Synchronization and Monitoring

of WIS Discovery Metadata

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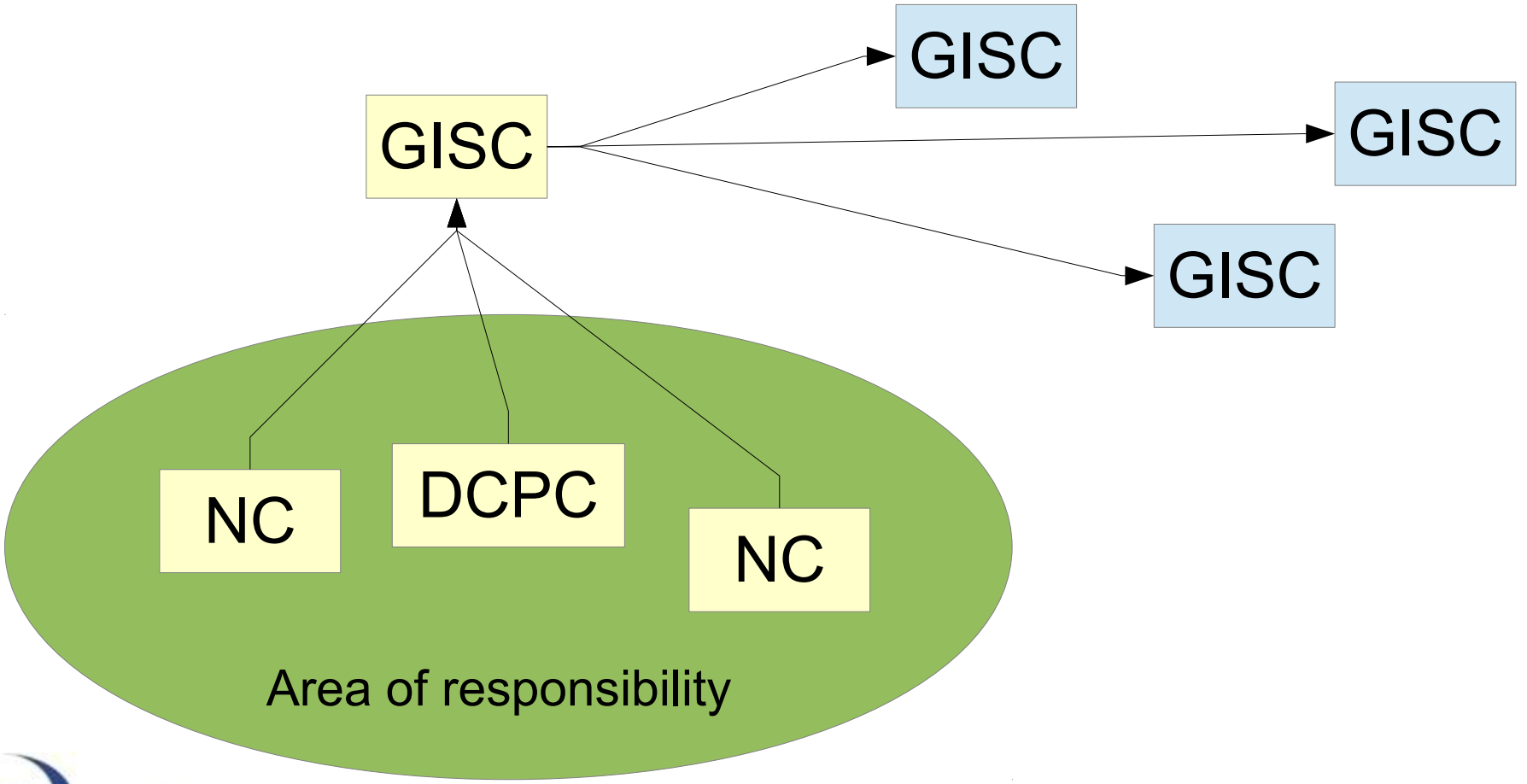
What's *synchronization*

