis 2008-2010
webmaster@mdis.com
Metadata Amend
metadataTitle: The first complete metadata Amend
dataStamp: 20090819 Amend
ResponsibleParty: delete
Add
individualName:
Name and title of the responsible person, separated by a delimiter
Amend
organisationName:
Name and title of the responsible person, separated by a delimiter
Amend
electronicMailAddress:
Public address of the electronic mailbox of the responsible organization or individual
Amend
phone:
cntPhone
Amend
facsimile:
Amend
deliveryPoint:
Detail physical address at which the organization or individual may be contacted, including road name and room number
Amend
city:
jinan
Amend
country:
america
Amend
postCode:
完成
Internet
100%


http://ccop.cgs.cn/admin/action.jspa
admin [ Login out ]
Management platform
Modal
Add mode
View | Modify | Delete mode
Metadata
Import data
Add metadata
Data edit
data Publishing
Batch edit data
Dowload data
data Distribution
update List
Help text
Data Manager
Add New Data manager
View | Modify | Delete data Manager
Field
Field List
Refresh List
COpyRight
© mdis 2008-2010
webmaster@mdis.com
Home Page
topicCategory: Geography Amend
pointOfContact: Add
Delete
Default
Definition
Modify Password
MD_ Constraint: delete
accessConstraint: patent Amend
useConstraint: patent Amend
MD_Distribution: delete
Add
onlineResource:
Information about online resources from which the resource can be obtained; addresses that offer online access in the model of URL address.
Amend
distributorContact: Add
Delete
individualName: rpIndName Amend
organisationName: organisationName Amend
electronicMailAddress: electronicMailAddress Amend
phone: phone Amend
facsimile: facsimile Amend
deliveryPoint: Detail physical address at which the organization or individual may be contacted, including road name and room number Amend
city: city of the location (city name, county name Amend
country: Country of the responsible party Amend
postCode: ZIP or other postal code Amend
onlineResource: On-line information that can be used to contact the individual or organization Amend
mediaName: cdRom Amend
Amend
Internet

# Metadata
# Import / upload



# Metadata Release & Search



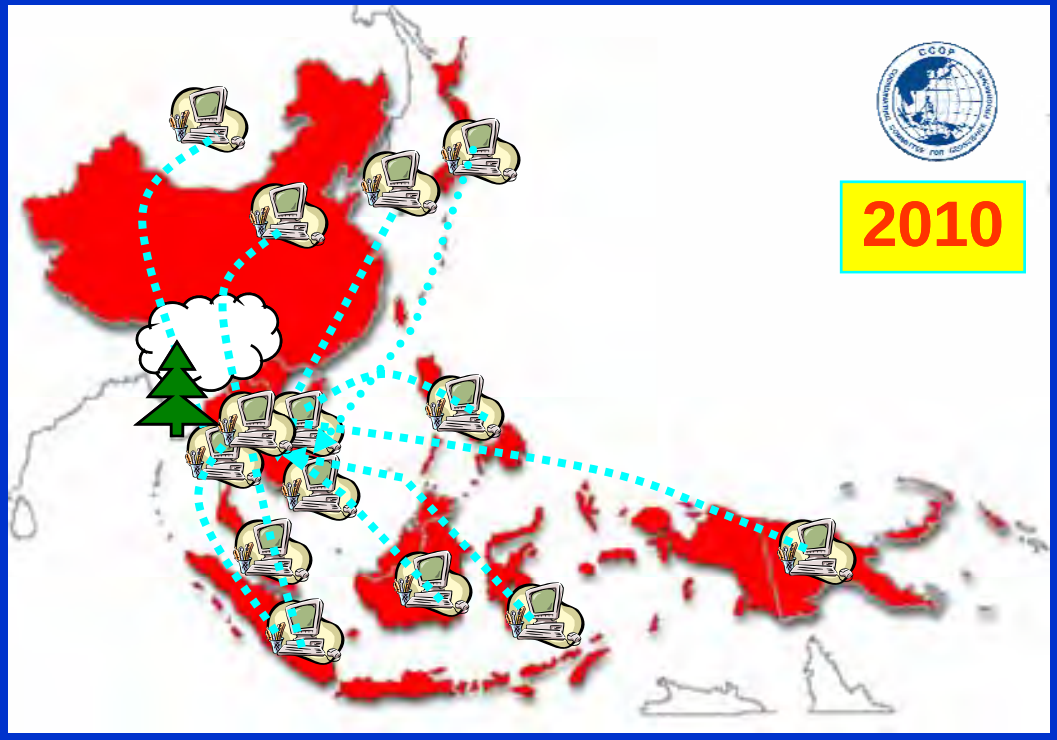
# Next step

1 **The Web based software *CCOP MDIS* will be deployed at CCOP T/S server next month for trial use.**

2 **Hand on training workshop early next year.**

3 **Launch** Web-based application

**Online metadata** collection and release management at CCOP T/S linked with member countries via Internet.



# 3 Benefits

- Geoinformation release nationwide and worldwide via internet

Metadata database for detail geoinformation release

Data title

Abstract

Quality

Constrains

Contact

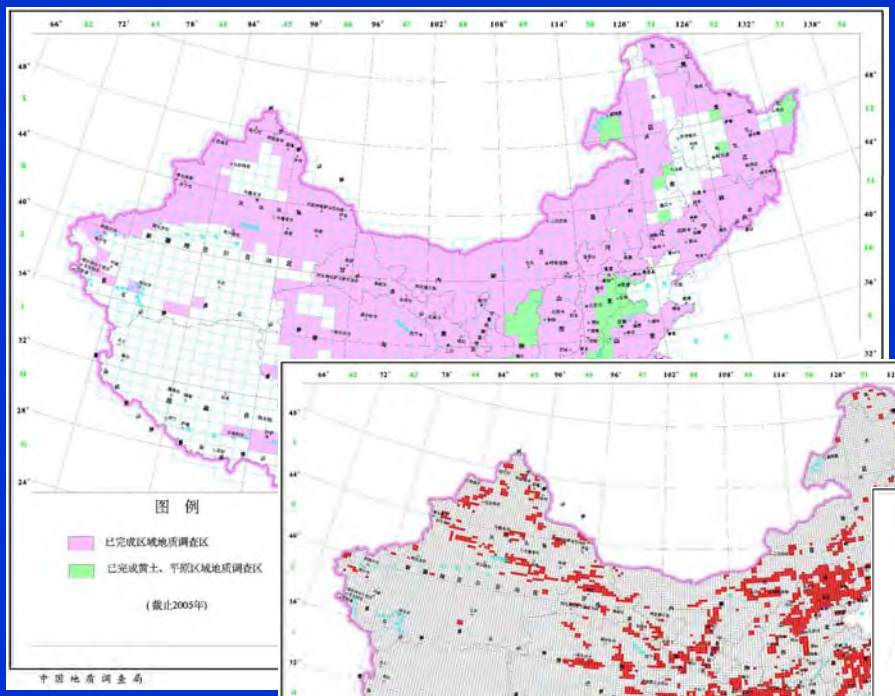
……

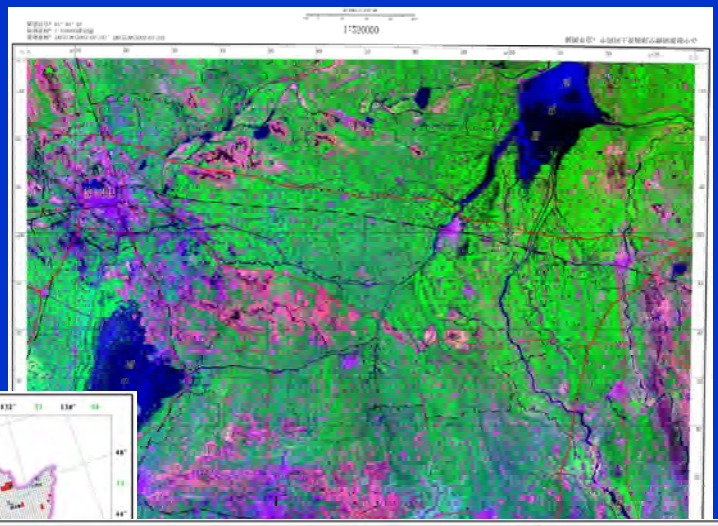
Tells *What, Who, Where, When, Why and How……*

