|  |  |  |
| --- | --- | --- |
|  | wmo_logo_e_black |  |
| **World Meteorological Organization** | **TT-GISC2015 Final Report**  |
| **Commission for Basic System (CBS)** | Submitted by: | Secretariat |
| Date: | 17 Dec 2015 |
| ICT-ISS/ET-WISC/TT-GISC | Original Language:  | English |
| Status: | Version 0.3 |

MEETING OF THE ET-WISC TASK TEAM ON GISCs (TT-GISC)
Brasilia, Brazil. 13-16 October 2015



## DISCLAIMER

**Regulation 43**

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

**Regulation 44**

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

© World Meteorological Organization, 23 October, 2015

The right of publication in print, electronic and any other form and in any language is reserved by WMO. Short extracts from WMO publications may be reproduced without authorization provided that the complete source is clearly indicated. Editorial correspondence and requests to publish, reproduce or translate this publication (articles) in part or in whole should be addressed to:

Chairperson, Publications Board

World Meteorological Organization (WMO)

7 bis, avenue de la Paix Tel.: +41 (0)22 730 84 03

P.O. Box No. 2300 Fax: +41 (0)22 730 80 40

CH-1211 Geneva 2, Switzerland E-mail: Publications@wmo.int

NOTE:

The designations employed in WMO publications and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of WMO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Opinions expressed in WMO publications are those of the authors and do not necessarily reflect those of WMO. The mention of specific companies or products does not imply that they are endorsed or recommended by WMO in preference to others of a similar nature which are not mentioned or advertised.

This document (or report) is not an official publication of WMO and has not been subjected to its standard editorial procedures. The views expressed herein do not necessarily have the endorsement of the Organization.

\_\_\_\_\_\_\_\_\_\_\_\_

## Table of Contents

MEETING OF THE ET-WISC TASK TEAM ON GISCs (TT-GISC) Brasilia, Brazil. 13-16 October 2015 1

DISCLAIMER 2

Table of Contents 3

Opening and working arrangements 5

1. GISC status. 5

1.1 GISC Casablanca 5

1.2 GISC Melbourne 5

1.3 GISC Seoul 6

1.4 GISC Tokyo 6

1.5 GISC Exeter 6

1.6 GISC Toulouse 7

1.7 GISC Pretoria 7

1.8 GISC Offenbach 7

1.9 GISC Brasilia 8

1.10 GISC Moscow 8

1.11 GISC Beijing 8

1.12 GISC Washington 9

2. TT-GISC actions 9

2.1 Governance for adding or removing data streams 9

2.2 GISC transmission to all other GISCs (Cache) 9

2.3 Generation of VolC1 from WIS MD 9

3. GISC functional review 10

3.1 Pros and Cons of GISC functionalities and propose ameliorations 10

3.2 Establishment of Training Land in GISC catalogues 10

4. Monitoring 11

5. Metadata Management 12

5.1 Metadata organization for search and retrieve 12

5.2 Metadata harvesting 12

5.3 Metadata catalogue consistency 13

6 Cache management 14

7 WIS Security 15

8 Users 17

9 GISCs in operation 17

10 Other business 17

11 Review of decisions and actions, including next meeting 18

12 Meeting close 18

Appendix A - LIST OF PARTICIPANTS 20

Appendix B - Agenda and Document Allocation Plan 22

Appendix C –List of action items from past and present TT-GISC meetings 25

Appendix D – Annexes to Paragraphs 31

D1 - Annex to Section 3.2: Training Land (Para 37 to 39) 31

Recommendation 31

Functional Architecture 31

Guidelines 32

D2 - Annex to Section 9 Para 79 34

Appendix E – References 35

Final Report of ET-WISC/TT-GISC,
Brasilia. October 2015

## Opening and working arrangements

1. Dr Antonio Divino Moura, Permanent Representative of Brazil to WMO, First Vice President of WMO and Director General of Instituto Nacional de Meteorologia (INMET), welcomed the Participants. He noted that it is a great pleasure for INMET to host this meeting of the TT-GISC. He noted the preparation work of Mr Jose Mauro Rezende and his staff and ensured their on-going support on his behalf for this meeting. He wished all a successful meeting and an enjoyable stay in Brazil.
2. Mr Jacques Anquetil (Lead of TT-GISC ) chaired the meeting. He thanked Dr Moura for his comments and for INMET hosting of this meeting. He provided some background to the meeting and introduced the working arrangements, agenda and document allocation. Participants then conducted an introductory “Tour de Table”.
3. The Participants adopted the agenda and document allocation plan ([Doc01](http://wis.wmo.int/File%3D1787)) and working arrangements ([Inf02](http://wis.wmo.int/file%3D1867)). A list of participants is in [Appendix A](#_Appendix_A:_LIST) and the agenda and document allocation plan is reproduced in [Appendix B](#_Appendix_B:_DRAFT). All workshop presentation material and documents are available on the WIS Wiki website: [http://wis.wmo.int/page=TT-GISC-2015](http://wis.wmo.int/page%3DTT-GISC-2015).

## 1. GISC status.

1. The meeting reviewed the reports from GISCs on their status. The chair requested those GISCs that had not been able to attend the meeting or submit a status report to do so as soon as possible (Action item 15/1-01).

### 1.1 GISC Casablanca

1. Mr Hassan Haddouch presented a report on GISC Casablanca ([Doc02](http://wis.wmo.int/File%3D1785)) including details on the GISC solution, its infrastructure and architecture. He noted that the GISC is now preoperational having been successfully audited in May 2015 and that it will be conducting a GISC training workshop from 26 to 30 October 2015. The meeting noted that this will be an important step in rolling out WIS in RA I as it will include training in WIS and the use of GISC Casablanca for all RA I RTHs as well as countries from northern Africa.

### 1.2 GISC Melbourne

1. Mr Leon Mika presented a report on GISC Melbourne ([Doc04](http://wis.wmo.int/File%3D1795)). Noting that the GISC has been operational since May 2013. Following an initial RA V workshop in May 2013, Melbourne has conducted in country training for 10 Members across Region V addressing the purpose of WIS, using GISC software, editing metadata, what BUFR messages are and what they look like. He noted that the Bureau of Meteorology National Operations Centre, one of Australia’s DCPCs which includes Melbourne World Meteorological Centre, has started development of subscription and delivery of NWP model data via WIS. External trials began in August 2015 with Global Model Data (ACCESS-G) delivery to Fiji via the Internet.

### 1.3 GISC Seoul

1. Mr Chulwoon Choi presented a report on GISC Seoul ([Doc 05](http://wis.wmo.int/File%3D1807)). The meeting noted the service metrics and architecture for GISC Seoul and the work being done towards improving the user experience including a workshop conducted in April 2015.
2. Mr Choi reported that GISC Seoul is now hosting metadata sets for GEOSS that can be harvested by other GISCs or used as a service for SRU search previously provided by GEOSS Clearing House as a part of the GEOSS Common Infrastructure. Mr Choi described the process of metadata harvesting from GEOSS, noting that only ISO19115 compliant metadata was being harvested by KMA as the other formats are not compliant with WMO standards. He demonstrated that the integrated solution provided by GISC Seoul allowing users to see WMO and GEOSS metadata, or just GEOSS. The meeting noted that the access to GEOSS data through GISC Seoul’s interface was well aligned with the requirements of Congress in 2007 (Cg-XV (9.2)) in achieving “mutual benefits made available by the interoperability arrangements between WIS and GEOSS, enabling WMO Members to have access to other Group on Earth Observation data and products” (EC-60 (3.5.1.9)). Interoperability with GEOSS was to be discussed further under agenda item 5.3.2.

### 1.4 GISC Tokyo

1. Mr Kentaro Tsuboi presented a report on the status of GISC Tokyo ([Doc 12](http://wis.wmo.int/File%3D1819)). He noted that a WIS workshop was held in Tokyo in November 2014 and focused on WIS competencies and developing a backup plan. He also reported on the progress of the backup of GISC Tokyo involving GISCs Offenbach, Beijing and Melbourne. The meeting noted that the backup procedures have performed effectively during a system failure. It further noted that GISC backup arrangements will be discussed further under Agenda Item 9.1.
2. Mr Tsuboi informed that GISC Tokyo started exchanging data with GISC Brasilia via internet as pre-operational in October 2015. The meeting noted that RTH Bangkok and the Space Weather Centre (NICT, Japan) were approved as DCPCs by Cg-17. It noted that RTH Bangkok is working on metadata management in its AoR.
3. Mr Tsuboi reported that the disaster recovery Osaka site of GISC Tokyo had been in operation since March 2015. Some centres finished a connection test and JMA is scheduling a test for other centres. He also introduced a new satellite of JMA, Himawari-8 was launched on 7 October 2014 and its products have been provided via GISC Tokyo portal and/or GTS since 7 July 2015.

