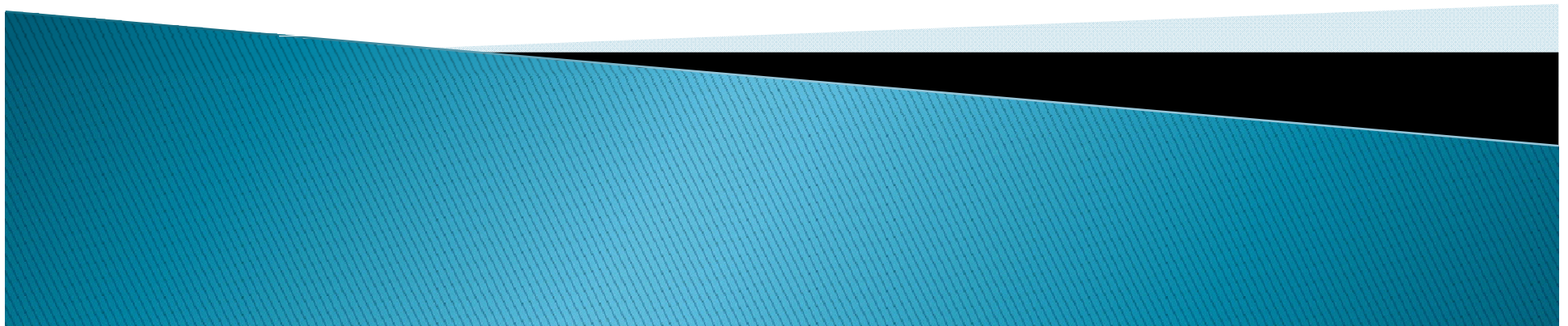


Data Catalogue of WMO Information System (WIS)

Yuka Fukui

Japan Meteorological Agency



1. Outline of WIS



WIS: ICT backbone of WMO (World Meteorological Organization)

Overarching Information System of



All WMO & Related Programmes

Two-part strategy

Data Catalogue

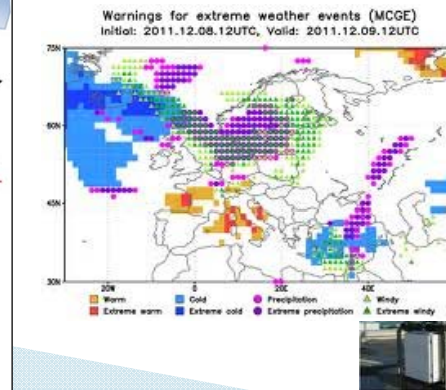
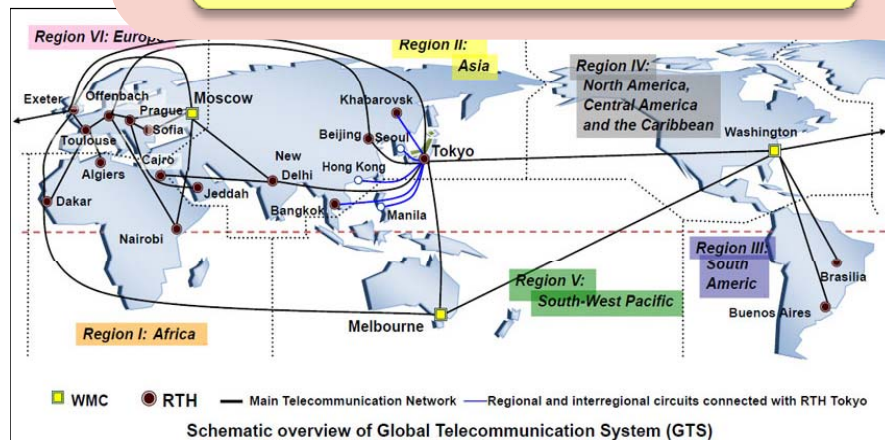
Global Data