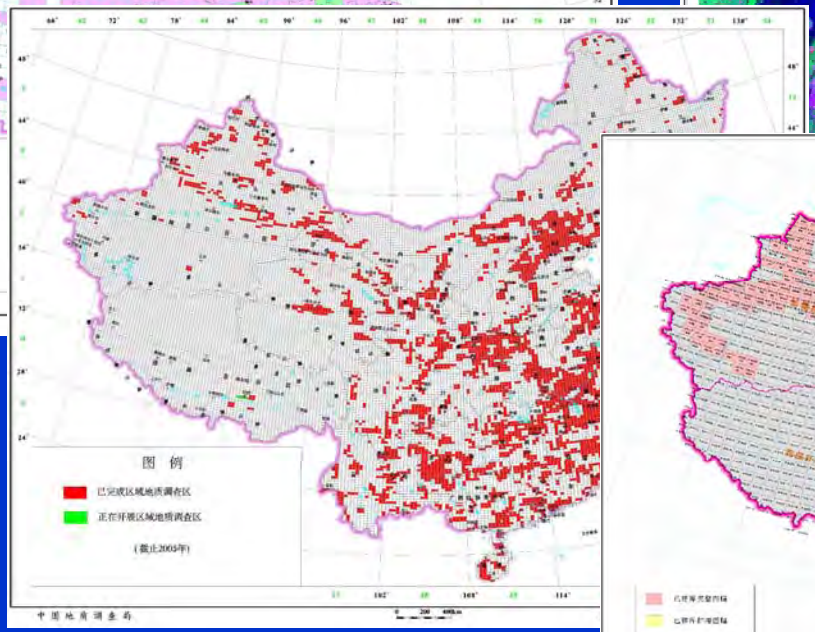
# ⊙ National benefit China for example

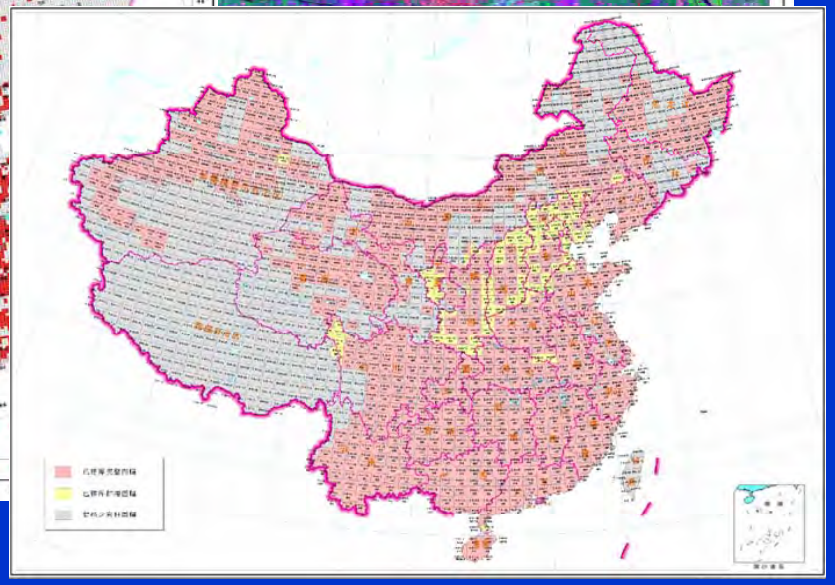
**1:200,000 regional geological map metadata**

**Remote sensing image metadata**





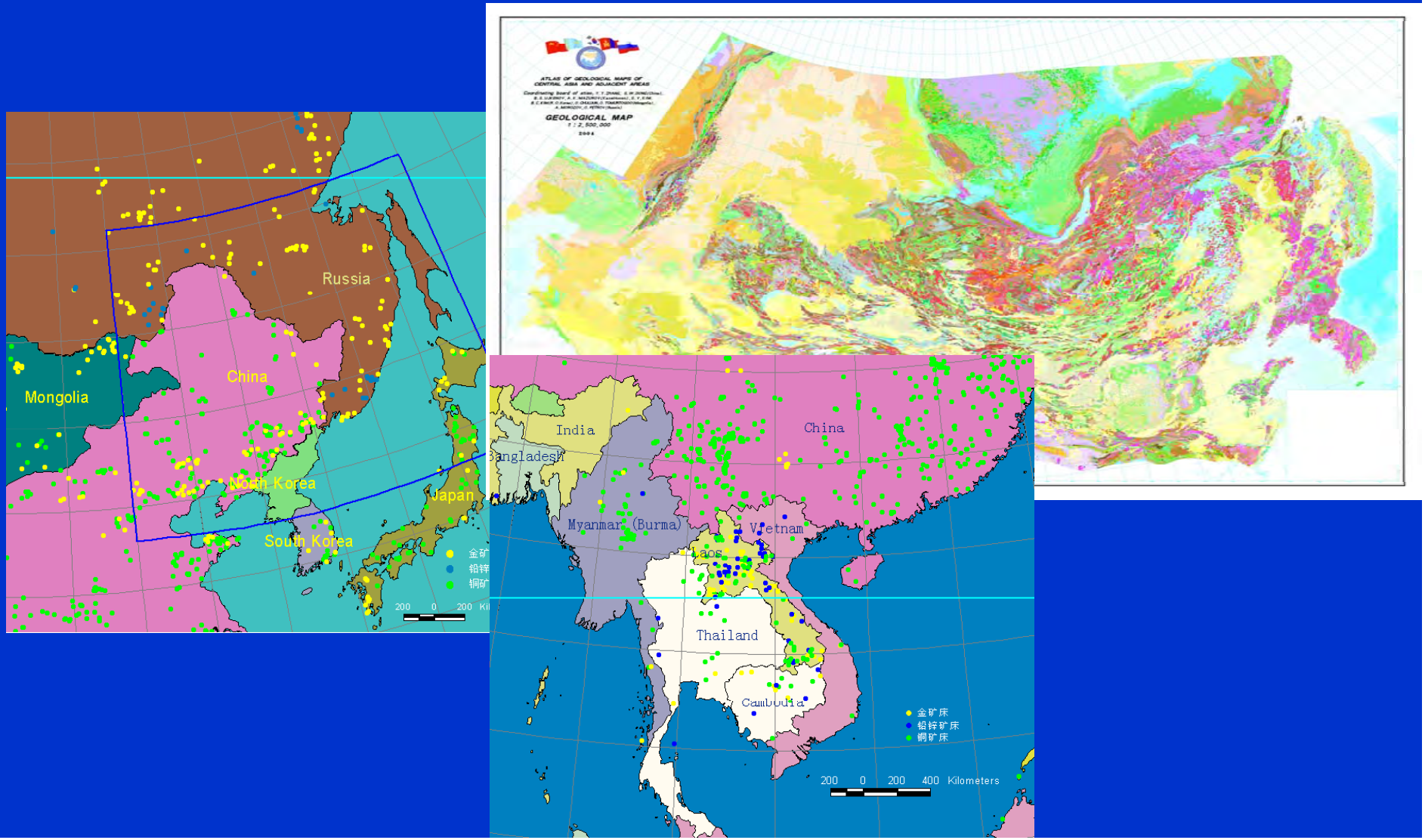
1:50,000 regional geological map metadata

