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# Final Report of the Meeting of the Expert Team on WIS Centres Task Team on GISCs (TT-GISC) 18-20 September 2018



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# FINAL REPORT OF THE MEETING OF THE EXPERT TEAM ON WIS CENTRES TASK TEAM ON GISCS (TT-GISC)

**18-20 SEPTEMBER 2018**

## 1 Organization of the meeting

### 1.1 WelcomeAddress

1. The CBS Task Team on Global Information System Centres met in Casablanca, Morocco, hosted by Direction de la MétéorologieNationale, Morocco. The meeting page is <https://wis.wmo.int/page=tt-gisc2018>[[1]](#endnote-1) .
2. Mr Kenji Tsunoda (chair of TT-GISC) opened the meeting at 0900. He welcomed participants noting that WIS began operations in January 2012. He thanked Mr Hassan Haddouch and the Direction de la Météorologie Nationale for hosting the meeting
3. Mr Hassan Haddouch (Chief, National Centre for Meteorological Research and Information Systems, Morocco) welcomed the participants. He thanked Mr Tsunoda for chairing the meeting. He also thanked the GISC representatives for their participation in the meeting, noting the important role of GISCs and the need for collaboration to ensure the effective operations of WIS.
4. Mr David Thomas thanked the Mr Haddouch and his staff for arranging the facilities and asked Mr Haddouch to pass on the appreciation of the Secretariat and participants to the Permanent Representative to WMO for Morocco.
5. The chair invited participants to introduce themselves in a tour-du-table. A list of participants is in [Annex 1](#_Annex_2._Participants).

### 1.2 Adoption of agenda

1. The meeting agenda was introduced by the chair and accepted by the meeting (see [Annex 2](#_Annex_2_Draft)).

### 1.3 Working arrangements

1. Mr Haddouch described local working arrangements. TT-GISC agreed the work plan as contained in [Annex 3](#_Annex_3_Working).

### 1.4 Background from of EC-70 and relevant TCs, ETs

1. The secretariat briefed the meeting on the outcome of CBS Teco 2018, plans for the consultation process to be completed at the end of 2018. He also briefed the meeting on the WIS related resolutions, decisions and recommendations of the Seventeenth Session of Executive Council[[2]](#endnote-2).
2. The meeting noted that several items relating to WIS were considered at CBS Teco2108. As CBS Teco was not an intergovernmental session, no decisions or recommendations could be made to the following Executive Council (EC-70) or to the next Congress (Cg18), although the President of CBS could include certain issues in his report to EC-70 that were of operational importance, or had specifically been requested by previous Executive Council sessions. However, many issues were discussed at Teco, including a side meeting on the Cache in the Cloud project looking for a consolidated view among the Permanent Representatives on how they wished to proceed with the project. CBS management group met following CBS Teco2018 and decided how to address all the issues that either needed attention of EC-70 or Cg-18. The report of the CBS Management Group is online at <https://wis.wmo.int/file=4290>[[3]](#endnote-3). OPAG ISS draft decisions and recommendations are listed in Annex V to that report. These included basically three decision types: 1) To approve or endorse the recommendation of OPAG-ISS; 2) To make a recommendation to EC-70; or 3) To recommend for Cg-18 agenda and consultation with CBS members.
3. The meeting noted the updates to the Manual on GTS (Res 21 (EC-70)) showing the RTH area of responsibilities and principal GISC is now accepted following its rejection at EC-69.
4. It noted Res 22 (EC-70) updating list of WIS centres, and Res 23 (EC-70) requesting CBS, in collaboration with the private sector and involving those Members that currently operate GISCs, to analyze the data-exchange needs for WIS to provide reliable data access to all users considering the availability of new technologies, architectures and communication techniques, including cloud-based solutions, web services, application programming interfaces, modern messaging protocols, and the like, and to study how they would support or contribute to the evolution to WIS 2.0, and report back to Cg-18. It further noted that Decision 18 (EC-70) had somewhat rejected the implementation approach of WIS 2.0 and tasked CBS to update the strategy in consultation with Members so that Cg-18 can consider WIS 2.0 and in turn task EC to oversee the planning and implementation of WIS 2.0.
5. The development of WIS 2.0 is to be led by TT-eWIS but all the GISCs need to ensure that they participate in the process.
6. The meeting noted Decision 17 (EC-70) listed the activities that need to be addressed as a part of the CBS consultation later in 2018, and presented to Cg-18. (A copy of the table is provided in [Annex 4](#_Annex_4._–) to this report.) These activities included several issues directly affecting GISCs including the guidelines for audit process, security incident procedures, GISC watch, escalation procedures for issues not able to be resolved between GISCs, and other material to be included in the WIS manual and guides supporting operational procedures of the GISCs.
7. TT-GISC were concerned that although Decision 19 (EC-70) kept open the option for WMO secretariat to have a role in coordinating (but not operating) shared services in support to Members operations, EC-70 failed to endorse the pilot implementation of cloud services for the sharing of data and metadata between GICSs. Several participants noted that the prototypes and studies had been successful. However, there was some confusion about how GISCs were to proceed under Decision 20 (EC-70) which noted that “a pilot capability will be hosted and managed by a Member or partner organization”. The meeting noted that Japan was working on cloud solutions for national purposes and that Morocco was also investigating similar technologies.
8. TT-GISC decided to hold a special evening session on the impact of Decision 20 (EC-70) in order to work out how best to proceed.
9. Following the additional session meeting, TT-GISC agreed that all GISCs should be ready to collaborate with GISC Tokyo in populating Tokyo’s cache and metadata catalogue in their cloud solution.
10. The meeting considered that, subject to revision of GISC Tokyo’s project plan, there might be an option of using the JMA cloud service as another prototype involving all GISCs to try and use for the exchange of data between GISCs. Some participants expressed concern about having a single presence for a cloud solution which might induce transmission delays when compared to the pilot project proposed by OPAG-ISS that had three potential presences.
11. Japan (Tsunoda) will arrange for their project plan to be translated into English and make available to TT-GICS for discussion, to be led by the chair.