Traditional GTS

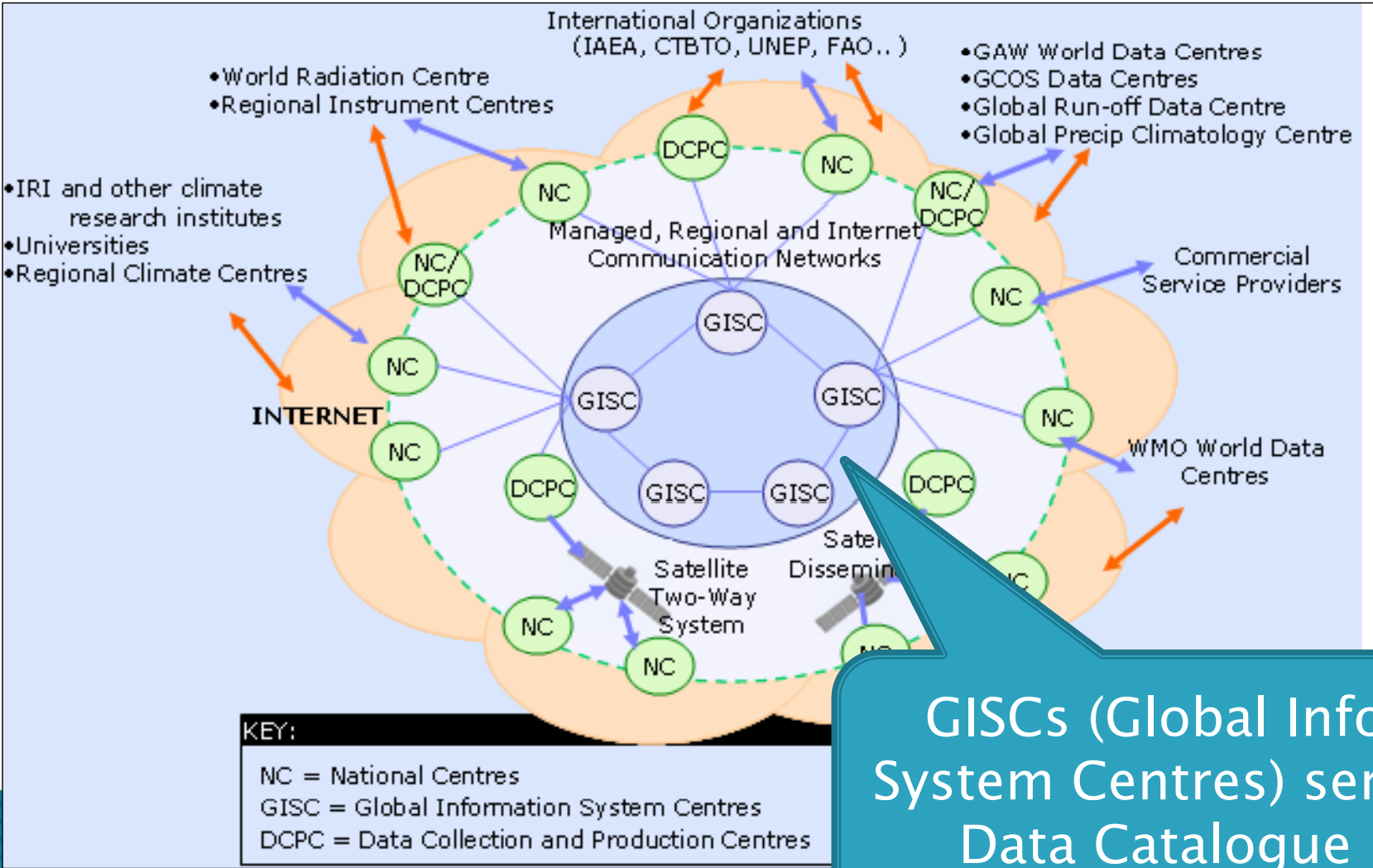
Extension to Web

Specialized Data

Programme Specific
Info Systems



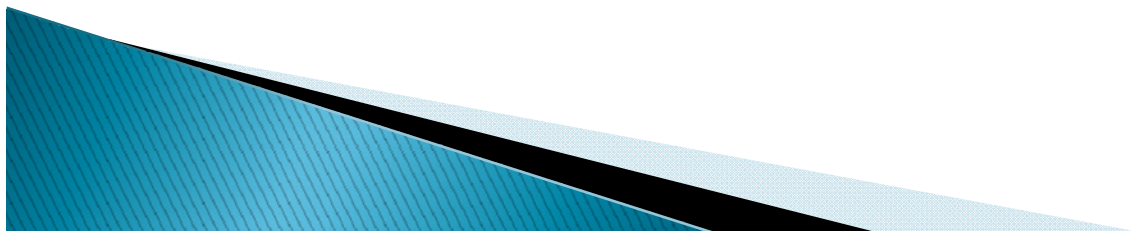
Reorganising structure



GISCs (Global Info System Centres) serve Data Catalogue

Current Designated GISCs

1. Beijing, China
2. Offenbach, Germany
3. Tokyo, Japan
4. Toulouse, France
5. Exeter, UK



2. Metadata Record Format



Based on ISO 19115

- ▶ Entire std too huge
 - About 400 elements
- ▶ ISO Core too small
 - 14 elements
- ▶ WMO developed own metadata profile