1:200,000 hydro-geological map metadata

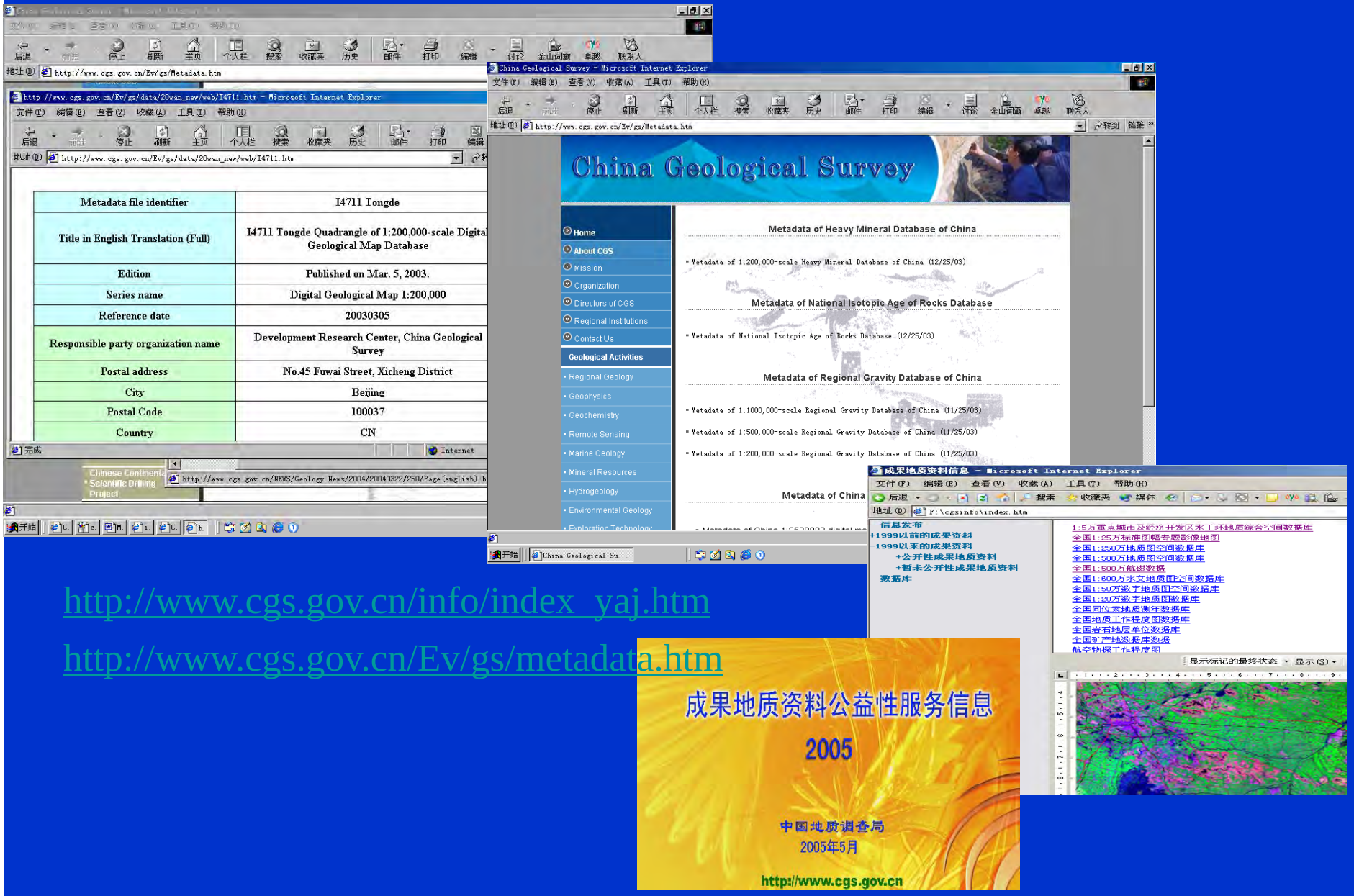
# International cooperation projects

## Asia geological map

## Globe mineral assessment



# CGS adopt CCOP 28-item metadata standard as core metadata standard to release data Since 2003 for geological maps.



| Metadata file identifier | I4711 Tongde |
|---|---|
| Title in English Translation (Full) | I4711 Tongde Quadrangle of 1:200,000-scale Digita Geological Map Database |
| Edition | Published on Mar. 5, 2003. |
| Series name | Digital Geological Map 1:200,000 |
| Reference date | 20030305 |
| Responsible party organization name | Development Research Center, China Geological Survey |
| Postal address | No.45 Fuwai Street, Xicheng District |
| City | Beijing |
| Postal Code | 100037 |
| Country | CN |