## 2 Review TT-GISC ToR and Action Plan

### 2.1 Structure and terms of reference

1. The chair briefly highlighted the terms of reference[[4]](#endnote-4) and membership[[5]](#endnote-5) of TT-GISC. The meeting agreed to come back to these later if needed, however, it noted that the proposed changes to the Manual on WIS strengthen the requirements for all GISCs to be actively involved in TT-GISC annual collaboration meetings such as this one.

### 2.2 Action Plan: Annex 7 (table B) Final report of TT-GISC-2016

1. The chair briefed the meeting relating to the TT-GISC action plan as listed in the final report of ET-WISC 2016[[6]](#endnote-6). Action Plans in Annex 7, Table B were referenced by Team and sequence number e.g. TT-GISC/01. An aim of this meeting will be to review the past plans, actions and update accordingly. See agenda item 12.

### 2.3 Action Items: Annex 6 (table A, B) Final report of TT-GISC-2016

1. Annex 6 of the 2016 report covered action items from previous meetings to the TT-GISC-2016. Actions were referenced by the year then the meeting number, and action item e.g. Item 2 from the first meeting of 2014 is referenced as 14/1-2. Table B of Annex 6 was the same, only it related to new action items for 2016.
2. TT-GISC considered the actions at several points during the session and updated in the closing session. The updated list of action items is in [Annex 5](#_Annex_5._–) to this report.
3. Most actions were addressed under the relevant agenda item, although some such as the following originated during this session. In relation to action15/1-9, on generating Vol C1 from GISC catalogue, TT-GISC recommend TT-DC hold a workshop on replacement of Vol C1 notification processes, noting that needs to address non TTAAii messages.
4. Pass the issue on generating Vol C1 from GISC Catalogue to TT-DC and report back to TT-GISC and recommend to ET-WISC

## 3 GISC Status

### 3.1 Report from all GISCs

1. Each GISCs provided a status report. The reports are available online from the meeting page[i]. Each report was based on the style guide in the GISC Operations page ([wis.wmo.int/page=TT-GISC-ops](file:///C:/temp%20DT/Downloads%20C/wis.wmo.int/page=TT-GISC-ops)[[7]](#endnote-7))

#### GISC Beijing

1. GISC Beijing reported that during 2018, GISC Beijing provided had onsite training in neighbouring NMHS, including guidance for WIS implementation. GISC Beijing planned to continue capacity building activities for their AoR in 2019. It reported that GISC Beijing published upper air sounding data for YOPP, also on both GTS and WIS in 2018. See the full GISC report online at <http://wis.wmo.int/file=4460>[[8]](#endnote-8) .