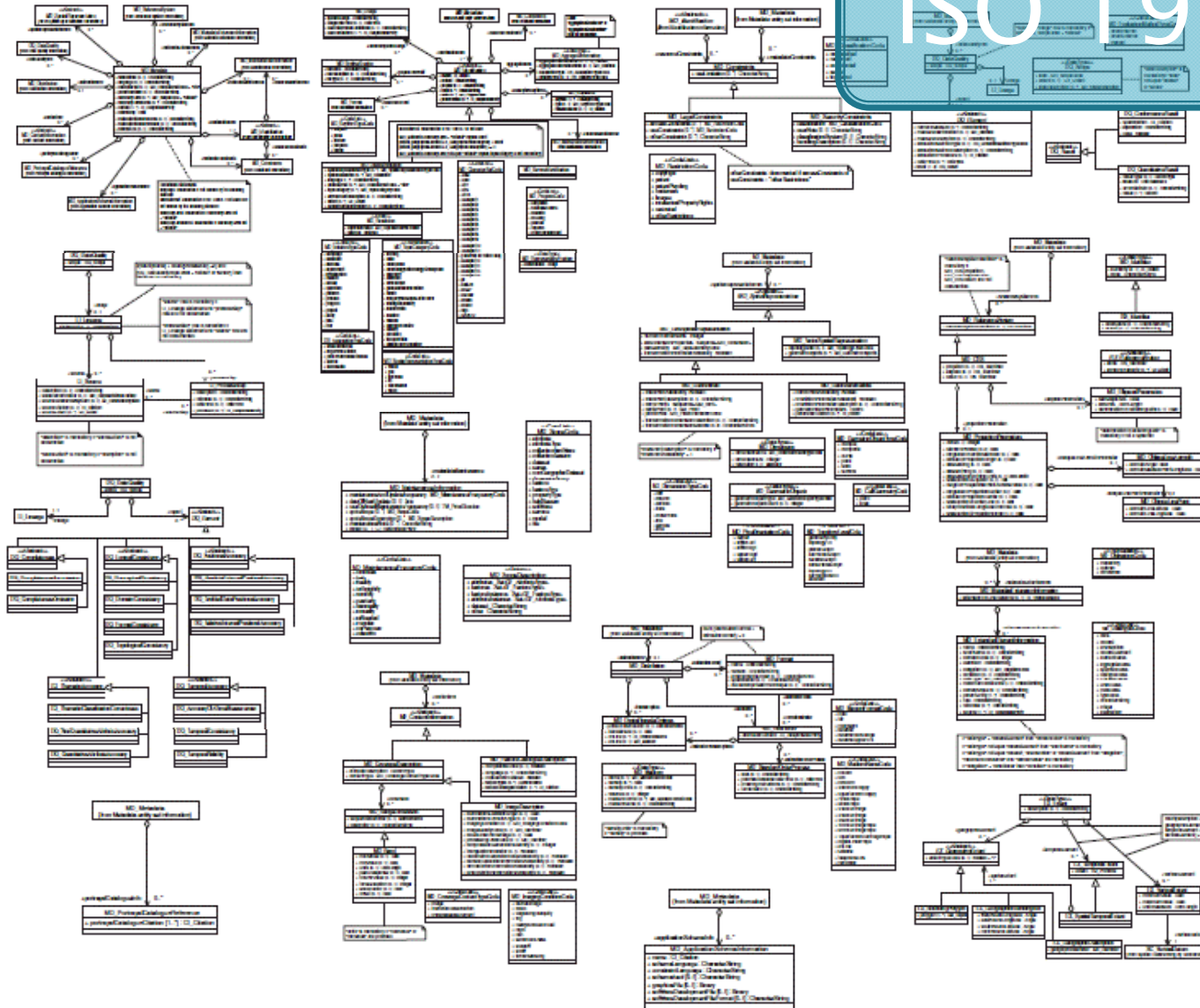
Comprehensive
Profile:
400+ elements

WMO Core
Profile v1.2:
40 mandatory

ISO Core
Profile: 14

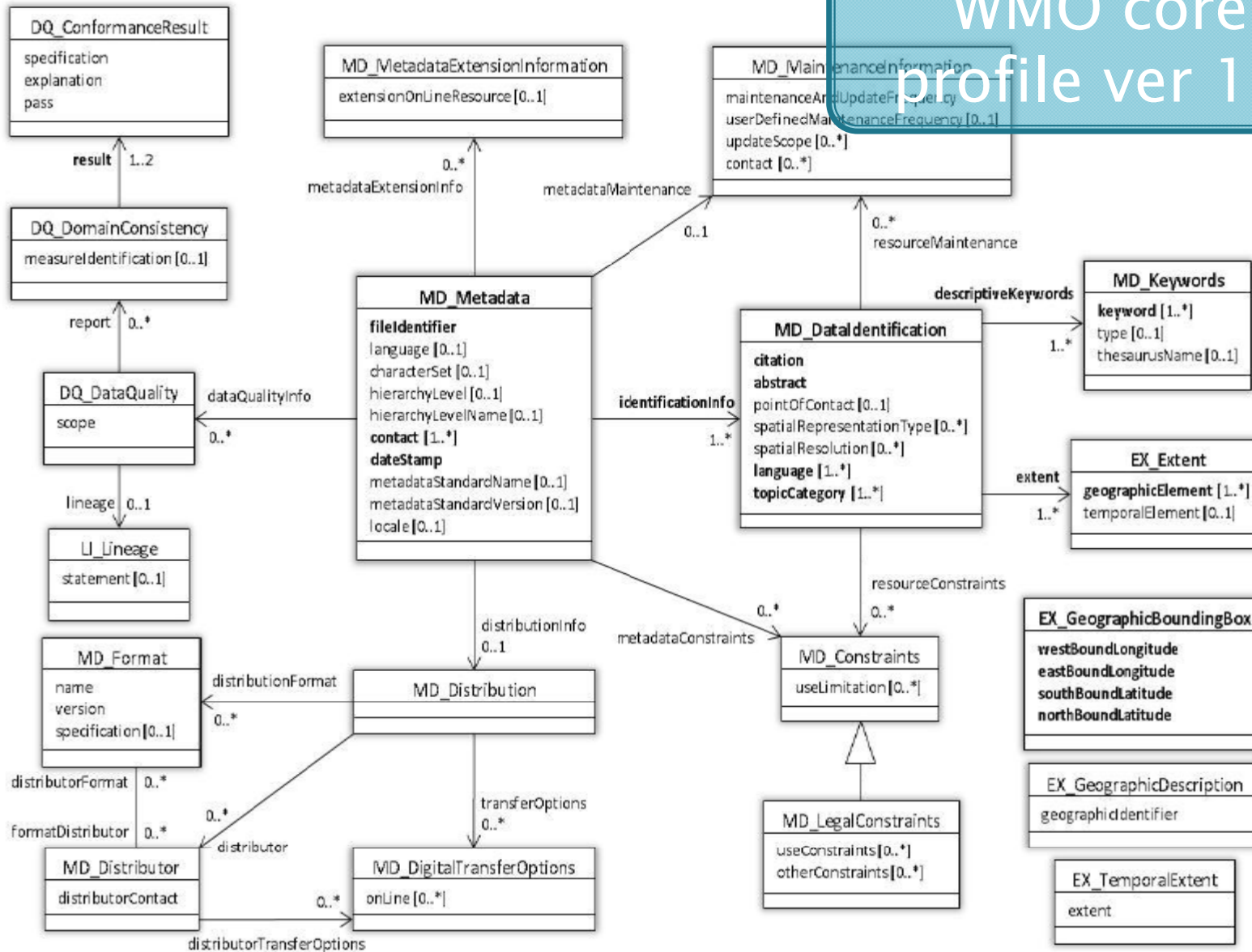
This huge is...