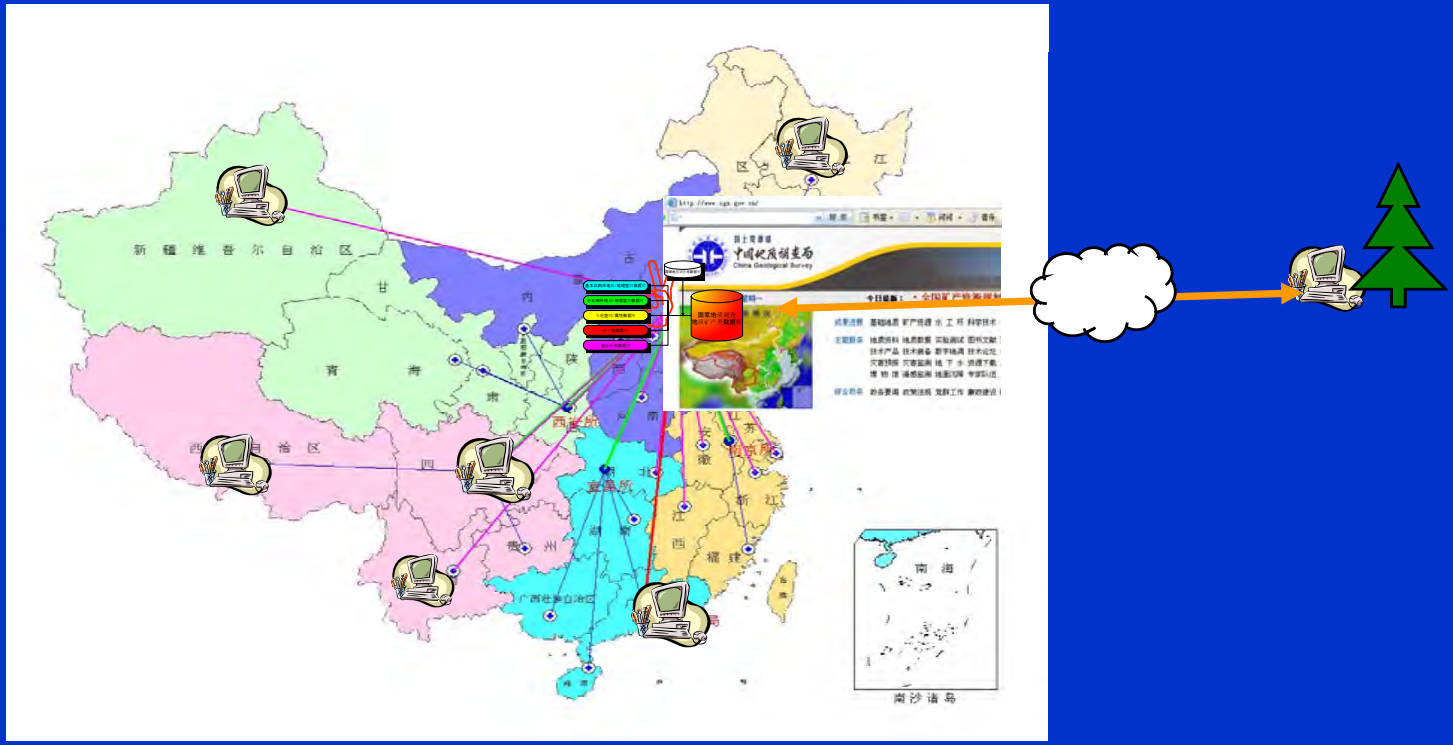


http://www.cgs.gov.cn/info/index_yaj.htm

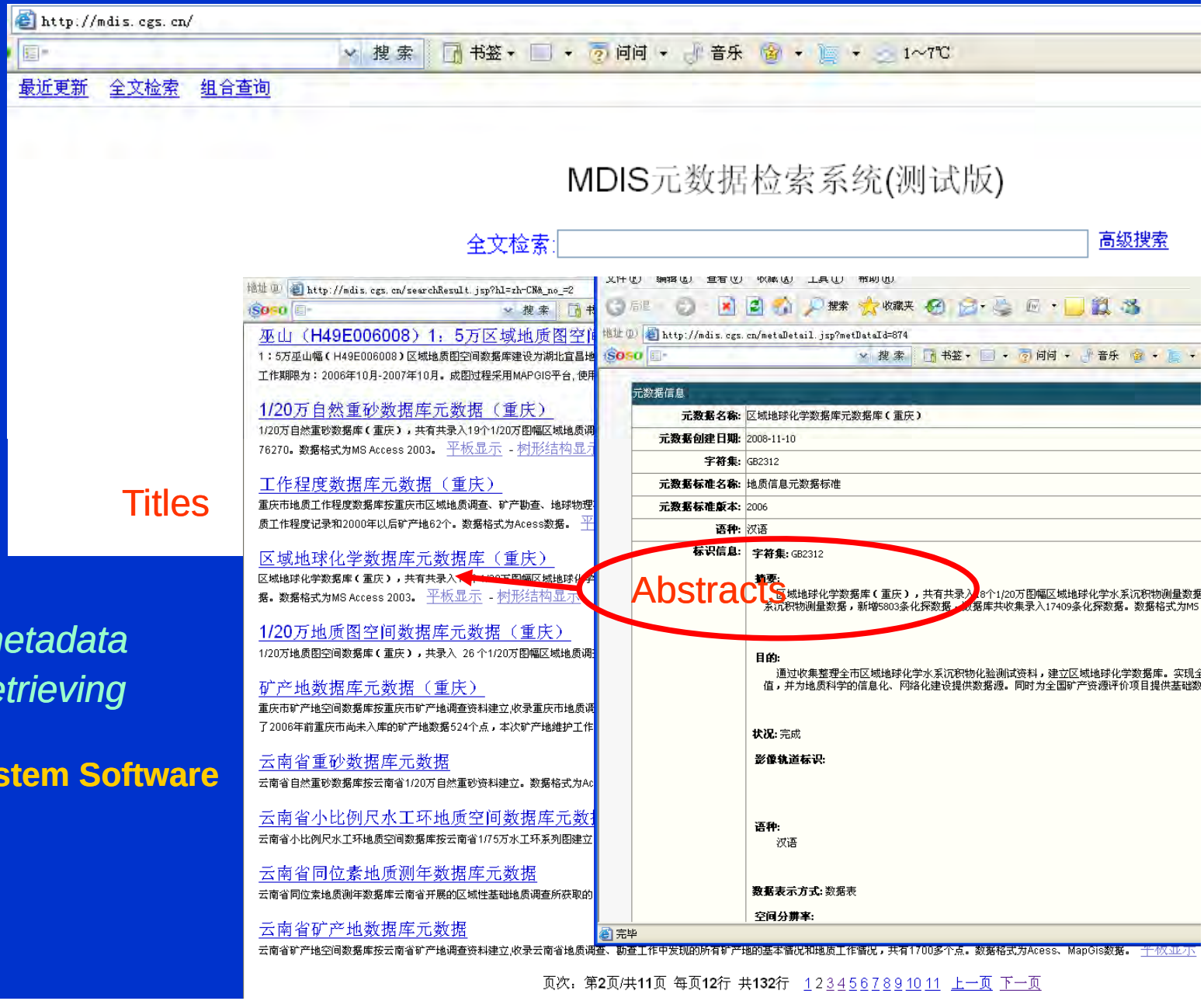
http://www.cgs.gov.cn/Ev/gs/metadata.htm

Now, metadata collection & release nation wide via internet with metadata software system covering a whole range of geological work in CGS.

Annually, more than 5,000 metadata submit to CGS
from provincial works, CGS projects both domestic and abroad, …