#### GISC Casablanca

1. GISC Casablanca reported that has already established contact with many of the 37 centres in their Area of Responsibility to discuss the various possible means to connect these centres with their main GISC. Most connections will pass through the internet (Capo Verde, Guinea, Senegal) while some others will be connected via the RMDCN network (Exp: Tunisia). They are running a survey aiming to understand each centre’s capacities as well as the means it has available to connect to GISC Casablanca. See the full GISC report online at <http://wis.wmo.int/file=4446>

#### GISC Exeter

1. In addition to the core elements GISC Exeter reported that it took part in the pilot project to synchronize GISC cache through the cloud. Acting as proxy for Pretoria & Washington. It also noted that it undertook Metadata and User training in June 2017, at Météo-France headquarters in Toulouse. See their full report online at [[9]](#endnote-9)<http://wis.wmo.int/file=4378>[[[10]](#endnote-10)](http://wis.wmo.int/file=4378).

#### GISC Tehran

1. GISC Tehran had planned to report via webex but was unable to do so. However, their full report is online at <http://wis.wmo.int/file=4438>[[11]](#endnote-11). The meeting noted that GISC Tehran currently cannot be connected to the RMDCN due to sanctions. IT further noted that GISC Tehran was planning to set up OpenWIS software prior to this meeting to replace their current system.

#### GISC Melbourne

1. GISC Melbourne reported that WIS/GTS operation of GISC Melbourne and centres in its Area of Responsibility had been functioning as expected. See their full report online at <http://wis.wmo.int/file=4424>[[12]](#endnote-12).

#### GISC Offenbach

1. GISC Offenbach reported that the awareness of WIS in GISC Offenbach’s Area of Responsibility is good. Workshops to improve the usage of GISC Subscriptions over GTS message switching are planned. GISC Offenbach established direct connections with GISC Washington and GISC Casablanca. See their full report online at <http://wis.wmo.int/file=4340>[[13]](#endnote-13).

#### GISC Moscow

1. GISC Moscow made a GISC status report in accordance with the structure and content accepted by ET-WISC/TT-GISC 2016, aiming to continue WIS implementation at the centre and in its area of responsibility. See their full report online at <http://wis.wmo.int/file=4364>[[14]](#endnote-14).

#### GSIC Washington

1. GISC Washington reported that the awareness of WIS in GISC Washington’s Area of Responsibility is moderate. Full test of back-up with GISC Brasilia is planned. GISC Washington established direct connections with GISC Offenbach. See their full report online at <http://wis.wmo.int/file=4454>[[15]](#endnote-15)

#### GISC Jeddah

1. GISC Jeddah, noting that they have had some operational issues, reported they were addressing these issues as well as training and WIS monitoring. They are also working on establishing a back up GISC. See their full report online at <http://wis.wmo.int/file=4462>[[16]](#endnote-16)

#### GISC Seoul

1. GISC Seoul is directly exchanging cache with 6 GISCs. A remote backup GISC was implemented as a role of disaster recovery. GISC Seoul is still working on GISC backup procedure and discussing with GISC New Delhi. For WIS capacity building, GISC Seoul has performed annual WIS training course jointly with ICT training course for WMO members in RTC-Korea. As result of WIS and GCI interoperability activities, GISC Seoul provides GEOSS metadata sets and GEOSS SRU server for other GISCs to harvest WIS compliant discovery metadata from GEO-DAB. See their full report online at <http://wis.wmo.int/file=4448>[[17]](#endnote-17)

#### GISC Tokyo

1. Shuichi Ikeda reported on the current status of GISC Tokyo. GISC Tokyo system still has network performance issues. Tokyo is seeking a way to solve issues. If other GISCs face with problems caused by GISC Tokyo performance issues, please feel free to contact us ([wis-jma@met.kishou.go.jp](mailto:wis-jma@met.kishou.go.jp)). See their full report online at [[18]](#endnote-18)<http://wis.wmo.int/file=4366>[[[19]](#endnote-19)](http://wis.wmo.int/file=4366).