ISO 19115




... made this simple.

WMO core profile ver 1.2



Typical Elements

- ▶ Metadata contact
 - ▶ Dataset contact (center name, email, address)
 - ▶ Metadata date
 - ▶ Keywords (subject, theme, place)
 - ▶ Title, abstract
 - ▶ Bounding box
 - ▶ Dataset Time (archive range, revised date, expiration)
 - ▶ Update cycle & hours
 - ▶ Format
 - ▶ Dataset URL *or* GTS heading
 - ▶ Data policy category
- 

Assistance to create metadata

GISC Tokyo accepts:

- ▶ Tabular file
- ▶ Web input
- ▶ XML directly

	A	B	C	D	E	F	G	H	I	J	K	L
1	Region	RTH	Country	Centre	Date	Category	TTAAii	CCCC	CodeForm	TimeGrou	Content	Remarks
2		2 BANGKOK	LAO PEOP	VIENTIAN	22/07/201	E	CSLA01	VLIV	FM 71-XI	MONTHLY	48930 48938	48940 48
3		2 BANGKOK	LAO PEOP	VIENTIAN	8/8/2003	E	FPLA01	VLIV	PLAIN LAN	3		PUBLIC OF

Home About WIS Warning KML WMO format Metadata Help Desk News

Edit Metadata

You have authority to edit metadata of "WISTEST-JMA".

Metadata

* File Identifier:

Parent Identifier:

Hierarchy Level Name:

* DateStamp(yyyy-mm-ddThh:mm:ssZ):