### 1.5 GISC Exeter

1. Mr Mark Francis presented a report on GISC Exeter ([Doc20](http://wis.wmo.int/File%3D1835)). He reported on the connectivity of GISC Exeter with 9 other GISCs (including metadata synchronization) and 9 NCs and provided the associated daily traffic statistics. He described the backup arrangements for user subscriptions between GISCs Exeter and Toulouse noting that the GISC Exeter had operated at 100% availability in the last year and connectivity at 99.99%, both of which exceed the SLAs of 99.8%.
2. Mr Francis also updated the meeting on Exeter activities including the OpenWIS development conference in Exeter during September 2015 and their participation in the monitoring and cache in cloud projects. The meeting noted Exeter’s concerns relating to the pending updates for WIS Discovery Metadata associated with ISO19115:2006 to ISO19115:2013 and for the need to adopt a strategy and its mapping to WIS practices (WMO Core Metadata 2.0). This and issues relating to WIS monitoring and possible standard APIs for publish and subscribe were to be discussed under relevant agenda items later in the meeting.

### 1.6 GISC Toulouse

1. Mr Jacques Anquetil presented the report of GISC Toulouse ([Doc21](http://wis.wmo.int/File%3D1837)). He described the message exchange architecture in Toulouse via the RMDCN and the Internet. He noted that the connectivity of GISC Toulouse with other GISCs includes 9 through the RMDCN, another is in progress and two are still to be done. In addition two GISCs are connected for data exchange via the Internet. For metadata synchronization, Discovery Metadata is being harvested from 12 other GISCs via the Internet, two of which are in pre-operational status. He noted that 18 NCs are now connected, four of which are via the Internet. The meeting noted the issues about cache management identified by GISC Toulouse. These matters were to be addressed under agenda item 6.
2. Mr Anquetil’s report included the latest news from Toulouse and on their short term actions and plans, including their participation in the WSI Monitoring and Cache in Cloud projects. The meeting also noted GISC Toulouse’s support to GISC Casablanca in the audit process and in providing backup.

### 1.7 GISC Pretoria

1. Ms Christa Ferreira presented the report of GISC Pretoria ([Doc22](http://wis.wmo.int/File%3D1839)). The meeting noted GISC Pretoria’s hardware, software and network infrastructure which had been successfully audited in April 2014 and plans to be operational by mid-2016. It further noted that GISC Pretoria was planning to hold training for NCs connected to it early in 2016. Ms Ferreira reported that GISC Pretoria has nominated GISC Exeter as its backup and that arrangements need to be formalized.
2. The meeting noted that connection to the 11 NCs supported by the GISC is through RTH Pretoria via a mix of data lines (64Kbs) and the Internet with a 2Mbs connection to GISC Exeter via the RMDCN, mostly utilizing the gtssoc protocol.

### 1.8 GISC Offenbach

1. Mr Bernd Richter presented the report of GISC Offenbach ([Doc25](http://wis.wmo.int/File%3D1847) and [Doc26](http://wis.wmo.int/File%3D1849)). The meeting noted GISC Offenbach supports 28 NCs and several DCPCs including 6 RTHs and that GISC Offenbach is in close co-operation with GISC Moscow and GISC Tokyo with regular GISC Offenbach backup procedures established. Mr Richter highlighted that GISC Offenbach offers several services online for NCs and DCPCs in their AoR including metadata editor, metadata monitor (See <http://oai-test.dwd.de/oaimonitorgui>) and traffic monitor (See <https://gisc-test.dwd.de/monitor/gisc_of_amdcn.html>). The meeting noted that the GISC was connected to 10 other GISCs for metadata synchronization and that its monitor included these plus NC and DCPCs in its AoR as well as GEO metadata centre which harvests WMO metadata supporting discovery in GEOSS.
2. Mr Richter described further the services provide to its AoR showing sample graphs and statistics available as a part of the AoR monitoring. The meeting noted that the backup elements addressed in the report would be considered under Agenda Item 9.1.

### 1.9 GISC Brasilia

1. Mr Jose Mauro Rezende presented the report of GISC Brasilia ([Doc33](http://wis.wmo.int/File%3D1863)). The meeting noted that although GISC Brasilia had in place WIS compliant systems and connectivity to support its AoR, it still has some issues with staffing and in getting connected to the WIS core network. It noted that the physical link to Washington had been replaced with a logical link and now made a logical link through the Internet.
2. Mr Rezende demonstrated the GISC Brasilia WIS Common Dashboard (WCD) that was contributing to the WIS monitoring project and highlighted that they were also participating in the Cache in Cloud project. The meeting noted the leading role that GISC Brasilia was taking in implementing WIS in the Region III and its request for all GISCs to finalise the processes for establishing synchronization of metadata with Brasilia and to send and receive data for RA III via GISC Brasilia over the Internet to facilitate the uptake of WIS by RA III Members.

### 1.10 GISC Moscow

1. The secretariat presented the report of GISC Moscow ([Doc34](http://wis.wmo.int/File%3D1881)). The meeting noted that GISC Moscow was synchronizing its discovery metadata with 10 other GISCs and sending data from its AoR to 7 GISCs, utilizing the RMDCN and the Internet. It also noted that GISC Moscow was receiving data directly from the 10 NMHS for which it is the principal GISC. The GISC was participating in the WIS monitoring and the Cache in Cloud projects. The report described the backup arrangements of GISC Moscow with GISCs Offenbach and Toulouse noting that the backup procedures were operational.
2. The meeting noted the topics recommended for discussion by GISC Moscow relating to data exchange and to Vol C1 were on the agenda.

### 1.11 GISC Beijing

1. Ms Zhu Ting presented the report of GISC Beijing ([Doc36](http://wis.wmo.int/File%3D1885)). Her report included the current status of routine dissemination for GISC Beijing’s subscription users noting that dissemination via CMACast provides the major distribution for the subscription service. Ms Zhu described the disaster recovery site of GISC Beijing that was built in 2014 located 21KM away from CMA. As one of the important parts of DRS, there was a backup system with the same architecture as RTH Beijing. When MSS of RTH Beijing, web service of GISC Beijing or network connection to RMDCN has a failure, these services would be continuous provided by DRS in Yungang. CMA is scheduling some connection tests with other GISCs.
2. The meeting noted that CMA had started the work to update Beijing WIS Portal system to the 2nd version ( v2.0), including development of WIS monitoring services in GISC Beijing and optimizing existing functions. The new system will be in operation before July 2016. It noted GISC Beijing’s plans to progress implementing their AMDCN.
3. The meeting noted the training provided by GISC Beijing onsite and in neighbouring NMHMs during 2014 and 2015 which included guidance for WIS implementation and/or application of subscription data on weather forecast. Ms Zhu reported that Beijing planned to continue capacity building activities for their AoR in 2016.

### 1.12 GISC Washington

1. Mr Robert Bunge, participating via webex, presented the report of GISC Washington ([Doc37](http://wis.wmo.int/File%3D1891)). Mr Bunge reported that GISC Washington, presently based on OpenWIS, is operational and synchronizing metadata with most GISCs. He indicated that arrangements are being made for bilateral backup of GISC Washington and Brasilia. The meeting noted that GISC Washington supports 26 NCs and had conducted its first WIS Metadata Training for WMO Region IV in August 2015.

## 2. TT-GISC actions

1. The meeting reviewed the action items described in appendix E of the report of the last meeting ([TT-GISC 2014 Final Report](http://wis.wmo.int/file%3D759)). The meeting noted the good progress in many of the items, in particular the updates to WIS manuals and guides that were approved by CBS Ext(2014) and Cg-17. The list of action items, showing change tracking from the 2014 report is reproduced in [Appendix C](#_Appendix_C_–List) of this report.

### 2.1 Governance for adding or removing data streams

1. The meeting reviewed [Doc09](http://wis.wmo.int/File%3D1813) and the associated presentation ([Doc10](http://wis.wmo.int/File%3D1815)) provided by Mr Yasutaka Hokase. The chair thanked the sub-team, including Japan (lead), USA, Germany, France, UK and the Russian Federation, for its work and report. The meeting noted the sub-team’s proposed TOR and Working Practices on procedures for approving inclusion of data in GISC core cache as provided in the paper. TT-GISC recommended that the sub-team review the document taking into account the Cache-me Flag now included in the MoW, and then resubmit this paper to TT-GISC for review by email and then for submission to the ITT-WIS for consideration in their governance model. TT-GISC will provide the updated document, incorporating the decisions of ITT-WIS for consideration of the next ET-WISC and escalation to ICT-ISS etc (Action Item 14/1-14c).