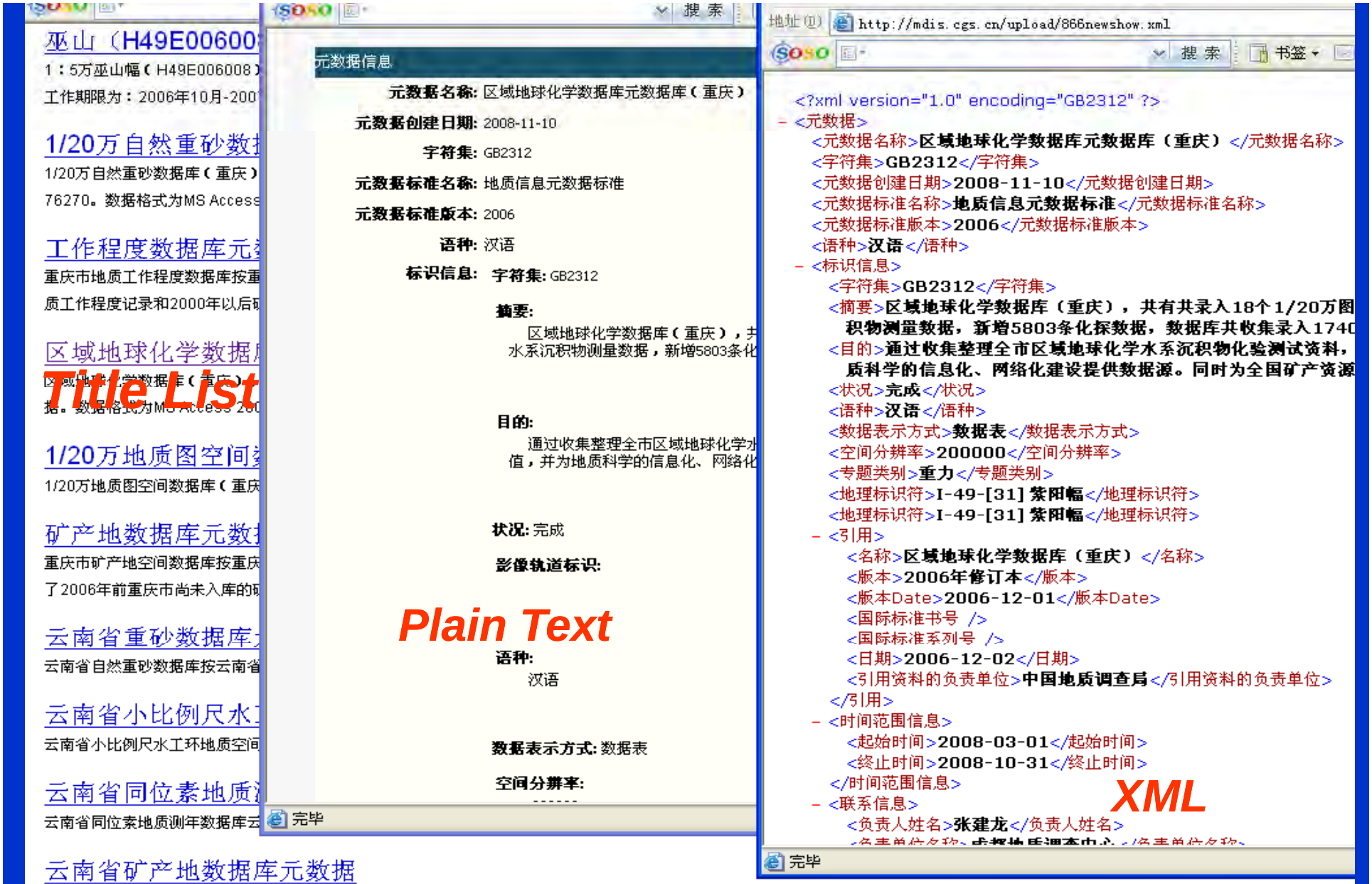


# Metadata management in CGS




*metadata retrieving*

**Metadata System Software**


Title List
Plain Text
XML
元数据信息
元数据名称: 区域地球化学数据库元数据库（重庆）
元数据创建日期: 2008-11-10
字符集: GB2312
元数据标准名称: 地质信息元数据标准
元数据标准版本: 2006
语种: 汉语
标识信息: 字符集: GB2312
摘要:
目的:
状况: 完成
影像轨道标识:
语种:
汉语
数据表示方式: 数据表
空间分辨率:
完毕
http://mdis.cgs.cn/upload/866newshow.xml
<?xml version="1.0" encoding="GB2312" ?>
<元数据>
<元数据名称>区域地球化学数据库元数据库（重庆）</元数据名称>
<字符集>GB2312</字符集>
<元数据创建日期>2008-11-10</元数据创建日期>
<元数据标准名称>地质信息元数据标准</元数据标准名称>
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<标识信息>
<字符集>GB2312</字符集>
<摘要>区域地球化学数据库（重庆），共有共录入18个1/20万图