Metadata Standard Name: WMO Core Metadata Profile on ISO 19115-2003

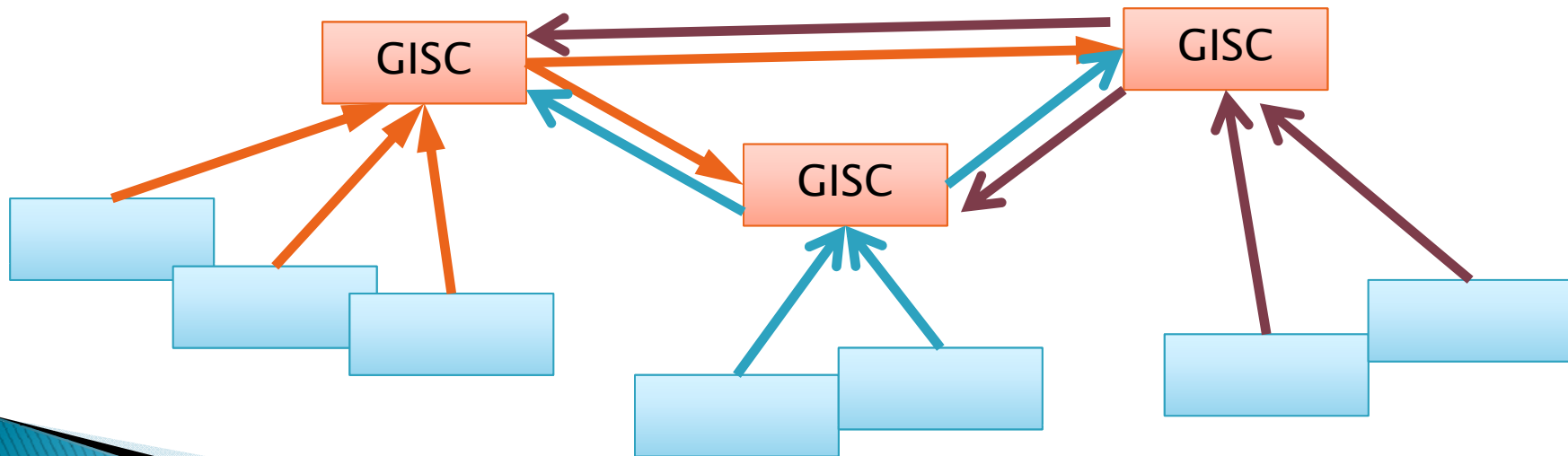
FM 12-XI	03,09	48921 48924	48925 48
FM 12-XI	15,21	48930 48940	48947 48
FM 12-XI	00,06	48921 48924	48925 48
FM 12-XI	12,18	48930 48940	48947 48
PLAIN LAN	3		PUBLIC OF
PLAIN LAN	6		PUBLIC FO
FM 12-XI	03,09	48001 48004	48008 48
FM 12-XI	15,21	48097	
FM 12-XI	00,06,12	48001 48004	48008 48
FM 12-XI	18	48008 48053	48060 48
FM 32-IX	0	48094 48097	48108
FM 32-IX	0	48094 48097	48108
FM 71-XI	MONTHLY	48327 48354	48378 48
PLAIN LAN	3		PUBLIC OF
PLAIN LAN	5		PUBLIC FO

3. Synchronisation of Catalogues among GISCs



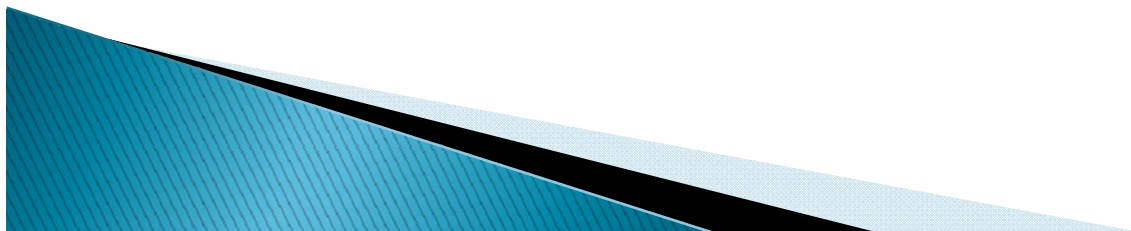
Confederated Catalogues

- ▶ Each GISC has associated centres
- ▶ Updates of metadata go to that GISC
- ▶ No central catalogue
- ▶ GISC synchronises each others