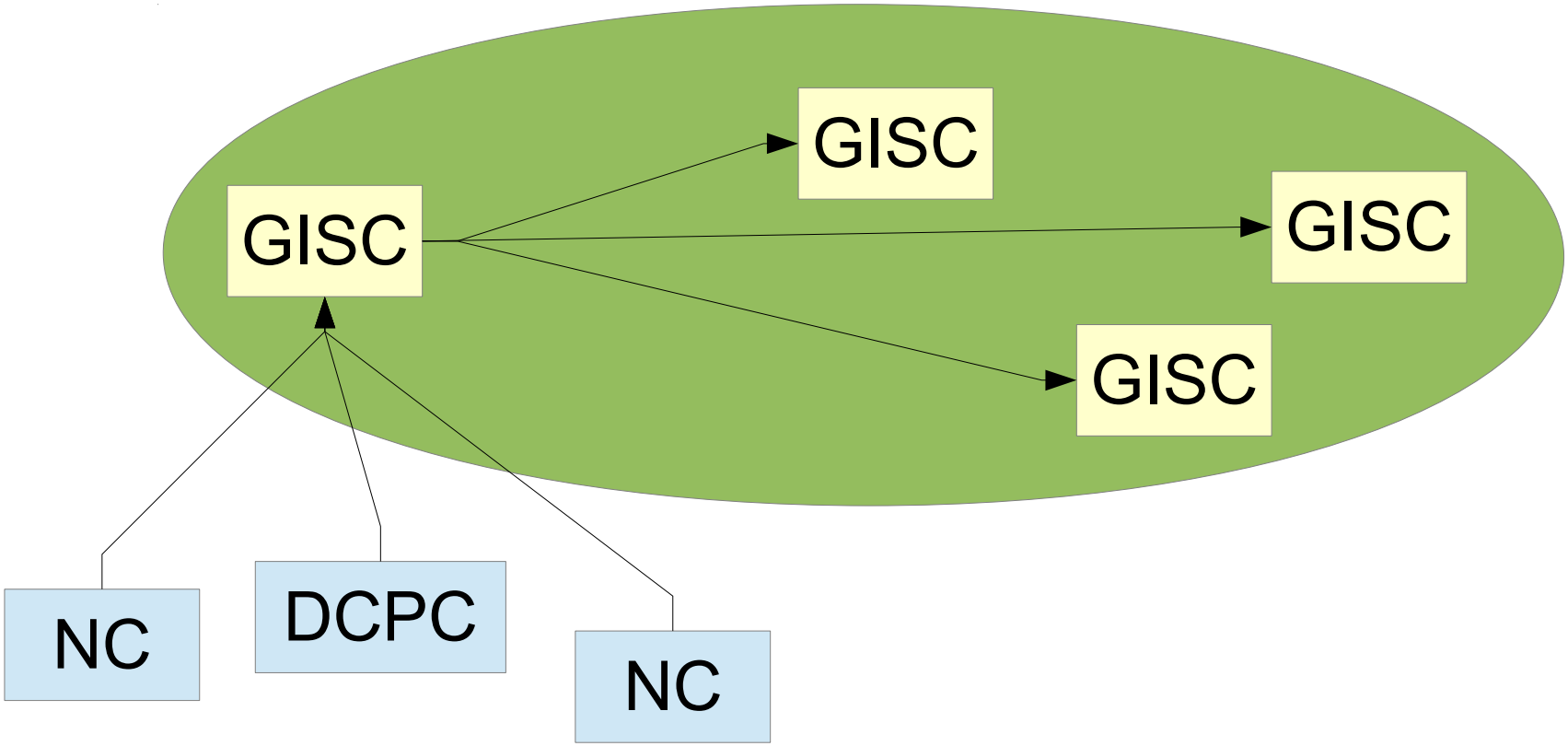
- Every GISCs updates set of metadata records
  - Add, change, or delete
- The same set at other GISCs are updated by synchronization

GISC collects metadata records

from NC / DCPC in its responsibility area



Then the GISC exchanges it



How GISCs exchange metadata

OAI-PMH

- Open Archive Initiative's Protocol for Metadata Harvesting
- Developed in the library community
- Manual on WIS tells GISCs exchange metadata by OAI-PMH