积物测量数据，新增5803条化探数据，数据库共收集录入174
<目的>通过收集整理全市区域地球化学水系沉积物化验测试资料，
质科学的信息化、网络化建设提供数据源。同时为全国矿产资源
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<引用>
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<版本>2006年修订本</版本>
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<国际标准书号 />
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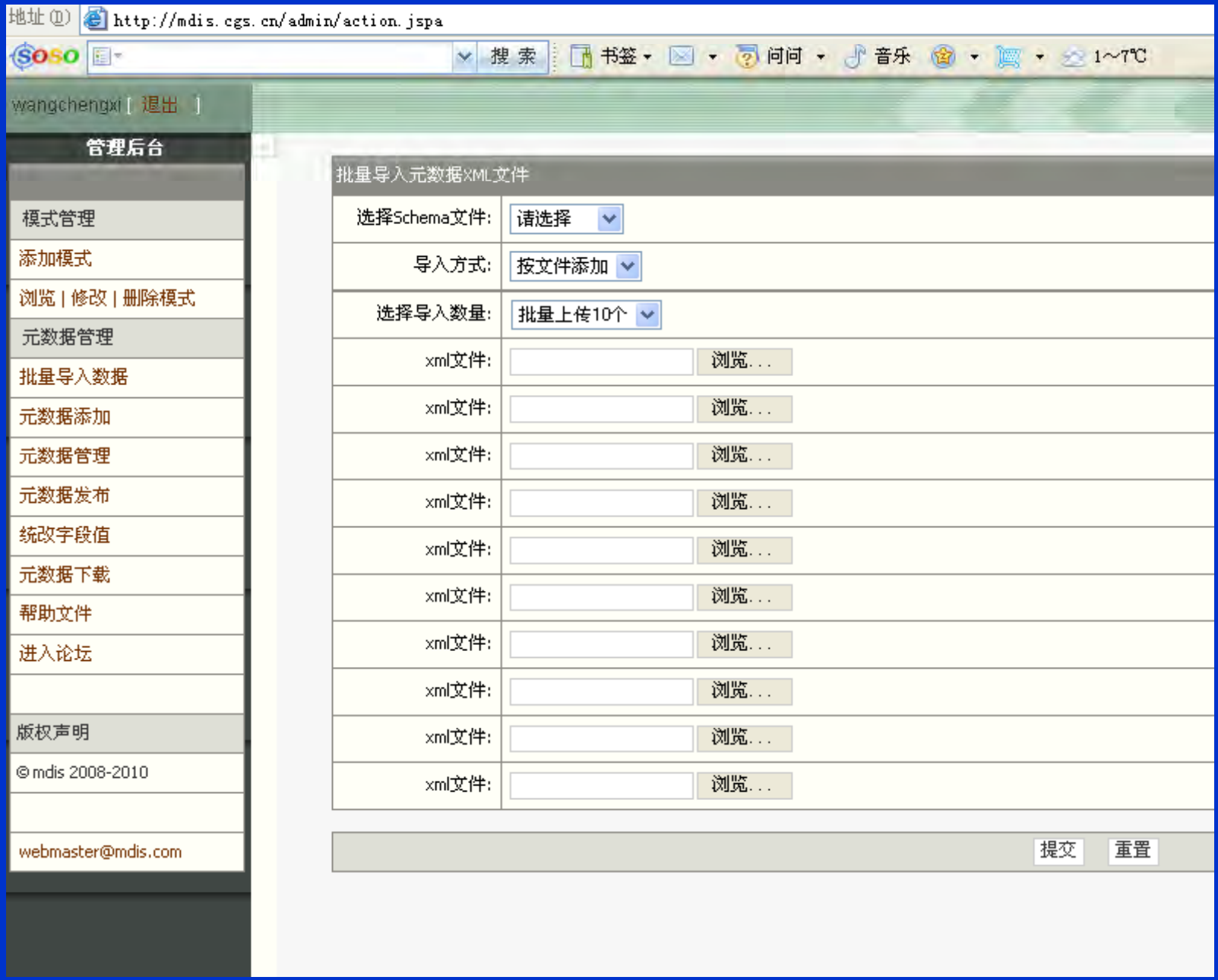
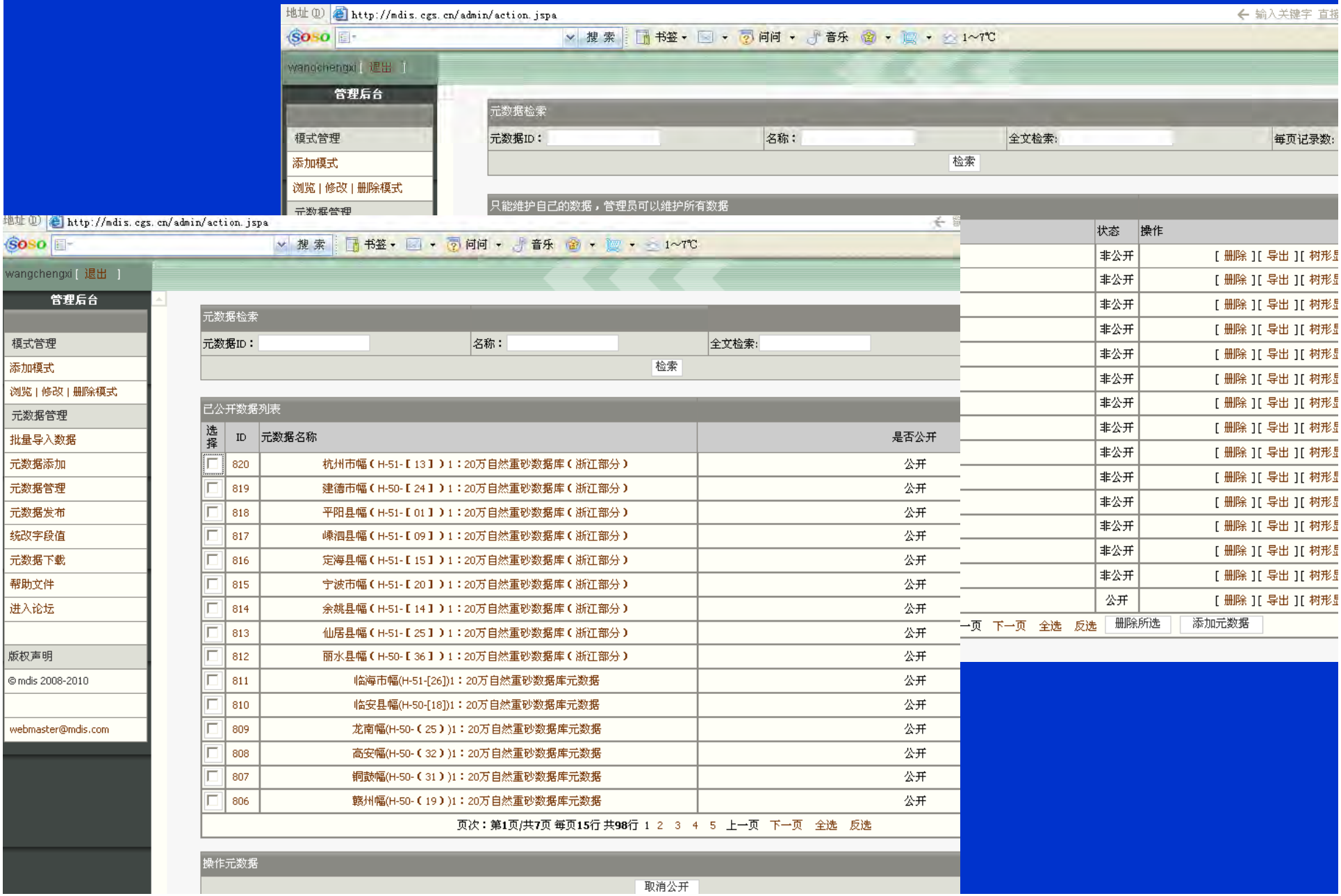
<终止时间>2008-10-31</终止时间>
</时间范围信息>
<联系信息>
<负责人姓名>张建龙</负责人姓名>
完毕
云南省矿产地数据库元数据
云南省矿产地空间数据库按云南省矿产地调查资料建立,收录云南省地质调查、勘查工作中发现的所有矿产地的基本情况和地质工作情况，共有1700多个点。数据格式为Acess、MapGis数据。
页次：第2页/共11页 每页12行 共132行 1 2 3 4 5 6 7 8 9 10 11 上一页 下一页
©2008 - 版权所有