OAI-PMH

- ▶ Protocol to synchronize metadata
- ▶ Developed in Librarian community
- ▶ Open standard:
 - HTTP-based
 - CGI-like input, XML output
 - Specification <http://www.openarchives.org/OAI/>



Now operational

- ▶ Beijing, Offenbach, and Tokyo operating catalogues
- ▶ Since January 2012

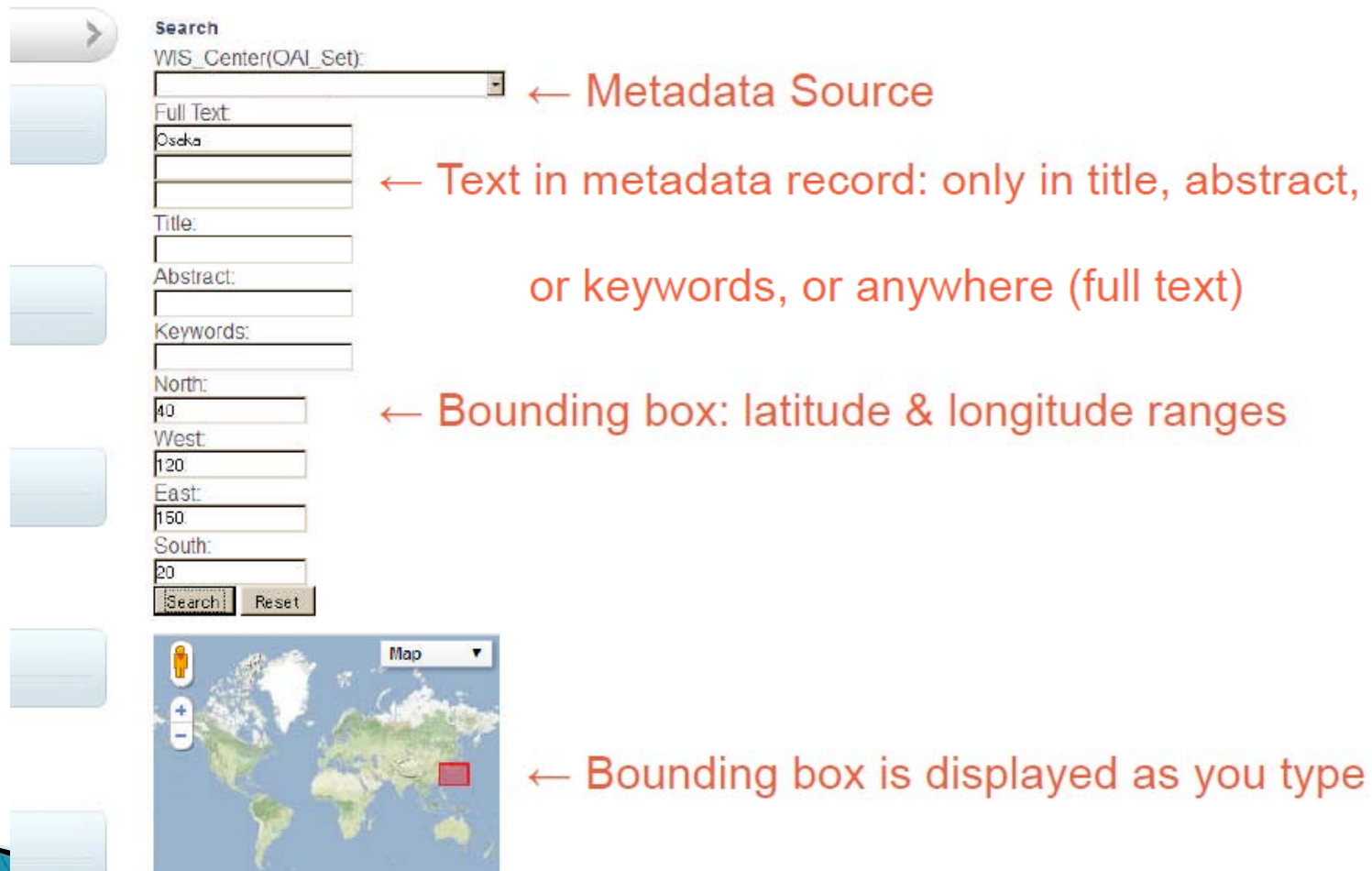


4. User interface to search catalogue



Rich “search” form for humans

<http://www.wis-jma.go.jp/meta/search.jsp>



The image shows a search form with several input fields and a map. Red arrows point to specific features with explanatory text:

- Metadata Source:** A dropdown menu labeled "WIS_Center(OAI_Set)" with a red arrow pointing to it from the text "← Metadata Source".
- Text in metadata record:** A text input field labeled "Full Text" containing "Osaka" with a red arrow pointing to it from the text "← Text in metadata record: only in title, abstract, or keywords, or anywhere (full text)".
- Bounding box:** Four input fields labeled "North:", "West:", "East:", and "South:" with values "40", "120", "150", and "20" respectively. A red arrow points to the "North:" field from the text "← Bounding box: latitude & longitude ranges".
- Map:** A world map with a red bounding box over the Pacific Ocean. A red arrow points to the map from the text "← Bounding box is displayed as you type".

The form also includes a "Search" button and a "Reset" button at the bottom.

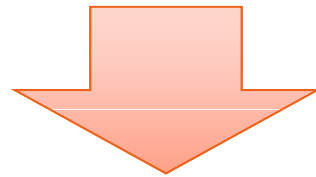
SRU for application

- ▶ Open standard: Specification available at <http://www.loc.gov/standards/sru/>
- ▶ Details similar to OAI-PMH
 - HTTP-based
 - CGI-like input
 - XML output
- ▶ Request example
 - <http://www.wis-jma.go.jp/meta/sru.jsp?version=1.1&operation=searchRetrieve&query=Osaka+and+SYNOP>



Simplest SRU application

```
<form method="GET" action=  
  "http://www.wis-jma.go.jp/meta/sru.jsp">  
<input type="hidden" name="version"  
  value="1.1" />  
<input type="text" name="query" />  
<input type="submit"  
  name="operation" value="searchRetrieve" />  
</form>
```



Osaka and SYNOP|

searchRetrieve

SRU index in Manual on WIS


(1) Text

- author
- title
- abstract
- identifier
- keyword
- type
- crs

(2) Temporal

- creationDate
- modificationDate
- publicationDate
- beginningDate
- endingDate

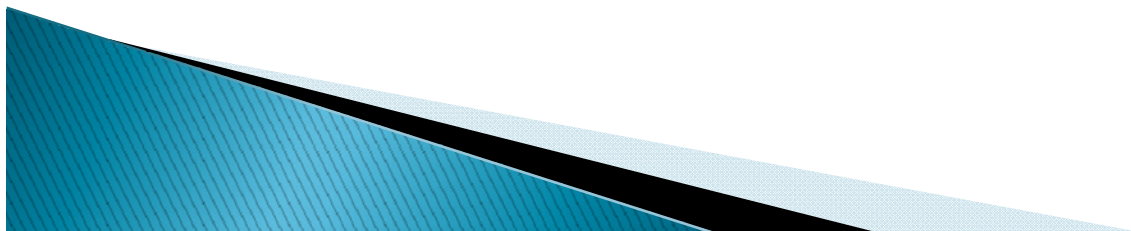
(3) Geographical bounding box



Further adaptation
to meteorology
needed

Future Challenges

- ▶ Technical refinements
 - Metadata contents to support transition from traditional catalogue
 - URL convention of globally-distributed data
 - Search index to better fit meteorological users
- ▶ Outreach
 - Really involve many people to create and use catalogue



Thank you!!



<http://www.jma.go.jp/jma/indexe.html>

<http://www.wis-jma.go.jp/>