OAI-PMH: web-based

- Based on HTTP GET
- Parameters specified by query string

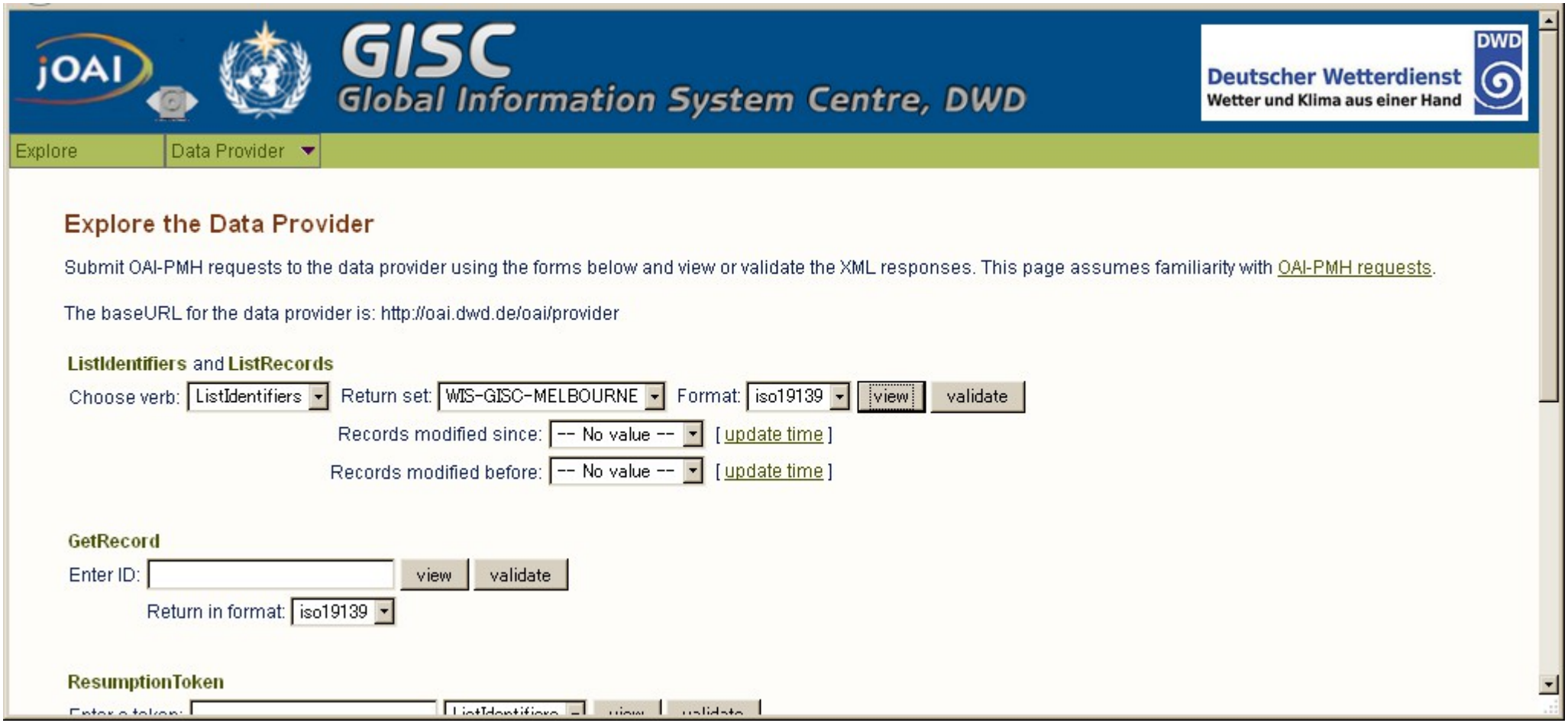
  http://www.wis-jma.go.jp/meta/oaiprovider.jsp?verb=ListSets
- Easily tested by web browsers