### 2.2 GISC transmission to all other GISCs (Cache)

1. The meeting reviewed [Doc19](http://wis.wmo.int/File%3D1833) presented by Mr Bernd Richter. It noted the ET-CTS (2010) recommendation approved by CBS that “*The synchronization with the other GISCs would be realized by sending these messages [i.e. those collected within a GISCs AoR] to all other GISCs. Duplication would be avoided by not re-sending a message if it is received from another GISC*”. TT-GISC noted that the algorithms used by DWD in its small database application successfully identified missing bulletins and allowed DWD to subscribe to them, thereby improving its cache holdings as well as identifying some common mistakes in classifying bulletins and maintenance of routeing tables. It also facilitated establishing new connections with Members in their AoR. The meeting agreed to pass [Doc19](http://wis.wmo.int/File%3D1833) onto WIS Monitoring team for information as it could be useful for monitoring and correcting 24 hour cache (Action item 15/1-02).

### 2.3 Generation of VolC1 from WIS MD

1. The meeting reviewed [Doc06](http://wis.wmo.int/File%3D1841) and [Doc24](http://wis.wmo.int/File%3D1845). It agreed that the aim was to automatically generate WMO No. 09, Vol C1 from WIS Discovery Metadata catalogue. Participants discussed the possibility of a GISC creating a tool or services to reproduce the current contents of Volume C1 describing all products circulated on the GTS (ie GTS traffic catalogue). It noted that such a process would need to produce “flatfiles” and the list of centre identifiers as well as match the notification process (METNO) described in the Manual on GTS.
2. The meeting noted the work done by JMA on Vol C1 in [Doc24](http://wis.wmo.int/File%3D1845), and that an experimental implementation is available at <http://toyoda-eizi.net/2015/0811volclike/> including VolC1 and METNO C substitutes made from WIS metadata being looked at already by IPET-MDRD. The meeting agreed to keep watch on this issue and requested each GISC to investigate if they are able to do this or if work is being done within their organization. Participants agreed to report back to the next meeting of TT-GISC (Action item 15/1-03).

## 3. GISC functional review

### 3.1 Pros and Cons of GISC functionalities and propose ameliorations

1. The meeting first considered a possible FTP server structure ([Doc17](http://wis.wmo.int/File%3D1829)) utilised in GISC Offenbach as presented by Mr Bernd Richter. It noted that this solution worked well for GISC Offenbach.
2. Participants then conducted a “tour de table” that discussed the Pro´s and Con´s of operational GISC elements at technical level, including: cache, metadata harvesting, back-up and operational procedures. The results of the tour de table are recorded in a working document table ([WDoc01](http://wis.wmo.int/file%3D1895)) where the leading statement was placed in each cell as a Pro, a Con or something that could go either way. Where discussion required, these lead statements are followed by dot points supporting, adding to or contradicting the statement.
3. The simplest summary of the session is that users of WIS are well served across the different GISCs, but most solutions have some limitations. WIS as a young system, needing some homogenisation of key features such as browse, implementation of data policies and cache me flags to enable unification of practices for populating the global cache. However, the variation across GISCs is considered healthy at this time so that users can experience each GISC’s interface and identify which elements work well for them. In addition, GISCs need to implement solutions, such as the flag for data distribution policy, provided by the metadata experts that should address some of the problems that have resulted in the variability across GISCs at this time.
4. The meeting noted that some of the negative experiences with the use of WIS, especially the GISC interfaces, are a result of the application of data policy. Those GISCs that make “Res 40 Essential” and potentially in the future, “No Limitation” data available for ad hoc access provide a more positive experience to the user. Similarly, those GISCs that provide “all fields” search as default also provide a better experience for the user. Some participants were therefore keen to lessen the restrictions on users to the extent of removing the need to log in at all; however, such an implementation is not possible if WIS is to respect data policy of the data providers that impose limitations. Similarly, it was noted by some that, based on user practices to date, searching all fields is the way to go forward rather than restricting to particular fields such as Title, Abstract or Keywords.

### 3.2 Establishment of Training Land in GISC catalogues

1. This issue was raised by the Secretariat who had come across a similar problem during various WIS training sessions, and had created a solution for training members in the use of the WIS centres certification data base (<http://www-db.wmo.int/WIS/centres/candidates.asp>) where the country and organization of Training Land had been added to allow students to be able to practice updating WIS centre certification questionnaires without corrupting the operational data base. In response to this issue, the meeting formed a sub team, Leon Mika, Jose Mauro, Mark Francis and Christa Ferreira, tasked with establishing a standard practice among GISCs to enable a training Land GISC set, and users that can be used in training of people to use WIS.
2. The meeting noted that trainees should be able to create, edit and delete metadata and search for that metadata without the metadata being synchronized to other GISCs. Users need to be temporary and not affect operational systems. It should include normal user registration process. The experience should be as close to possible as a user would feel when working on their GISCs operational system. The interface needs to be accessible from outside of GISC. All GISCs need to establish the same procedures to support training on their system
3. TT-GISC agreed to the recommendation of the sub team on Training Land as reproduce in the annex to this section provided in [Appendix D](#_D1_-_Annex). It further agreed that all GISCs should implement a training environment along these lines. These practices should be included in the GISC Guidelines Wiki page. (Action item 15/1-04)

## 4. Monitoring

#### 4.1 Report on the monitoring demonstrator

1. Mr Yasutaka Hokase, WIS Monitoring Demonstration work package lead, presented a report ([Doc13](http://wis.wmo.int/File%3D1821)) on the WIS Monitoring demonstration Cg-17. He reported that the INMET dashboard was very helpful as a visual tool to explain connections for data exchange through WIS and that CMA/JMA dashboards were used to show that WIS is operational, and to show time-series graphs that were helpful to explain what is going on in data exchange and management. The meeting noted the usefulness of showing AMDCN as well as WIS Core Network connections (as with GISC Melbourne) on GISC Brasilia’s WCD (Action item 15/1-05). It highlighted the benefits of being able to drill down to the National level and noted that some PRs asked to see which centres contributed within their nation, suggesting that there is a need to include another layer to the data below the country showing DCPC and NC data products or service availability.
2. Mr Hokase reported that approximately 200 WIS Monitoring Pamphlets were handed to visitors at the Demo and that incorporating the comments from visitors will be one of the future options and further challenges. Mr Hokase thanked all contributors, the 10 GISCs (Beijing, Brasilia, Casablanca, Exeter, Melbourne, Moscow, Offenbach, Seoul, Tokyo and Toulouse) and the project members and managers, Mr Remy Giraud and Dr Weiqing Qu.
3. Mr Remy Giraud, in his role of Project Coordinator for the WIS monitoring, presented a report on the monitoring project ([Doc32](http://wis.wmo.int/File%3D1861)). TT-GISC expressed its appreciation to the three GISCs Beijing, Brasilia and Tokyo for their effort in developing and operating the three pilot WIS common dashboards (WCD). It welcomed the participation of 10 GISCs during the demo at Congress and considered that the method defined during the workshop in 2014 to publish and gather statistics using JSON file format is suitable and should be used to further enhance the monitoring of the WIS. The meeting recognized the importance of monitoring the WIS to ensure suitable performances and therefore encouraged all the GISCs to participate in the current project. It further noted the success of the Cg-17 demonstration and that it essential to add to the monitoring tasks a repeat of the demonstration done at Cg-17 to CBS-16.
4. The meeting noted that some Cg-17 participants had asked for the status of their centres which were able to be demonstrated by following down the links on the WCDs to the NCs. It requested the monitoring project team to include NCs in the demonstration. It suggested that the task team will need to determine content that could come from NCs and appropriate JSON files that could be create and sent from some NCs.
5. The meeting noted that some contributing GISCs had turned off the monitoring feeds and that the intention was to continue running the monitoring in pilot mode so we can get a feel for the variation and issues alerted through the monitoring. Mr Mika demonstrated how the WCDs for JMA and INMET functioned and highlighted some of their features. See <http://wis.wmo.int/wis-status>. The meeting noted that the GISC Tokyo WCD was very well done and that it could be permanently operational. Mr Hokase appreciated the compliment but noted that the system was purely development and would have to go through the process of becoming operational. The meeting further agreed that all the WCDs had positive elements that benefit a range of applications and that as demonstrated at Congress, the final WCD could encompass features from all three pilot WDCs.
6. The chair thanked Mr Hokase and Mr Giraud for their reports and Mr Mika for his detailed demonstration of the WIS monitoring systems. The chair highlighted the importance of TT-GISC maintaining close liaison with the monitoring team (Action item 14/1-13). The meeting agreed that it is important to run the WIS Monitoring Demonstration at CBS-16 and for the Monitoring Team to maintain the pilot. The meeting agreed that all GISCs should be encouraged to provide JSON files and encouraged to include some NC/DCPC data. GISCs are also encouraged to monitor the three WIS Common Dashboards. (Action item 15/1-06)

## 5. Metadata Management

### 5.1 Metadata organization for search and retrieve

1. Mr Bernd Richter presented the results of a case study undertaken by DWD on Search in WIS. The meeting noted the paper ([Doc18](http://wis.wmo.int/File%3D1831)), its method, standard use cases for search and the results of the case study. In particular, it noted that GISC Offenbach users prefer full text search with search criteria like cities, countries and domain terms. It also noted that application of the same test cases across different GISCs search engines provided different results. The chair thanked DWD for their contribution noting that this topic would also be a part of the WIS interface discussions under agenda item 8.