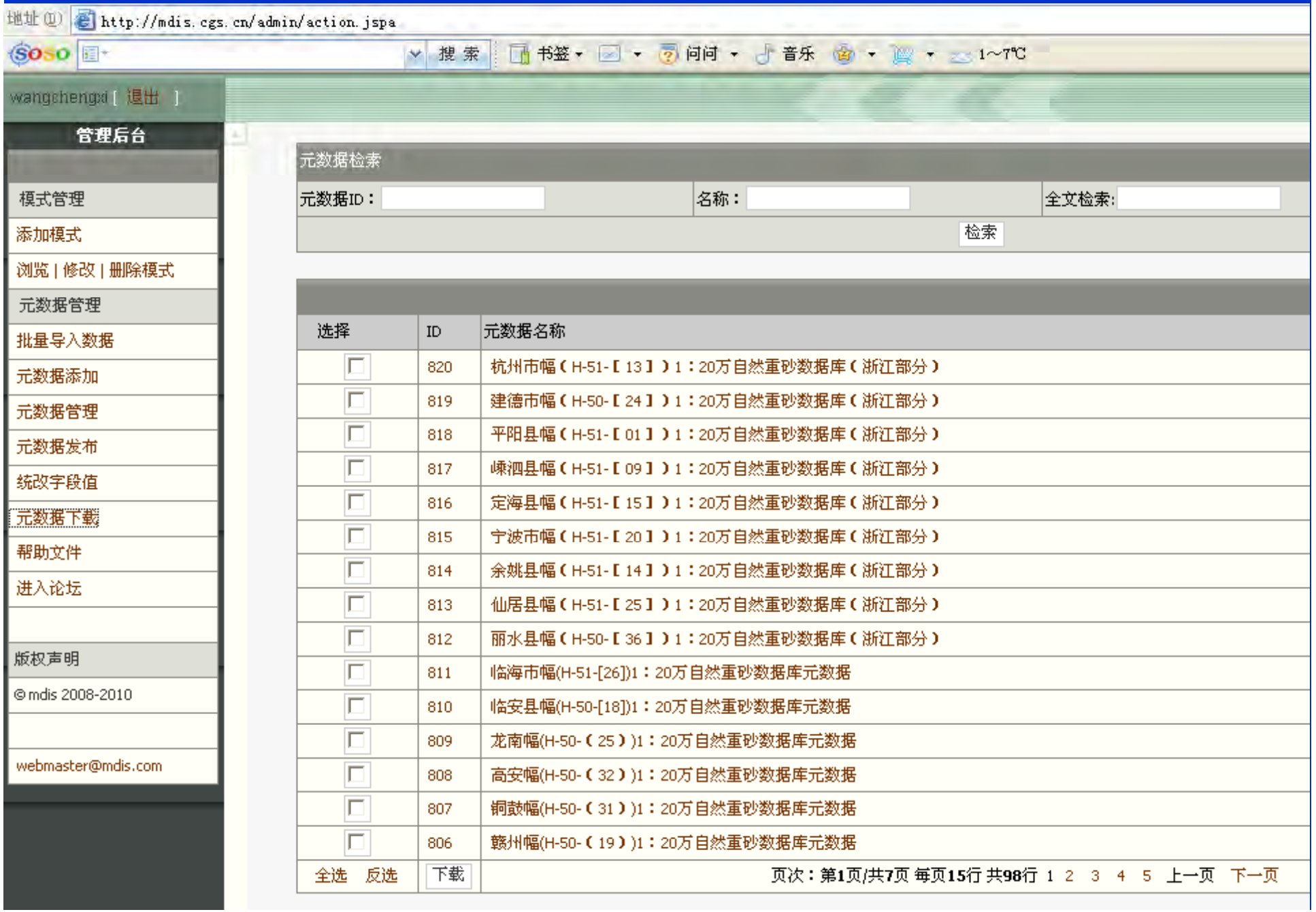
# Metadata uploading via Internet



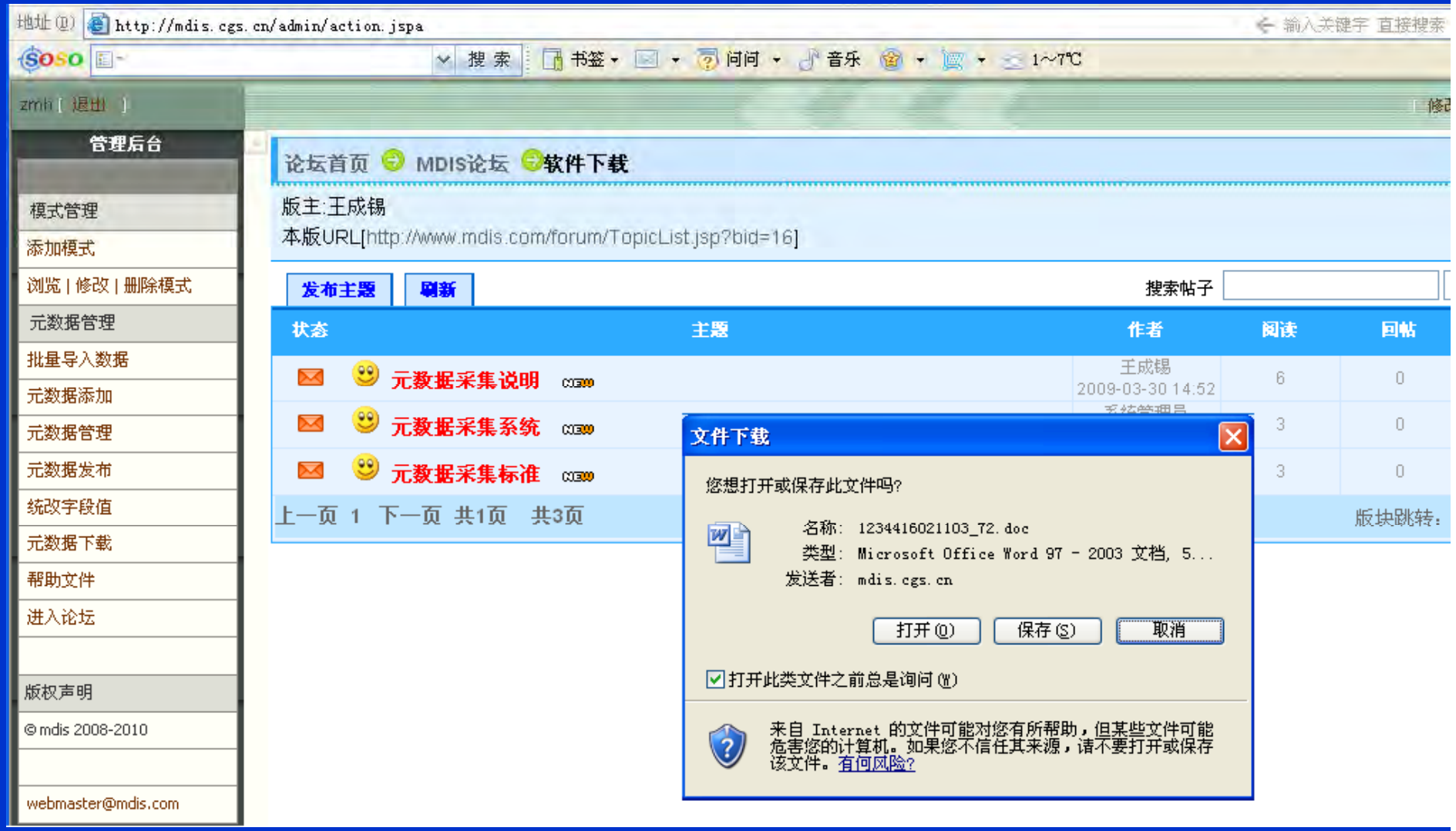
# Metadata releasing management



# Metadata download

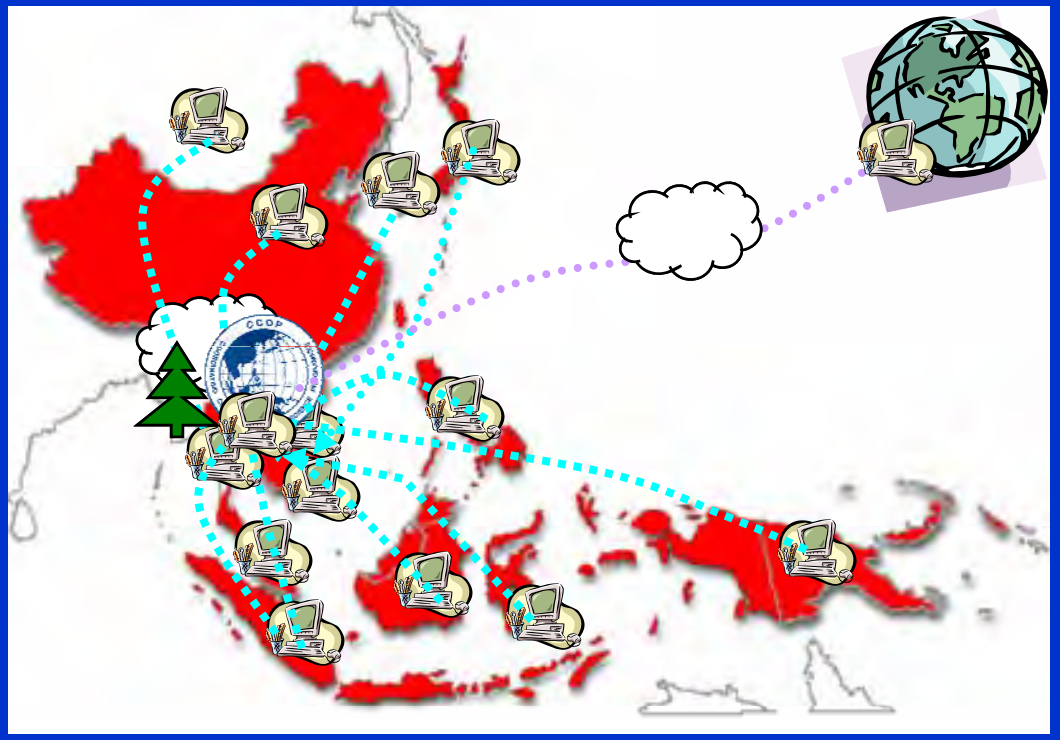


# Metadata collection software download for workstation



# ※ International benefit

**Geoinformation sharing amongst *CCOP Member countries*.**
**CCOP Geoinformation sharing world wide…**



## Way forward for CCOP metadata porject

- *Launching Web-based application next March at the end of Phase II project*
- *Hand on training on request to the member country by the CGS project group **with CGS support.***

- *Web based metadata software system maintainence by the CGS group staff, and necessary extension making to the standard to meet the need of any other CCOP projects by the working group…*

  *and software upgrading and training which will be continuly supported by the CGS group…*

# *THANK YOU !*

Dr. Zhang Minghua
China Geological Survey
zminghua@mail.cgs.gov.cn

# CGS issued and released *CGS Geinformation Metadata Standard (DD2006-05)* in 2006

For geoinformation collection and release Since 2005.

With coverage of

geological mapping, minerals, groundwater, geo-hazard, oil and gas, coal, geothermal, coastal zone, geophysics, geochemistry, drilling, geo-archives, etc.

8 entities

88 elements

(46 mandatory, 19 conditional)

1 annex.