Query string

Often-used queries

- verb=**ListIdentifiers**&metadataPrefix=iso19139&from=2013-04-01
- verb=**GetRecord**&metadataPrefix=iso19139&identifier=urn:x-wmo:md:int.wmo.wis::SMJP01RJTD
- verb=**ListRecords**&metadataPrefix=iso19139&from=2013-04-01
-

GISC Offenbach interface
http://oai.dwd.de

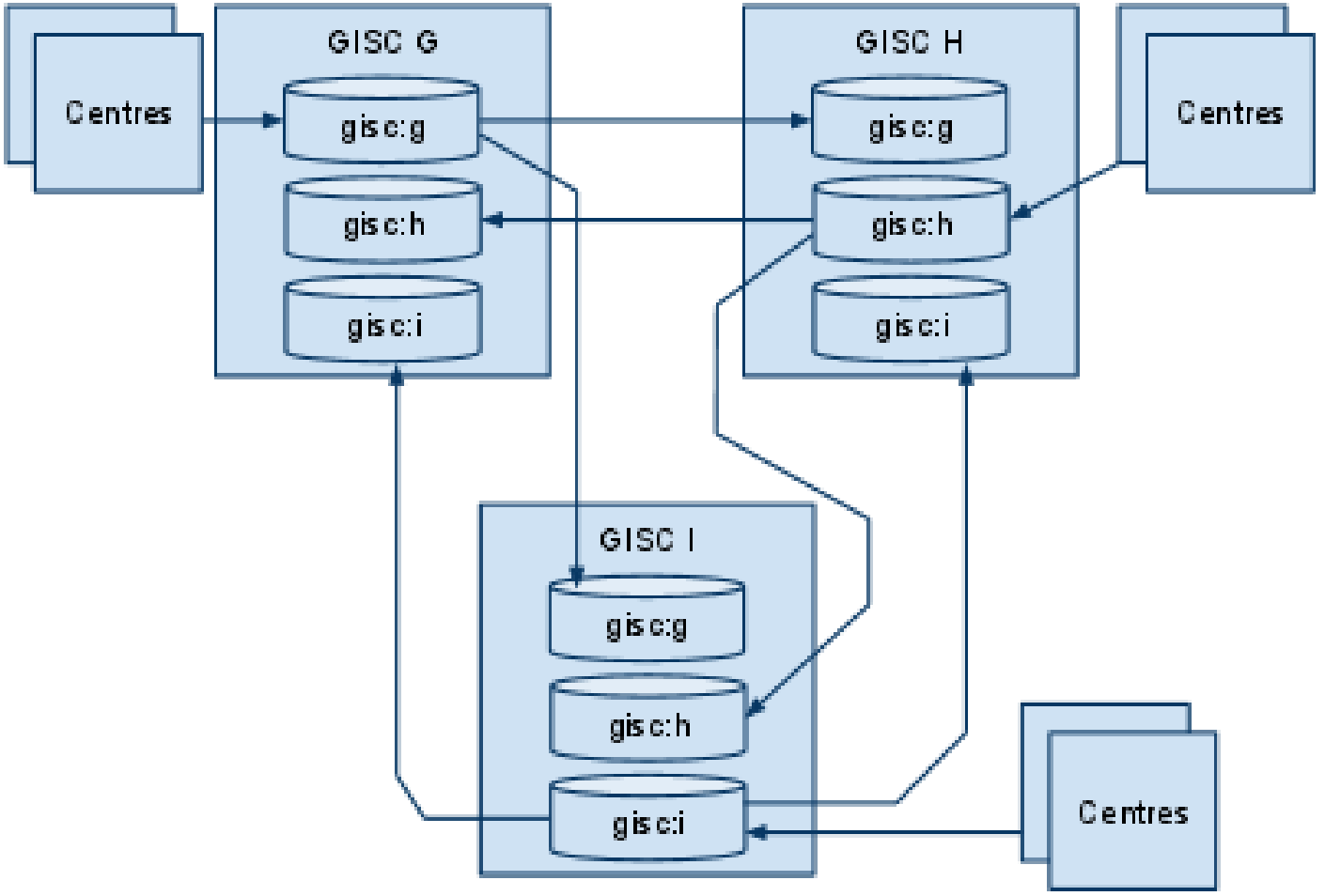



One tricky thing in WIS

OAI-PMH and topology

- OAI-PMH is designed for directional network
  - We must define who is source and who is copy
- The network of GISCs is non-directional
  - Every GISC may insert metadata record, and everything must be distributed globally
- So one trick is invented