### 5.2 Metadata harvesting

1. The meeting considered two documents ([Doc27](http://wis.wmo.int/File%3D1851) and [Doc29](http://wis.wmo.int/File%3D1855)) and a power point ([Doc28](http://wis.wmo.int/File%3D1853)) on metadata harvesting. It noted [Doc27](http://wis.wmo.int/File%3D1851) (and its associated power point [Doc28](http://wis.wmo.int/File%3D1853)) about a monitoring procedure of all operational GISCs discovery metadata catalogues and that this useful tool is available online at <http://oai-test.dwd.de/oaimonitorgui>
2. It noted the recommendation in [Doc29](http://wis.wmo.int/File%3D1855) that the metadata content should be harmonized in order to improve the semantic search on GISC portals. TT-GISC supported the need for a metadata template by data type to assist users in metadata creation and guarantee the harmonization of content.
3. The meeting noted that in addition to encouraging GISCs to apply a minimum common use of keywords in guiding its centres in creation of metadata, the WIS guidelines are too broad to support such as practice. TT-GISC would like to see any optimization of metadata still providing the necessary and sufficient information to describe the data or product. TT-GISC noted that informal work has been started on templates by IPET-MDRD and encouraged them to continue this work and deliver a first version to TT-GISC as soon as possible. It noted that such templates would effectively be recommendations on how metadata should be written.
4. TT-GISC acknowledged the need of a common “WMO Core schematron” for metadata validation before insertion on GISC catalogue. This schematron would be shared and improved by the GISC community.
5. TT-GISC highlighting that we have concerns about the different result lists that are caused by lack of harmonization in the application of keywords, requested IPET-MDRD to take into consideration the recommendations of [Doc29](http://wis.wmo.int/File%3D1855) and to consider provision of a thesaurus on data type designator based on the keywords from Manual on GTS “ATTACHMENT II–5”. The purpose of this thesaurus would be to classify metadata by data/product type and facilitate search for meteorological experts. (Action item 15/1-07).
6. The chair expressed his appreciation to DWD for their provision of the documents for this agenda item.

### 5.3 Metadata catalogue consistency

#### 5.3.1 Options to improve catalogue consistency catalogue consistency

1. The meeting noted the report presented by Germany (Doc15). It appreciated the overall consistency of the catalogues and encouraged all GISCs to implement similar tests and to validate their catalogue consistency. Furthermore the meeting emphasized the importance of accurate handling of the OAI dateStamp and urges the GISCs to fix these issues by the next ET-WISC meeting. Noting that participants had thought action 14/1-10 had been completed, it request DWD to clarify what still needs to be done regarding OAI timestamps. TT-GISC urged GISCs to review the pending clarification from DWD and to fix issues with OAI dateStamp and OAI ListIdentifier requests as soon as possible. (Action item 15/1-08)

#### 5.3.2 Interoperability with GEOSS

1. The meeting noted three contributions ([Doc03](http://wis.wmo.int/File%3D1793), [Doc05](http://wis.wmo.int/File%3D1807) and [Doc11](http://wis.wmo.int/File%3D1817)) specifically addressed the interoperability of WIS with GEOSS. It noted that the three main components were:
	1. GEO Discovery and Access Broker (DAB) which had recently replaced the GEOSS Clearing House and equates to WMO’s GISCs in that it hosts GEOSS discovery metadata catalogue;
	2. GISC Offenbach is serving all WIS metadata to the GEO DAB through its OAI-PMH server, backed up by GISC Tokyo; and
	3. GISC Seoul is harvesting all ISO19115 compliant metadata from GEO DAB and making this metadata available to other GISCs as OAI-PMH metadata sets or through SRU.
2. The meeting noted, other than GISC Seoul which was using its own integrated search of its metadata catalogues, that discovery of GEOSS data and products through WIS was being done by GISCs providing an SRU user interface where users could search for GEOSS (or other data systems) metadata via SRU pointing to the GEOSS (or other) Clearing House.
3. As noted in [Doc11](http://wis.wmo.int/File%3D1817) from DWD, three important questions that needed to be addressed by TT-GISC were as follows:
* Does it make sense that the operational GISCs still point their remote search against the GEOSS Clearinghouse which is obviously not in sync with the GEO DAB and is not any more part of the operational GCI?
* Assuming that the offered service by KMA is operational would it make sense that the GISC point their remote search against KMA’s service instead against the GEOSS Clearing house?
* Does the possibility to search in the harvested GEOSS records fulfils the WIS requirement for a remote search in GEOSS
1. In addressing the above, the meeting noted that they have two sustainable options to meet the needs identified by EC-65 and supported by Cg-15 to be able to find GEOSS data and products through WIS. These are to harvest the GEOSS metadata from GISC Seoul and use their own internal search capability to include GEOSS metadata in users’ searches as being done by KMA, or they could point their current SRU service to GISC Seoul’s SRU server. The meeting noted, as they did when consideration of GISC Seoul’s status report in Agenda Item 1, that both meet the technical specifications provided in the WIS Manual, but most of the current GISC SRU interface solutions probably fall short of the expected user experience EC and Congress were intending.
2. Noting [Doc11](http://wis.wmo.int/File%3D1817) suggested that the GEOSS Clearing House was no longer in synch with the DAB, it wasn’t clear to the meeting if the GEO DAB supported SRU or what the actual status of the Clearing House is. It asked DWD and KMA to clarify.
3. The chair thanked DWD, KMA and JMA for providing interoperability with GEOSS and looked forward to an update at next TT-GISC meeting. (Action item 15/1-09)

## 6 Cache management

#### 6.1 Cache in the cloud

1. Mr Remy Giraud, chair of ET-CTS, reported on the Cache in Cloud project ([Doc31](http://wis.wmo.int/File%3D1859)). The meeting expressed its appreciation to ET-CTS and contributors, recognizing that the “cache in and through the cloud” is a very promising solution to obtain a shared and uniformed cache between all the GISCs. It welcomed the participation of the 13 GISCs and urged the two remaining GISCs to join the pilot, either directly or via a third party. TT-GISC supported the ET-CTS circulation of a questionnaire to assess the possibility of using this solution operationally.
2. TT-GISC noting that the initial investigation is on technical issues, expects that there at some time the project will need to address all the issues raised in the paper, such as who can manage, who will pay, etc. It further noted that if this project is to save money for GISCs, as hoped, operating costs will be a very important element for the pilot to identify, including exposure to suppliers’ payment and pricing structures, that is selecting the right provider for the job. These on the whole will be addressed at the next ET-CTS.

#### 6.2 24h cache completeness

1. The meeting reviewed [Doc09](http://wis.wmo.int/File%3D1813) and [Doc10](http://wis.wmo.int/File%3D1815). It noted the proposed TOR and Working Practices on procedures for approving inclusion of data in GISC core cache as provided in the paper, which was defined by a sub team including Japan (lead), USA, Germany, France, UK and the Russian Federation. TT-GISC’s recommendations reviewing the document taking into account the Cache-me Flag is now included in the MoW, and provide this paper for review by email and submission to the ITT-WIS for consideration in their governance model. TT-GISC will provide this updated document, incorporating the decisions of ITT-WIS for consideration of the next ET-WISC and escalation to ICT-ISS etc.
2. Ms Zhu Ting presented an analysis of the bulletins in 24h cache based on information provided by six GISCs ([Doc35](http://wis.wmo.int/File%3D1883)). TT-GISC expressed its appreciation for CMA’s initiative in providing cache monitoring. The meeting noted that the ITT-WIS has still to determine the governance process for the implementation of the Global Exchange and cache me flag and that once this governance is resolved, the cache management will be managed by the flag. In the meantime GISCs are able to see the results of the cache management, including the variability across GISCs resulting from the current approach.
3. TT-GISC noted that report shows that the data in GISCs 24h cache is clearly different from VolC1 and WIS GTS metadata and that this paper is a starting point for monitoring. The meeting agreed that future analyses should include all GISCs. It also agreed to provide this report to the WIS Monitoring Team to take into consideration. The meeting requested that the GISCs investigate the difference between the bulletins on GTS in their area of responsibility and WIS GTS metadata provided by GISCs as soon as possible. CMA agreed to upload the raw data sets to assist GISCs in their analysis. (Action item 15/1-10)
4. The meeting noted the report from Germany ([Doc14](http://wis.wmo.int/File%3D1823)) presented by Mr Bernd Richter identifying a need for an agreed standard for associating non-bulletin data and products with a file pattern. The meeting will forward the request to IPET-MDRD (Action item 15/1-10).