#### GISC New Delhi

1. Dr. S. L. Singh presented the Status Report of GISC New Delhi. GISC New Delhi has a plan to provide training to NCs under its Area of Responsibility. GISC New Delhi is harvesting Metadata sets of 12 GISCs and shall try to include harvesting the metadata sets from Casablanca and Washington. It has plans to establish IPVPN over internet / RMDCN link with other centres. GISC Backup arrangement has been planned with GISC Seoul. GISC New Delhi has planned implementation of JSON file provisioning through its OEM (M/s COROBOR) for WMO Common Dashboard. IMD has joined OpenWIS Association as Strategic Partner for implementation of Open WIS at DRC of GISC New Delhi. GISC New Delhi faced link issue with most of the centres due to some technical issue during July-August 2018 due to intermittent problem in hardware as well as link provider end. The hardware got rectified on 14th August 2018. Such problem was also noted by GISC watch. Ticket No. 0000025 - GISC New Delhi portal off since 7th August (resolved 14th August 2018). GISC New Delhi is planning for software updates through its OEM. See their full report online at [[20]](#endnote-20)<http://wis.wmo.int/file=4374>[[[21]](#endnote-21)](http://wis.wmo.int/file=4374).

#### GISC Toulouse

1. GISC Toulouse reported that it operates properly. The main activity for the last months, for GISC Toulouse was dedicated on WIS catalogue metadata and will continue for next year. A new Cyclone Data centre DCPC, La Réunion RSMC (<http://dcpc-cyclone.meteo.fr> ) is now online, and register through GISC Toulouse. The excel2wis opensource tool which create XML WMO Core metadata from an excel document is now available from Python library (<https://pypi.org/project/excel2wisxml/>) and still available for developers contributions on github. See their full report online at <http://wis.wmo.int/file=4352>[[22]](#endnote-22)

#### GISC Pretoria

1. GISC Pretoria report that they experienced an outage in their RMDCN connection between May and August. The noted that they have had to manage a move of their office (HQ) in April and that they made connections with UK Met Office via the internet during the move. See their full report online at <http://wis.wmo.int/file=4756>[[23]](#endnote-23).

#### GISC Brasília

1. GISC Brasilia was unable to attend the meeting and did not provide a report.

#### Interim Metadata Management Service (WIMMS)

1. GISC Tokyo provided a status report on WIS Unassociated Metadata held by GISC Tokyo[[24]](#endnote-24). The meeting reviewed the status WIS-UNASSOCIATED dataset and confirmed that it’s necessary to move forward with metadata migration from WIS-UNASSOCIATED promptly.
2. The meeting requested involved GISCs to migrate remaining metadata records from WIS-UNASSOCIATED to principal GISC’s dataset.
3. The meeting requested GISC Tokyo to text the metadata migration procedure including necessary actions at all GISCs, to be available on the GISC-Ops web page.

### 3.2 Update GISC Backup matrix

1. The meeting reviewed the GISC BackUp Matrix as provided by the chair. See online at [[25]](#endnote-25)<http://wis.wmo.int/file=4436>[[[26]](#endnote-26)](http://wis.wmo.int/file=4436).
2. The meeting agreed to update the backup diagrams in the above report based on GISC status reports and for the chair to review Ernico’s summary to be included in the GISC operations page.
3. Need to get Enrico’s table

### 3.3 Update GISC-GISC connectivity matrix

1. The meeting reviewed the GISC Connectivity Matrix as provided by the chair. See online at <http://wis.wmo.int/file=4430>. The participants noted that there were not significant changes from November 2017.The chair highlighted the need for GISCs to establish a way to allocate bandwidth to WMO data exchange, if they share the internet bandwidth with other purposes e.g. web browsing, email and etc.
2. The meeting requested all GISCs to update the matrix and to provide their details to the Secretariat as soon as possible
3. The chair will compile the updated results and pass the GISC connectivity matrix to the Secretariat to put in the GISC Operations Pages.