Each GISC has own set



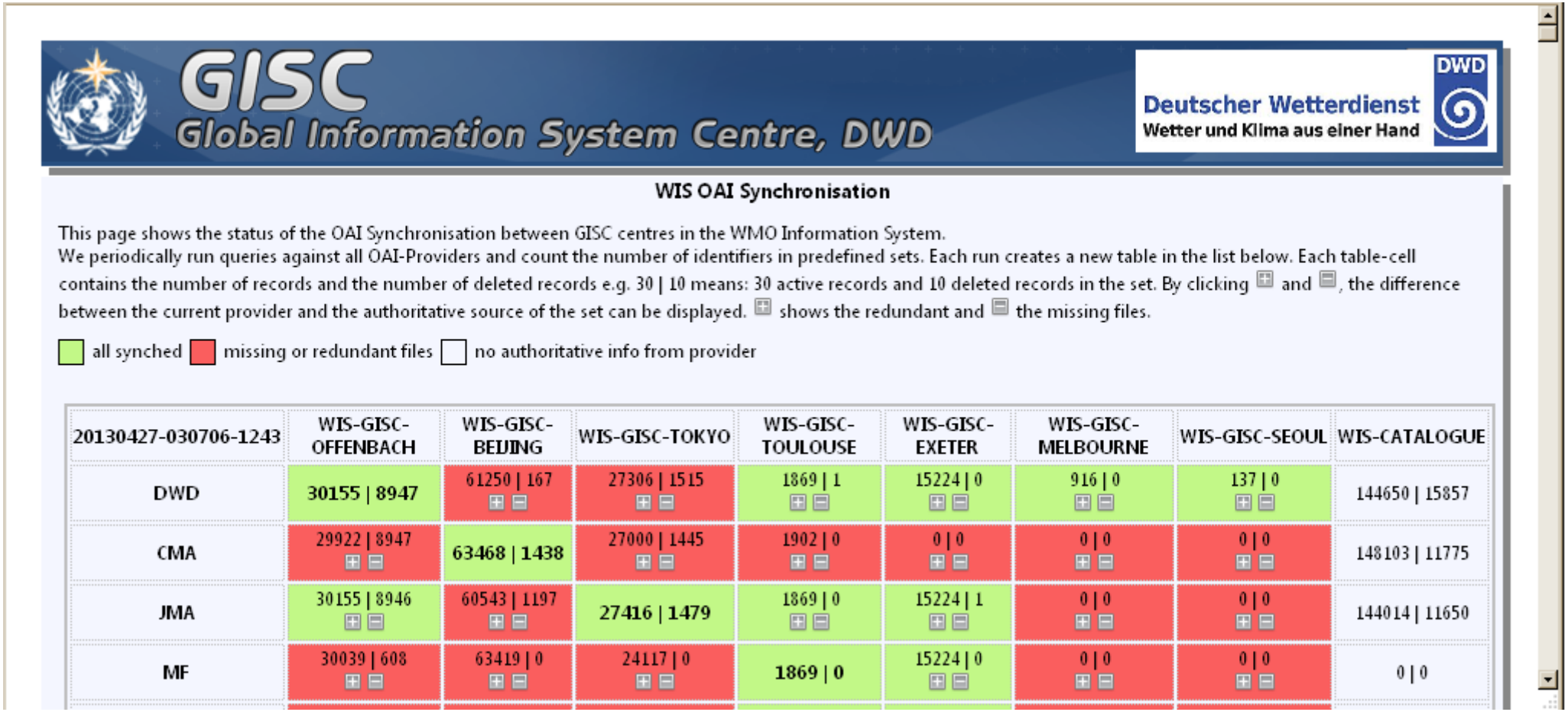
Set naming convention

- WIS-GISC-BEIJING
- WIS-GISC-EXETER
- WIS-GISC-MELBOURNE
- ...