## 7 WIS Security

#### 7.1 Data policies

1. The meeting had noted during agenda items 4 and 5 that WMO Data policy had been updated by fast track in May 2015[[1]](#footnote-1) to include an extra field of No Limitation, meaning GISCs now have:
* Res 40 Essential
* Res 40 Additional
* NoLimitation
* Other

The fast track change was as follows:

Add the following entry (5) to the end of Table 14 in Part 2 of Appendix C of the Manual on WIS, Changes to take effect 19 May 2015

|  |  |  |
| --- | --- | --- |
| Name | Domain code | Definition |
| 5. NoLimitation | 004 | No limitation on distribution or use. |

1. Participants expressed concern that effectively Res 40 essential and no limitation were the same from a GISC point of view in implementation.
2. Previously, TT-GISC had understood from the MoW that the cache includes “essential data” and part of the “additional data”, as specified in WMO Resolution 25 (Cg-XIII) and Resolution 40 (Cg-XII). Noting that GISC can identify GTS data by the GTS priority field being populated, GISCs did not have a clear flag or indicator as to what should be cached so that TT-GISC had asked the IPETs to provide a flag and guidance on what data should be in the cache.
3. The meeting had also noted that in addition to the GTS priority, there is a field (code list WMO\_DistributionScopeCode) that was also introduced at the request of the TT-GISC. It is in the published version of the Manual:

Table 17.          WMO\_DistributionScopeCode «CodeList»

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Domain code** | **Definition** |
| 1. | WMO\_DistributionScopeCode | WMODisScoCd | Scope of distribution for data published for exchange within WIS |
| 2. | GlobalExchange | 001 | Data are published for global exchange via WIS. Data shall be incorporated into the GISC cache. |
| 3. | RegionalExchange | 002 | Data are published for regional exchange via a GISC. |
| 4. | OriginatingCentre | 003 | Data are published for exchange directly via the originating centre. |

1. TT-GISC expressed its appreciation to the IPETs for developing this flag, noting that it is necessary to have this information for the purposes of monitoring cache correctness and compliance across GISCs.
2. The meeting noted that CBS had requested ICT-ISS to establish an Intercommission Task Team (ITT-WIS) to look at the governance for allowing a data provider to mark the code as cache/globally distribute. However, TT-GISC noted that there is an interim issue for some GISCs of how to manage the cache and emphasized the importance of ITT-WIS providing a governance model as soon as possible.
3. A possible interim solution is that GISCs manage their own capacity in consultation with data providers without forcing other GISCs to also hold that data. This means that the caches across GISCs will be different. The meeting agreed to work this way for time being.
4. The meeting further emphasized that CBS should treat this as a matter of high priority and use fast track to approve the recommendations of the ITT/WIS on this matter. The meeting agreed on action items 15/1-11 and 15/1-12
5. The meeting reviewed the paper from Germany on data policy ([Doc16](http://wis.wmo.int/File%3D1827)). It invited the author to review the document in line with the updates of May 2015 to the data policy option which included the addition of NoLimitation. It recommended that the paper be resubmitted to IPET-MDRD. (Action item 15/1-13)

## 8 Users

#### 8.1 User interface

1. .The chair introduced this agenda item by a quick review of the GISC interfaces available to users, noting the variation from minimal to complex. See <http://www.wmo.int/giscs> for links to all GISCs. He also demonstrated alternative interfaces from other meteorological related services that he found very useful. Participants then identified elements that they found positive (pro) or negative about the various features across the GISCs. They also made some suggestions as well as identifying possible enhancements. The results are listed in a working document ([WDoc12](http://wis.wmo.int/file%3D1931)) and may be referred to by GISCs when reviewing their own interfaces and plans for continuous improvement.

## 9 GISCs in operation

1. Noting the information on GISC to GISC backup provided in the GISC status reports ([Agenda item 1](#_1._GISC_status.)), the meeting also reviewed two documents addressing backup systems in place between GISCs Beijing, Offenbach and Tokyo.
2. Mr Bernd Richter and Mr Yasutaka Hokase introduced [Doc23](http://wis.wmo.int/File%3D1843) reporting on the current status of mutual backup between GISC Offenbach and GISC Tokyo based on a concept of maximizing the use of current resources such as GTS, DAR and minimizing cost for GISC backup. Mr Richter and Mr Hokase also introduced advantages of using the Internet for backup and further efforts in order to enhance backup completeness
3. Ms. Zhu Ting and Mr. Kentaro Tsuboi reported on the concept and status of GISC backup between GISC Beijing and GISC Tokyo ([Doc30](http://wis.wmo.int/File%3D1857)). Ms. Zhu and Mr. Tsuboi also introduced an effective way of the backup procedure using GTS which needs arrangements for backup data but will be implemented without specific handling and additional cost.
4. The meeting reviewed all relevant input and constructed a table of the results, with the GISC being backed up listed by row, and the GISC backing up the collection and distribution services for the AMDCN listed across the columns. See [Appendix D item D2](#_Annex_to_Section) for the annex to this paragraph for the table or [WDoc07](http://wis.wmo.int/file%3D1913) for the excel version. It agreed to review this list at the next meeting of TT-GISC (Action item 15/1-14).

## 10 Other business

#### 10.1 DBNet – From RARS to DBNet

1. The secretariat introduced the meeting to the concept and aims of DBNet ([Doc07](http://wis.wmo.int/File%3D1809) / [Doc08](http://wis.wmo.int/File%3D1811)). The meeting recalled that the original concept of the Regional ATOVS Retransmission System (RARS) was to ensure global availability of near real-time ATOVS data received by a collection of Direct Broadcast stations distributed around the world utilising the GTS with an aim of having data available at NWP centres within 30 minutes of reception at the ground station. As demonstrated by the Asia-Pacific statistics for RARS, data coming to Tokyo via the GTS was taking in the order of 15 to 20 minutes. The meeting noted that the satellite community wish to extend RARS, which has been a very successful component of WIS under the IGDDS, to include hyperspectral sounders and possibly other sensors from non-geostationary satellites. In doing this, the satellite community had rebranded RARS to be the “**Direct Broadcast Network”** for Near Real-Time Relay of Low Earth Orbit Satellite Data, simply called **DBNet**.
2. The meeting noted that in addition to the above aims and objectives, RARS also had a role in ensuring global consistency by using common software, standardized coding and file naming, and quality monitoring. In order to maintain this role in DBNet, the satellite community have prepared a draft Guide to the Direct Broadcast Network (DBNet) for near real-time relay of low earth orbit satellite data ([Doc08](http://wis.wmo.int/File%3D1811)) which contains essential information for operators of receiving stations and users of the DBNet data if the system is to work effectively. A small but essential part of this information is describing how to use of WIS and the GTS.
3. The secretariat highlighted that the WIS components had been developed in close consultation with the WIS Project Office but it is still necessary to have expert review of these components by the OPAG-ISS which will effectively be a stakeholder in this new guide before it is presented for approval at CBS-16. TT-GISC agreed to review the Guide ([Doc08](http://wis.wmo.int/File%3D1811)), provide any feedback to the secretariat and to escalate the document to ET-WISC and other OPAG-ISS expert teams for similar review and final consideration by CBS-16 (Action item 15/1-15).

## 11 Review of decisions and actions, including next meeting

1. The meeting reviewed its discussions and decisions and updated the action list described in appendix E of the report of the last meeting ([TT-GISC 2014 Final Report](http://wis.wmo.int/file%3D759)). The revised list of actions for this and past meetings is reproduced in [Appendix C](#_Appendix_C_–List) of this report.
2. The meeting noted the offer of Australia to host the next meeting of TT-GISC and the desire of the chair to hold the meeting adjacent to the next ET-WISC meeting. It agreed to work with a tentative schedule of holding the meeting at the Bureau of Meteorology, Australia in the third week of April 2016. The chair will liaise with Ms Li Xiang, chair of ET-WISC to confirm that a joint meeting is possible (Action item 15/1-16)

## 12 Meeting close

1. The chair thanked the participants for their friendly and cooperative contributions to this meeting which has raised some very important issues to address before the next meeting. He made special mention of those who participated by Webex, especially those that joined from home or outside of their normal working hours. He thanked Dr Moura and Mr Rezende for providing the facilities that contributed to such as successful outcome.
2. Dr Moura noted that the meeting had addressed and resolved many issues but had also identified new aspects that need to be addressed. He was very pleased with the work and outcome of this meeting and wished all a safe trip home. He encouraged those who were not flying out straight away to visit some of the features of the city of Brasilia.
3. The chair in closing the meeting, expressed his appreciation to the INMET administration and technical support staff and to the WMO secretariat for their efforts. He wished all participants a safe return home.