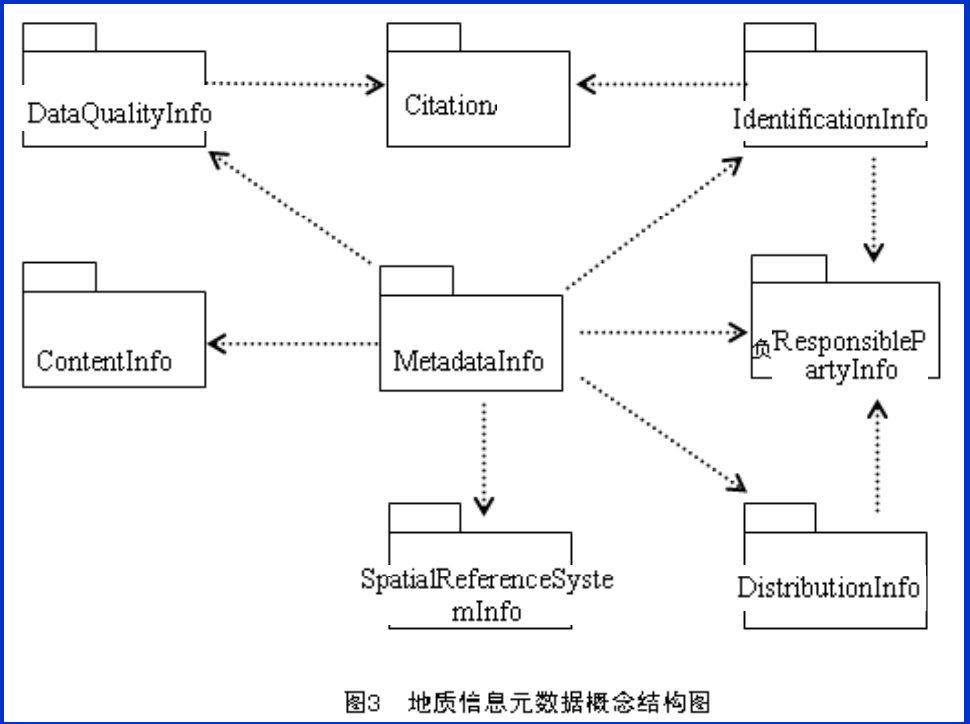
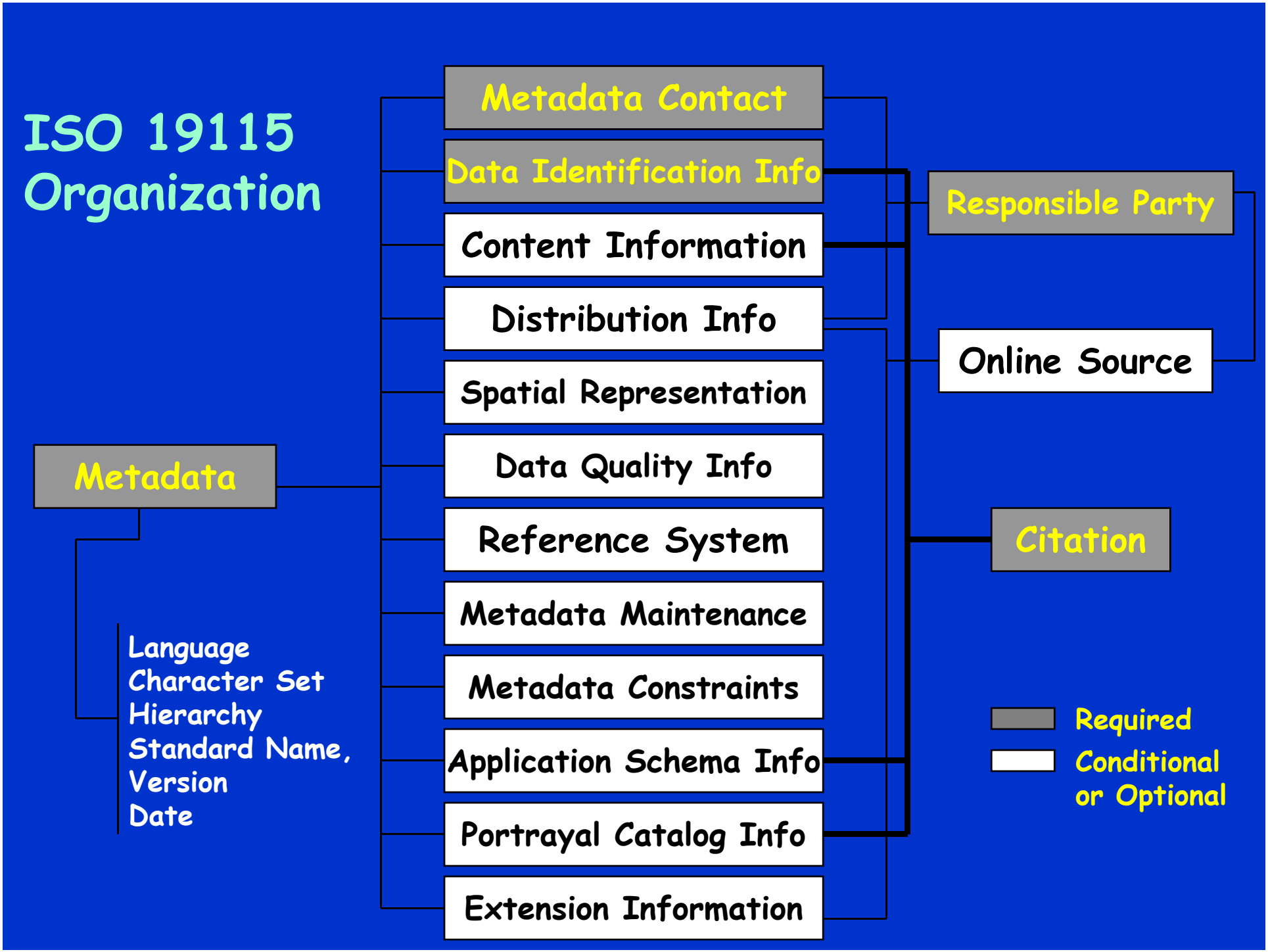



图3 地质信息元数据概念结构图

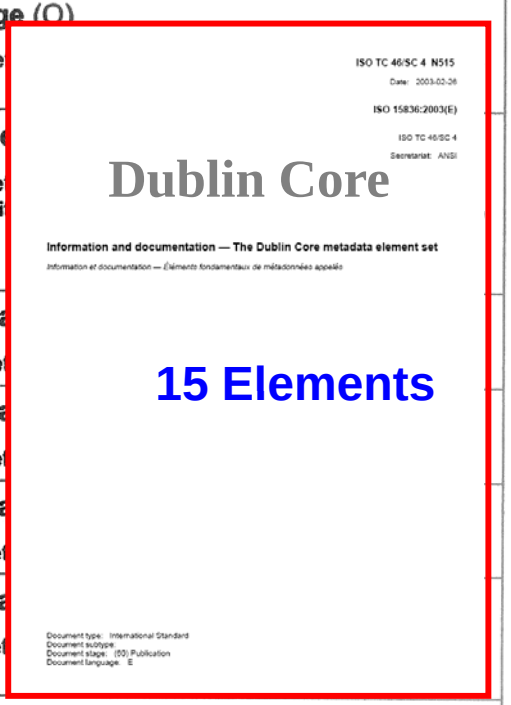
# ISO 19115 Organization



- MD_Identification (M)
- MD_Constraints
- DQ_DataQuality
- MD_MaintenanceInformation
- MD_SpatialRepresentation
- MD_ReferenceSystem
- MD_ContentInformation
- MD_PortrayalCatalogueReference
- MD_Distribution
- MD_MetadataExtensionInformation
- MD_ApplicationSchemaInformation

**Table 3 — Core metadata for geographic datasets**

| | |
|---|---|
| **Dataset title** (M)<br>(MD_Metadata > MD_DataIdentification.citation > CI_Citation.title) | **Spatial representation type** (O)<br>(MD_Metadata > MD_DataIdentification.spatialRepresentationType) |
| **Dataset reference date** (M)<br>(MD_Metadata > MD_DataIdentification.citation > CI_Citation.date) | **Reference system** (O)<br>(MD_Metadata > MD_ReferenceSystem) |
| **Dataset responsible party** (O)<br>(MD_Metadata > MD_DataIdentification.pointOfContact > CI_ResponsibleParty) | **Lineage** (O)<br>(MD_Me |
| **Geographic location of the dataset (by four coordinates or by geographic identifier)** (C)<br>(MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_GeographicExtent > EX_GeographicBoundingBox or EX_GeographicDescription) | **On-line**<br>(MD_Me<br>MD_Digi |
| **Dataset language** (M)<br>(MD_Metadata > MD_DataIdentification.language) | **Metada**<br>(MD_Me |
| **Dataset character set** (C)<br>(MD_Metadata > MD_DataIdentification.characterSet) | **Metada**<br>(MD_Me |
| **Dataset topic category** (M)<br>(MD_Metadata > MD_DataIdentification.topicCategory) | **Metada**<br>(MD_Me |
| **Spatial resolution of the dataset** (O)<br>(MD_Metadata > MD_DataIdentification.spatialResolution > MD_Resolution.equivalentScale or MD_Resolution.distance) | **Metada**<br>(MD_Me |
| **Abstract describing the dataset** (M)<br>(MD_Metadata > MD_DataIdentification.abstract) | **Metadata character set** (C)<br>(MD_Metadata.characterSet) |
| **Distribution format** (O)<br>(MD_Metadata > MD_Distribution > MD_Format.name and MD_Format.version) | **Metadata point of contact** (M)<br>(MD_Metadata.contact > CI_ResponsibleParty) |
| **Additional extent information for the dataset (vertical and temporal)** (O)<br>(MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_TemporalExtent or EX_VerticalExtent) | **Metadata date stamp** (M)<br>(MD_Metadata.dateStamp) |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Date: 2003-02-26
ISO 15836:2003(E)
ISO TC 46/SC 4
Secretariat: ANSI
Dublin Core
Information and documentation — The Dublin Core metadata element set
Information et documentation — Éléments fondamentaux de métadonnées appelés
Document type: International Standard
Document subtype:
Document stage: (50) Publication
Document language: E

**15 Elements**