Application of OAI-PMH network

GISCs publish the OAI-PMH servers,
thus anybody with knowledge can
join developing applications:

DWD's OAI-PMH monitor
http://oai.dwd.de/oaimonitorgui



GISC
Global Information System Centre, DWD

Deutscher Wetterdienst
Wetter und Klima aus einer Hand

DWD

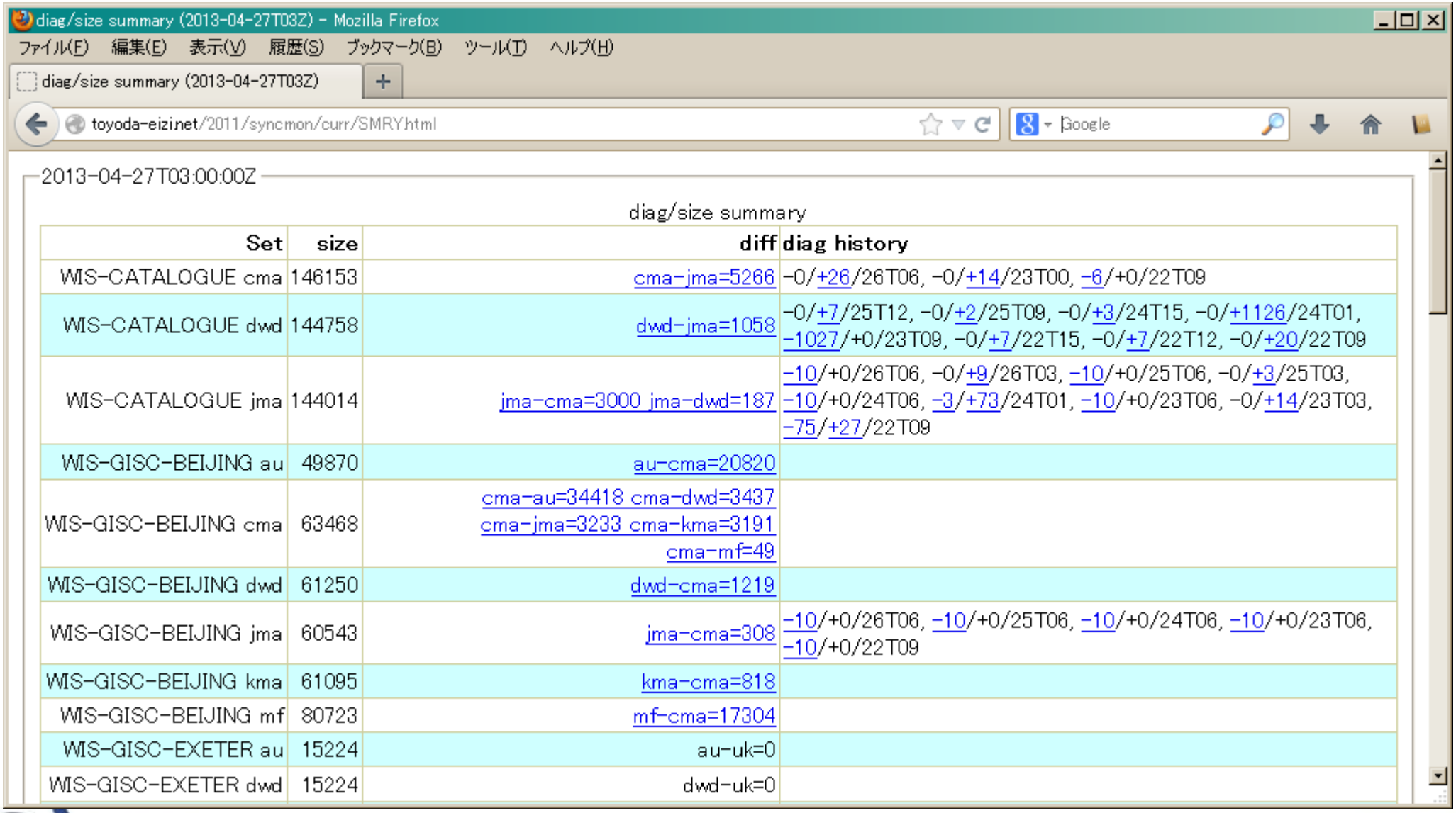
WIS OAI Synchronisation

This page shows the status of the OAI Synchronisation between GISC centres in the WMO Information System.
We periodically run queries against all OAI-Providers and count the number of identifiers in predefined sets. Each run creates a new table in the list below. Each table-cell contains the number of records and the number of deleted records e.g. 30 | 10 means: 30 active records and 10 deleted records in the set. By clicking ⊞ and ⊟, the difference between the current provider and the authoritative source of the set can be displayed. ⊞ shows the redundant and ⊟ the missing files.