----------------------------

# Appendix A - LIST OF PARTICIPANTS

|  |  |  |
| --- | --- | --- |
| **Country** | **GISC** | **Representative(s)** |
| Australia | Melbourne | Leon Mika |
| Brazil | Brasilia | Jose Mauro Rezende (Host) |
| China | Beijing | Ms Zhu Ting |
| France | Toulouse | Jacques Anquetil (Chair) |
| Germany | Offenbach | Bernd Richter |
| India | New Delhi | - |
| Islamic State of Iran | Tehran | - |
| Japan | Tokyo | Yasutaka Hokase & Kentaro Tsuboi |
| Morocco | Casablanca | Hassan HADDOUCH |
| Republic of Korea | Seoul | Chulwoon Choi |
| Russian Federation | Moscow | - |
| Saudi Arabia | Jeddah | - |
| South Africa | Pretoria | Christa FERREIRA |
| UK | Exeter | Mark Francis  |
| USA | Washington | - |
| Webex (Adhoc) | Toulouse, Exeter, Offenbach and Washington.  | Remy Giraud (Chair: ET-CTS) and Benjamin Saclier (France), Dominic Woollatt and Paul Nelson (UK), Markus Heene (Germany), Robert Bunge (USA), Lothar Wolf (Lead: TT-DC) |
| WMO | Secretariat | David Thomas |

# Appendix B - Agenda and Document Allocation Plan

| **Item** | **Title** | **Lead** | **Docs** |
| --- | --- | --- | --- |
| i. | Opening of the meeting | Chair | [Doc01](http://wis.wmo.int/File%3D1787), [Inf02](http://wis.wmo.int/file%3D1867) |
| 1. | GISC status | GISCs |  |
| 1.1. | Participants will present their GISC status |  | [Doc02](http://wis.wmo.int/File%3D1785), [Doc04](http://wis.wmo.int/File%3D1795), [Doc05](http://wis.wmo.int/File%3D1807), [Doc12](http://wis.wmo.int/File%3D1819), [Doc20](http://wis.wmo.int/File%3D1835), [Doc21](http://wis.wmo.int/File%3D1837), [Doc22](http://wis.wmo.int/File%3D1839), [Doc25](http://wis.wmo.int/File%3D1847)&[26](http://wis.wmo.int/File%3D1849), [Doc33](http://wis.wmo.int/File%3D1863), [Doc 34](http://wis.wmo.int/File%3D1881), [Doc 36](http://wis.wmo.int/File%3D1885), [Doc 37](http://wis.wmo.int/File%3D1891) |
| 2. | TT-GISC actions ([Inf03](http://wis.wmo.int/file%3D759)) |
| 2.1. | participants review action defined during the previous meeting |  | [Doc09](http://wis.wmo.int/File%3D1813), [Doc10](http://wis.wmo.int/File%3D1815), [Inf03](http://wis.wmo.int/file%3D759) |
| 2.2. | GISC transmission to all other GISCs (Cache) |  | [Doc19](http://wis.wmo.int/File%3D1833) |
| 2.3. | Generation of VolC1 from WIS MD |  | [Doc06](http://wis.wmo.int/File%3D1841) |
| 3. | GISC functional review |
| 3.1. | Participants will review the pro and cons of GISC functionalities and propose ameliorations |  | [Doc17](http://wis.wmo.int/File%3D1829) |
| 3.1. | Establishment of Training Land in GISC catalogues | Secretariat |  |
| 4. | Monitoring |
| 4.1. | Project manager will report on the monitoring demonstrator and the new options which will be implemented in the future |  | [Doc13](http://wis.wmo.int/File%3D1821), [Doc32](http://wis.wmo.int/File%3D1861) |
| 5. | Metadata Management |
| 5.1. | Metadata organization for search and retrieve |  |  |
| 5.1.1. | In order to improve DAR functionalities, participants will review the different search engine implementation within WIS and draft recommendations on how data producers and users can use efficiently the DAR |  | [Doc18](http://wis.wmo.int/File%3D1831) |
| 5.2. | Metadata harvesting |
| 5.2.1. | Participants will identify functionalities to ensure that the metadata are up-to-date |  | [Doc27](http://wis.wmo.int/File%3D1851)&[28](http://wis.wmo.int/File%3D1853), [Doc29](http://wis.wmo.int/File%3D1855) |
| 5.2.2. | Participants will review harvesting procedures (eg when harvesting files are not available) |  | [Doc27](http://wis.wmo.int/File%3D1851)&[28](http://wis.wmo.int/File%3D1853), [Doc29](http://wis.wmo.int/File%3D1855) |
| 5.3. | Metadata catalogue consistency |
| 5.3.1. | Participants will discuss options to improve catalogue consistency ( eg Steve Foreman email) |  | [Doc06](http://wis.wmo.int/File%3D1841), [Doc15](http://wis.wmo.int/File%3D1825), [Doc24](http://wis.wmo.int/File%3D1845) |
| 5.3.2 | Interoperability with GEOSS |  | [Doc03](http://wis.wmo.int/File%3D1793), [Doc11](http://wis.wmo.int/File%3D1817) |
| 6. | Cache management |
| 6.1. | Cache in the cloud |  |  |
| 6.1.1. | ET-CTS Chair will report on the progress of a pilot project to synchronize GISC cache through the cloud |  | [Doc31](http://wis.wmo.int/File%3D1859) |
| 6.2. | 24h cache completeness |  | [Doc 35](http://wis.wmo.int/File%3D1883) |
| 6.2.1. | Participants will review cache harmonization between GISCs |  | [Doc09](http://wis.wmo.int/File%3D1813), [Doc10](http://wis.wmo.int/File%3D1815), [Doc14](http://wis.wmo.int/File%3D1823) |
| 7. | WIS security |
| 7.1. | Data policies |  |  |
| 7.1.1. | Participants will review data policy implementation and will propose a framework in order to harmonize data policy |  | [Doc16](http://wis.wmo.int/File%3D1827) |
| 8. | Users |
| 8.1. | User interface ( Base functions?) |  |  |
| 8.1.1. | Participants will review the different GISC portal in order to identify they functions necessary to GISC portal and recommend way to implement portal to facilitate search and retrieve data |  |  |
| 9. | GISCs in operation |
| 9.1. | Participants will review operational procedures, backup procedures and procedures for communications with NCs and DCPCs |  | [Doc23](http://wis.wmo.int/File%3D1845), [Doc30](http://wis.wmo.int/File%3D1857) |
| 10. | Other business |
| 10.1 | DBNet – From RARS to DBNet |  | [Doc07](http://wis.wmo.int/File%3D1809), [Doc08](http://wis.wmo.int/File%3D1811) |
| 11. | Next meeting (Date and location) |
| 12. | Meeting close |

# Appendix C –List of action items from past and present TT-GISC meetings

| **Action Number** | **Decision/recommendation/ action**  | **Responsible** | **Objective/deadline** | **Status** |
| --- | --- | --- | --- | --- |
| ~~14/1-1~~ | **~~Decision:~~** ~~Endorsed the core WIS competencies and the associated output documents on competencies and learning guide:~~~~[~~[~~http://wis.wmo.int/file=687~~](http://wis.wmo.int/file%3D687)~~] [~~[~~http://wis.wmo.int/file=689~~](http://wis.wmo.int/file%3D689)~~].~~ | ~~Include in report~~ | ~~28Feb2014~~ | ~~Done~~Completed. See Report of CBS Ext 2014 for updates now being published in the 2015 Manual on WIS[[2]](#footnote-2) |
| 14/1-2 | **Action:** a) Encouraged all GISCs to start to utilize the competency and learning guide in their capacity development and training activities. b) All GISCs should aim at ensuring centres in their area of responsibility have staff equipped with appropriate competencies and thus maximize their ability to support and benefit from WIS | GISCs | ~~ASAP~~ | Ongoing, especially now we have MoW as per 14/1-1 |
| ~~14/1-3~~ | **~~Action:~~** ~~Jacques Anquetil to coordinate the collection of the comments from all the GISCs on the elements proposed for monitoring and to submit a report to ET-WISC by the 27 March. It requested that the secretariat facilitate provision of the report to ET-WIS.~~~~See also action 14/1-13~~ | ~~GISC representatives, Chair, Secretariat~~ | ~~27 March 2014~~ | ~~To be~~ Done, Webex meetings led to current project with Remy and Weiqing as project leads and Yasu as technical lead. |
| ~~14/1-4~~ | **~~Action:~~** ~~All GISCs to generate and publish metadata for those bulletins that they are producing and already circulating on GTS as soon as possible~~ | ~~GISCs~~ | ~~ASAP~~ | ~~Ongoing~~Done. Normal Activity |
| ~~14/1-5~~ | **~~Decision:~~** ~~Agreed that GISC Tokyo provide its "WIS-UNASSOCIATED" set as the authoritative source of baseline metadata and invited all GISCs to synchronize the set.~~ | ~~GISCs~~ | ~~ASAP~~ | ~~Ongoing~~ Done and proving effective; a few GISCs to go |
| ~~14/1-6~~ | **~~Decision:~~** ~~Agreed~~ [~~Doc 04~~](http://wis.wmo.int/doc%3D2831) ~~provides the basic structures of OAI-Sets to be provided by each GISC.~~ | ~~GISCs~~ | ~~ASAP~~ | Done - Completes Action Item 14/1-1 |
| ~~14/1-7~~ | **~~Action:~~** ~~Requested:~~ ~~a) all GISCs to implement the set membership in the headers of items returned in response to the GetRecord requests; and~~ ~~b) each GISC to make sure that all the sets include all the records, especially records that have not belonged to any operational GISC.~~ | ~~GISCs~~ | ~~ASAP~~ | ~~Ongoing~~Done. Normal Activity |
| ~~14/1-8~~ | **~~Decision:~~** ~~Agreed to minimize the synchronization failure by following two practical rules:~~ ~~a) avoid using identifiers with only case difference as the primary rule,~~ ~~b) if there is no way other than using identifiers with only case difference, delete old records explicitly (by issuing OAI deleted message), before adding new records~~ | ~~GISCs~~ | ~~ASAP~~ | ~~Ongoing~~Done. Normal Activity |
| ~~14/1-9~~ | **~~Action:~~** ~~Agreed:~~~~a) That all harvesters need to be able to harvest records even with default namespace declarations;~~ ~~b) To encourage metadata creators to avoid using default namespace declaration.~~ | ~~GISCs~~ | ~~ASAP~~ | ~~Ongoing~~ Done. Normal Activity |
| ~~14/1-10~~ | **~~Action:~~** ~~Urged the GISCs to fix inaccurate datestamps in OAI headers and selective harvesting arguments: “until” and “from”, by the next ET-WISC meeting~~ | ~~GISCs~~ | ~~By next ET-WISC meeting~~ | ~~To be~~ done - See new action item 15/1-10 |
| 14/1-11 | **Action:** Agreed to use the ET-WISC internal forum (<http://www.wmo.int/pages/prog/www/WIS/wiswiki/tiki-view_forum.php?forumId=12>) to discuss issues. | TT-GISC | ~~ASAP~~ Leave on agenda | Forum created, now need relevant usage. Ongoing |
| 14/1-12 | **Action:** a) Requested ET-CTS, while investigating cloud computing solutions, to address: legal issues of countries using storage outside of nation; - political barriers to one country using a service managed by another; and data access policy. b) The chair suggested that once ET-CTS has considered this document from a CTS perspective, it is recommended that at least a couple of GISCs experiment further with this concept. c) TT-GISC members to participate in Cloud project | a) ET-CTS chair,b) TT-GISC chair. c) Participating GISCs | a) March 2014b) When convenient c) report back to next TT-GISC meeting | ~~To be done~~a) & b) both Done – Cloud project in progressC) new |
| 14/1-13 | **Recommendation:** Agreed that detailed monitoring would be at the GISC level, while only the common holding needs to be monitored globally. Thus all GISCs should meet the basic requirement set by monitoring a) The number of core Cache updates in the last 24 hours and b) 24 hour input volume and c) number of items in the complete cache, plus the status of the common holding (core) component. Each GISC is encouraged to establish more detailed monitoring for its own quality assurance process. (See also action 14/1-3) d) TT-GISC maintain close liaison with monitoring team | ~~As per action 14/1-3~~Remy as project lead and Yasu as technical lead. Participating GISCs project focal points | ~~As per action 14/1-3~~Leave on agenda | As per action 14/1-3 Current project with Remy and Weiqing as project leads and Yasu as technical lead and to report back to TT-GISC. |
| 14/1-14 | **Action:** Agreed to:a) the need for GISC agreement making processes necessary to manage multilateral GISC issues.b) establish a sub team to define TOR and working practices to report back to TT-GISC on recommended procedures for approving inclusion of data in GISC core cache, and similar decisions, so it can be reported to ET-WISC and ICT-ISS. c) need to provide TT-GISC and TT-DC opinions to ITT-WIS | Japan(lead), USA,Germany, France,UK, ~~and~~ Russian Fed and Chair TT-DC | ~~June 2014~~CBS requested ICT-ISS establish ITT-WIS to look at governance.Leave on agenda | a&b ~~to be~~ Done – underway Note new part C added in 2015 meeting |
| 14/1-15 | **Action:** Meetinga) confirmed file format of 24h cache to be full meteorological bulletin as in report of ET-WISC meeting, 2013. b) encouraged all GISCs to use the full “Meteorological bulletin” as default representation of GTS-bulletin data instances | GISCs | ~~ASAP~~Leave on agenda | Ongoing,TT-GISC still has some concerns on this issue |
| 14/1-16 | **Action:** Establish a method by which access to a GISC cache is reviewed/audited.  | Germany, France,UK (lead),and Japan | ~~Next TT-GISC meeting~~ Leave on agenda | ~~Not started~~ Noted new WMO\_DistirbutionScopeCode addresses cache holding. In addition CMA paper on monitoring Cache (Doc35) to be passed to Monitoring Team. |
| 14/1-17 | **Action:** TT-GISC recommended:a) GISCs should agree on a single standard to facilitate user federation;b) Establish group to investigate, including establishing basic use casesc) Confirm elements needed to be shared. | USA, Germany, France (Lead), Japan, China,, Australia, UK | Leave on agenda Report back to TT-GISC ~~by 2015 (prior Cg 17)~~ | To be done |
| ~~14/1-18~~ | **~~Decision:~~** ~~agreed~~ ~~a) on the proposed GISC backup procedures in~~ [~~Appendix D, Annex to 9.1~~](#_Annex_to_9.1:) ~~to this report~~~~b) not to include metadata management in GISC backup, and~~ ~~c) not to exchange or transfer metadata management privilege for backup purposes~~~~d) If there is a need to exchange user information, proper security measures should be taken based on the agreement on the two GISCs.~~ | ~~GISCs~~ | ~~ASAP~~ | ~~To be~~ Done. See WIS guide updates in CBS Ext(2014) report |
| ~~14/1-19~~ | **~~Recommendation:~~** ~~The meeting agreed that:~~~~a) The terms for “~~*~~GISC Registered User~~*~~” should be included in the Manual on WIS, and that the paragraph 3.9.2 be updated to include “~~*~~In addition, GISCs are encouraged to, where feasible, provide backup for registered GISC users that are not included within the mandatory backup procedures for NCs and DCPCs within the GISCs AMDCN~~*~~.~~~~b) The procedure in~~ [~~Appendix D, Annex to 9.3~~](#_Annex_to_9.3) ~~for NCs and DCPCs changing their principal GISC for inclusion in the Guide to the WIS (WMO No 1061)~~ | ~~Secretariat and ET-WISC.~~ | ~~April 2014~~ | ~~To be~~ Done – See WIS guide updates in CBS report |
| 14/1-20 | **Recommendation:** TT-GISCa) agreed that GISC working arrangements, including recommended practices from TT-GISC, should be recorded in an easily maintained Operations Guide to GISCs (possibly a wiki)~~b) proposed that~~ [~~Appendix D, Annex to 9.2~~](#_Annex_to_9.2) ~~should be included in a GISC operating guide.~~ | TT-GISC | Leave on agenda. Chair add to action plan prior to next meeting | ~~To be done~~(a) Wiki part not done. (b) Completed. See WIS guide updates in CBS report |
| 14/1-21 | **Recommendation:** TT-GISC recommends that WMO be registered as a DCPC with a principal GISC of Toulouse. | Secretariat and ET-WISC. | ~~April 2014~~ Leave on agenda | ~~To be done~~CBS approved, Meteo-France agreed to be Principal GISC, WMO still working out internal processes through Library |
| 14/1-22 | **Action:** TT-GISC:a) Agreed that there was a need for a standard format and method along the lines proposed by GISC Pretoria and described in Appendix D, Annex to 9.4. b) Requested France and Germany to explore this issue further to prepare a report to TT-GISC with an aim to including the details in the GISC Practices Guide | France and Germany | ~~June 2014~~Leave on agenda | ~~To be done~~ICT-ISS reviewed the form and recommendations of the TT-GISC and they asked that it be generalized. |
| 15/1-01 | Requested GISCs that were unable to report to TT-GISC 2015, to still provide status reports  | Jeddah, New Dehli, and Tehran. | ASAP  | (Ref:Para 4) |
| 15/1-02 | Chair to forward Doc19 to the WIS monitoring team | Chair | ASAP | (Ref:Para 30) |
| 15/1-03 | GISCs are to investigate if they are able to generate Vol C1 or if work is being done within their organization | GISCs | GISCs to report back on issues and status at next meeting | (Ref:Para 32) |
| 15/1-04 | GISCs should implement a training environment along the lines in WDoc3r1. | GISCs | GISCs to report back on issues and status at next meeting | (Ref:Para 39) |
| 15/1-05 | Investigate inclusion of regional networks on dynamic WIS monitoring diagram using information in existing JSON files. | GISC Brasilia | Through monitoring Team, report back to next TT-GISC | (Ref:Para 40) |
| 15/1-06 | a) Ask Monitoring Team to maintain pilot for GISCs to monitor and to investigate inclusion of some NCs.b) All GISCs are encouraged to 1) provide JSON files, and encouraged to include some NC/DCPC data.2) monitor the three WIS Common Dashboards.c) Monitoring team to provide a demonstration to CBS-16 | Chair,GISCs, Monitoring Team | Monitoring team and GISCs to report back on issues and status at next meeting | (Ref:Para 45) |
| 15/1-07 | Chair to forward Doc29 to IPET-MDRD | Chair | ASAP | (Ref:Para 51) |
| 15/1-08 | Noting closure of 14/1-10 and Doc(15) from DWD. Request DWD to clarify what still needs to be done regarding OAI timestamps and ListIdentifier. | DWD (Markus & Bernd) | Before next meeting of TT-GISC | (Ref:Para 53) |
| 15/1-09 | GISCs to check their arrangements for interoperability with GEOSS in enabling finding GEOSS data and products through WIS. | GISCs | GISCs to report back on issues and status at next meeting | (Ref:Para 59) |
| 15/1-10 | a) Sub team on core cache to review Doc09 taking into consideration the new cache me flag. b) Chair to forward updated Doc09 to ITT-WIS, ET-WISC, etc.c) GISCs investigate the difference between the bulletins on GTS in their area of responsibility and WIS GTS metadata provided by GISCs as identified in Doc35.d) CMA agreed to upload the raw data sets to assist GISCs in their analysise) Chair to forward Doc14 to IPETR-MDRD and Doc35 to the WIS monitoring team | a) Cache sub team b) Chairc) GISCsd) Ms Zhue) Chair | a) ASAPb) ASAPc) ASAPd) Donee) ASAP | (Ref:Para 62-65) |
| 15/1-11 | GISCs to investigate and if possible implement new data policy categories to account for NoLimitation, including treatment of empty policy field. See [http://wis.smo.int/page=ManualWIS](http://wis.smo.int/page%3DManualWIS) 19 May 2015 reflecting CBS fast track approval of WIS Metadata. | GISCs | GISCs to report back on issues and status at next meeting | (Ref:Para 73) |
| 15/1-12 | a) GISCs to investigate and if possible implement WMO\_DistributionScopeCode1. Implement code
2. Encouraged GISCs to review in consultation with data providers existing metadata to include the globalavailable, cache or regional or source flag and batch update metadata.