all synched | missing or redundant files | no authoritative info from provider

20130427-030706-1243	WIS-GISC-OFFENBACH	WIS-GISC-BEIJING	WIS-GISC-TOKYO	WIS-GISC-TOULOUSE	WIS-GISC-EXETER	WIS-GISC-MELBOURNE	WIS-GISC-SEOUL	WIS-CATALOGUE
DWD	**30155 | 8947**	61250 | 167 ⊞ ⊟	27306 | 1515 ⊞ ⊟	1869 | 1 ⊞ ⊟	15224 | 0 ⊞ ⊟	916 | 0 ⊞ ⊟	137 | 0 ⊞ ⊟	144650 | 15857
CMA	29922 | 8947 ⊞ ⊟	**63468 | 1438**	27000 | 1445 ⊞ ⊟	1902 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	148103 | 11775
JMA	30155 | 8946 ⊞ ⊟	60543 | 1197 ⊞ ⊟	**27416 | 1479**	1869 | 0 ⊞ ⊟	15224 | 1 ⊞ ⊟	0 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	144014 | 11650
MF	30039 | 608 ⊞ ⊟	63419 | 0 ⊞ ⊟	24117 | 0 ⊞ ⊟	**1869 | 0**	15224 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	0 | 0 ⊞ ⊟	0 | 0