b) Chair to advise CBS through ET-WISC/ICT-ISS of the urgent need for ITT-WIS to provide guidance | a) GISCsb) Chair | a) GISCs to report back on issues and status at next meetingb) ASAP | (Ref:Para 73) |
| 15/1-13 | TT-GISC invited the author to review Doc16 and submit to IPET-MDRD | M.Heene | ASAP | (Ref:Para 74) |
| 15/1-14 | Provide information to Secretariat in order to populate and update GISC Backup registry Appendix D item D2 (Working Doc 07) relating to GISC data collection and distribution in their AoR. | GISCs / Secretariat | Before next meeting of TT-GISC | (Ref:Para 79) |
| 15/1-15 | a) Review WIS related components of the Draft DBNet Guide ([Doc08](http://wis.wmo.int/File%3D1811)), provide any feedback to the secretariat and to b) escalate the document to ET-WISC and other OPAG-ISS expert teams for similar review and final consideration by CBS-16 | a) Participantsb) Chair & Secretariat | a) ASAPb)  | (Ref:Para 82) |
| 15/1-16 | Next meeting tentatively Melbourne in the week of 18 April 2106. Chair to confirm after consultation with Australia and Chair ET-WISC. | Chair & Secretariat | ASAP | (Ref:Para 84) |
|  |  |  |  |  |

# Appendix D – Annexes to Paragraphs

## D1 - Annex to Section 3.2: Training Land (Para 37 to 39)

### Recommendation

The team would like to make the following recommendation pertaining to the content and process of training users within the GISCs area of responsibility using the operational GISC environment.

### Functional Architecture

The training material should cover the following components of the functional architecture (Figure 1) of the GISC software:

1. User Registration: the trainee should be instructed on the registration process of a new user,and the authentication process of a registered user. Specifically, the trainee should be instructed on:
	1. The process of validating a registration request from a new user.
	2. The process of obtaining permission from the WIS Focal Point of the National Centre the user is a member of.
	3. The process of how the new user is authorized and registered in the GISC software by the GISC controller.
	4. The authentication process a registered user must go through in order to make use of the registered user features.
2. **Registered User Interface:** the trainee should be instructed on how to use the core functionalities the GISC software makes available to registered users. Specifically, the trainee should be instructed on:
	1. The process of searching the metadata catalogue.
	2. The process of managing the user's profile (e.g changing their email address or password).
	3. The process of obtaining products in an adhoc manner. At a minimum, the trainee should be able to extract data and download or have it delivered to them as an email. Other forms of adhoc delivery can be shown to the trainee if they are supported.
	4. The process of creating a subscription. This should include the process of creating a new subscription, including how to specify the mode of delivery (e.g. email, ftp, other), how to manage the subscriptions once created, and how to disable or delete their subscription. It should include email subscription at a minimum.
3. **Metadata Authoring:** the trainee should be instructed on how to create, modify, publish and delete metadata using the authoring facilities available from the GISC software. Specifically, the trainee should be instructed on:
	1. The process of creating a new metadata record, including how to specify a suitable URN.
	2. The process of editing metadata created by or permitted to be edited by the user.
	3. The process of pushing a metadata created by or permitted to be published by the user.
	4. The process of removing metadata created by or permitted to be removed by the user.
4. **Constraints and Pre-Conditions**

The team recommends that the use of a non-operational environment for training if such an environment is available and closely resembles of the operational environment, including the contents or the metadata catalogue and cache. In cases where no suitable non-operational environment is available, the team recommends that any training conducted on the operational GISC must satisfy the following constraints and pre-conditions (See Figure 2):

1. Any metadata created as part of the training should be placed in a metadata set dedicated for testing purposes which is separate from the set holding the GISCs operational metadata. The metadata within this set should be searchable using the GISCs search facilities, but should not be synchronized across to other GISCs via the OAI-PMH endpoint.
2. Any metadata created as part of the training should be associable to non-operational test products in order to demonstrate the association between metadata and data. This association can be as simple as referencing flat files hosted on a HTTP or FTP server that is referenced using the resource location field within the metadata. The test products should be retrievable by the trainee using ad hoc product requests.
3. Any user account created for trainees for the purpose of editing metadata should be created within a temporary test organization or domain. This organization must restrict the trainee's right to create, modify, publish or remove metadata to only that metadata that has been created as part of the training and that belongs to the test organization.
4. At the conclusion of the training session or at an agreed time afterwards, any new metadata, products or user accounts created as part of the training should be zeroed or removed using the administration features available to the GISC controller.

### Guidelines

The team makes the following additional recommendations on training guidelines in order to satisfy the constraints and pre-conditions listed in the previous section:

1. **Use of test metadata URNs:** In order to identify temporary metadata created during the training session, it is suggested that such metadata should be clearly identified as test metadata. One approach for doing so would be to set the authority of the metadata URN to the reverse DNS of the GISC with the suffix "test". For example, test metadata belonging to the Bureau of Meteorology will have the authority "au.gov.bom.test". This permits the use of any local identifier within this authority as required during the training session (e.g. "urn:x-wmo:md:au.gov.bom.test::TEST01")



Figure 1 Functional Architecture



Figure 2 Constraints

.

## D2 - Annex to Section 9 Para 79



Note that in the above diagram, each cell contains more information than just the words shown. The full spreadsheet is available from TT-GISC 2015 Working Doc 07 ([WDoc07](http://wis.wmo.int/file%3D1913)) - [http://wis.wmo.int/file=1913](http://wis.wmo.int/file%3D1913)

# Appendix E – References

[1] ET-WISC/2014-Final Report

[2] Manual on the WIS (WMO No 1060)

[3] Guide to the WIS (WMO No 1061)

[4] CBS Ext(2014) Report (WMO No 1140)

[5] Cg-17 Report (WMO No 1157)

[6] TT-GISC/2014-Final Report

---------------------------------------

1. WIS fast track changes [http://wis.wmo.int/file=1415](http://wis.wmo.int/file%3D1415) [↑](#footnote-ref-1)
2. CBS Ext(2014) Report - <http://library.wmo.int/opac/index.php?lvl=notice_display&id=17160> [↑](#footnote-ref-2)