http://toyoda-eizi.net/2011/syncmon

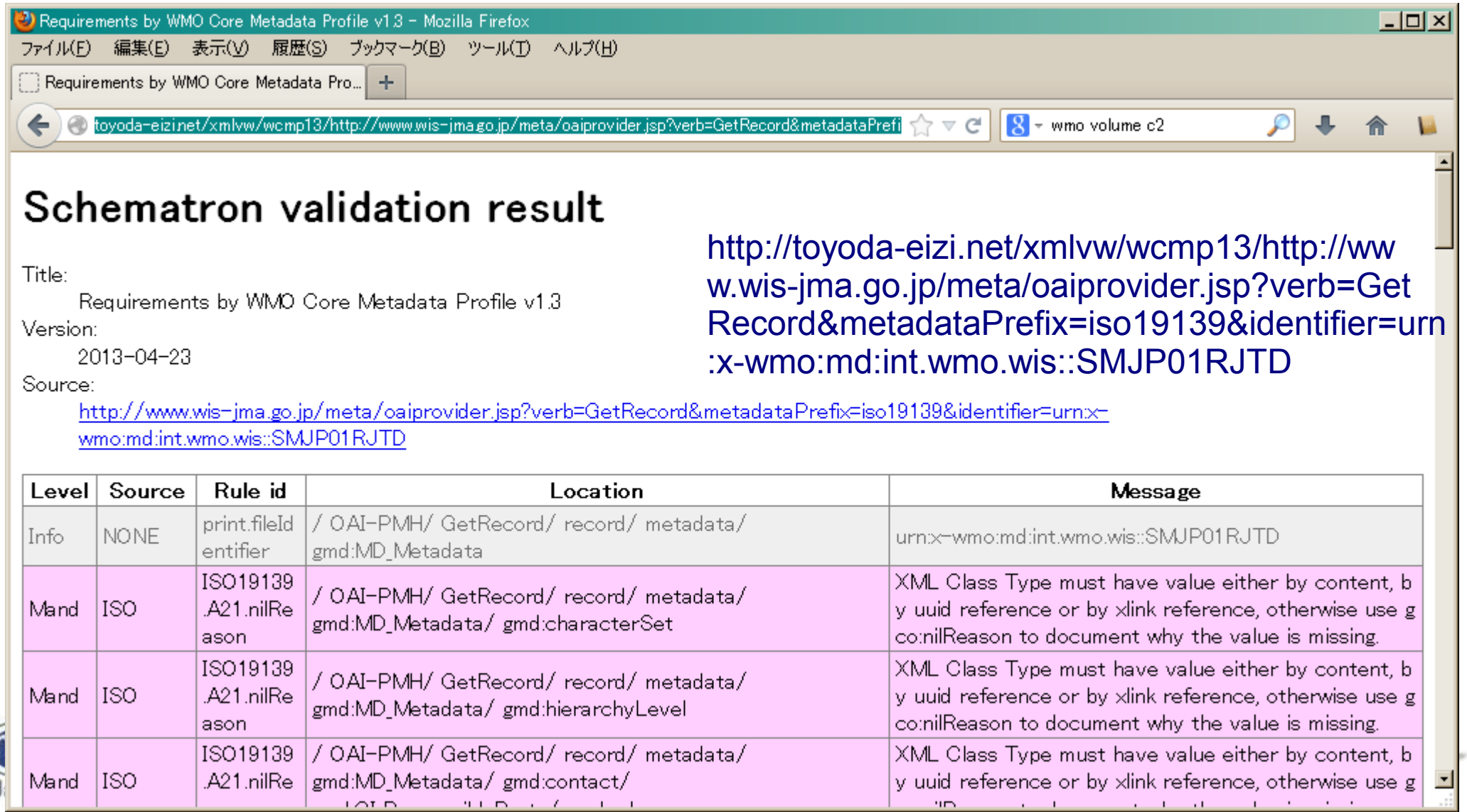


2013-04-27T03:00:00Z

diag/size summary

Set	size	diff	diag history
WIS-CATALOGUE cma	146153	cma-jma=5266	-0/+26/26T06, -0/+14/23T00, -6/+0/22T09
WIS-CATALOGUE dwd	144758	dwd-jma=1058	-0/+7/25T12, -0/+2/25T09, -0/+3/24T15, -0/+1126/24T01, -1027/+0/23T09, -0/+7/22T15, -0/+7/22T12, -0/+20/22T09
WIS-CATALOGUE jma	144014	jma-cma=3000 jma-dwd=187	-10/+0/26T06, -0/+9/26T03, -10/+0/25T06, -0/+3/25T03, -10/+0/24T06, -3/+73/24T01, -10/+0/23T06, -0/+14/23T03, -75/+27/22T09
WIS-GISC-BEIJING au	49870	au-cma=20820	
WIS-GISC-BEIJING cma	63468	cma-au=34418 cma-dwd=3437 cma-jma=3233 cma-kma=3191 cma-mf=49	
WIS-GISC-BEIJING dwd	61250	dwd-cma=1219	
WIS-GISC-BEIJING jma	60543	jma-cma=308	-10/+0/26T06, -10/+0/25T06, -10/+0/24T06, -10/+0/23T06, -10/+0/22T09
WIS-GISC-BEIJING kma	61095	kma-cma=818	
WIS-GISC-BEIJING mf	80723	mf-cma=17304	
WIS-GISC-EXETER au	15224	au-uk=0	
WIS-GISC-EXETER dwd	15224	dwd-uk=0	

WCMP Schematron Validator can take result of OAI-PMH GetRecord



Summary

- GISCs exchange metadata records with other GISCs
- GISCs use OAI-PMH, open web standard
- Applications
  - Synchronization Monitor
  - Validator