## 4 Work packages

### 4.1 Review structure and membership

1. No changes.

### 4.2. Progress report, WP-2: User Interface (Lead: Jan)

1. Mr JánOsuský presented his report on how to improve user experience by making GISCs Search Engine Friendly[[27]](#endnote-27)and a review of GISCs’ use of robots supporting tools and sitemaps[[28]](#endnote-28).He highlighted that search engines use sophisticated crawlers that are getting better on accessing dynamic content, however if a product description (metadata) is made available only as a response to a complex search query it may remain invisible to the search engines. Thus, WIS centres can improve visibility of DAR catalogue by having pages with individual product descriptions accessible through URLs (links) that can be published at other page or sitemap.
2. The meeting noted that most GISCs appeared not to have adopted the decisions of the last TT-GISC meeting to add robots.txt or sitemap to their sites, and that many of the participants were still unsure of how to proceed with enabling this functionality. Mr Osuský explained and demonstrated how these tools can make the contents of a GISC catalogue discoverable and accessible to search engine crawlers.
3. An example of implementation can be seen at GISC Brasilia. At <http://gisc.inmet.gov.br/robots.txt> it publishes links to sitemaps (e.g. <http://gisc.inmet.gov.br/sitemap_1.txt> ) that contain links to individual pages, such as (<http://gisc.inmet.gov.br/dw/product.xhtml?PID=urn:x-wmo:md:int.wmo.wis::CSBZ01SBBR>).
4. Mr Osuský will provide further information to TT-GISC on how to implement suitable sitemaps on their Members’ public web‎‎ and GISC Portals.
5. GISCs are to implement these measures as soon as possible and report back to TT-GISC on implementation.
6. The meeting further noted how using extra tags or attributes of product descriptions from shema.org[[29]](#endnote-29) could further support the search engine crawlers and that GISC should apply the above search engine optimizations related to the presentation of the DAR catalogue. It would be good if at least one GISC implemented this as soon as possible, however, it would also be good to decide on a standard mapping
7. WP 2 should include identifying a standard mapping of the properties between WMO profile and schema.org and report back to TT-GISC.

### 4.3. Progress report, WP-3: User Federation (Lead: Jose Mauro)

1. GISC Brasilia was unable to attend the meeting; however, the secretariat reported that progress has been made in GISC Brasilia’s collaboration with their local NREN, with support of GEANT. The meeting noted that this work was being done through GEO tasks, and is the only pilot project addressing user federation, that although included in WIS technical specifications was excluded in the initial rollout of WIS.

### 4.4 Progress report, WP-5: Metadata Consistency (Lead: Benjamin)

1. Mr Benjamin Saclier presented the report on Metadata Synchronization[[30]](#endnote-30) prepared under Work Package 5.
2. TT-GISC2018 recommended updating the WIS Guide WMO 1061, “Annex To Paragraph 7.5.1: Guidelines For Migrating Metadata Records From One GISC To Another” by adding in section “2. Operational guidelines” the two new sub-sections.as described in [Annex 6](#_Annex_6_–) to this report.
3. The secretariat advised that although the proposed changes would need to go to ET-WISC and OPAG-ISS through normal processes, GISCs could add this to their operations pages and take up the practice immediately.
4. The meeting agreed to review the WIS catalogue synchronization at the next TT-GISC (i.e. 2019).
5. If the recommendations are implemented and do not fix metadata consistency, then WP 5 propose to follow up on their “Proposition 1 of Centralization”. Such action would consider an implementation of a pilot for a “WIS CATALOGUE AUTORITHY”, hosted by a GISC or on a cloud environment.

### 4.5. Progress report, WP-6: Next Step WIS Monitoring (Lead: Weiqing)

1. WP 6 was discussed under Agenda Item 5 below.

### 4.6. Progress report, WP-7: Capacity Development (Lead: Sungsoo)

1. The meeting reviewed the report on Capacity Development[[31]](#endnote-31). It noted the gaps of national knowledge of WIS among Members from the WMO Mid-Term Performance Assessment Report 2016-2017 and recognized that common training materials are required to fill these gaps and to encourage WIS competencies of members in proper method. GISCs have developed and provided training courses with reference to the seven competencies from the WMO Information System Training and Learning Guide. The meeting recommended that “WIS Training Material”, shared repository for WIS training materials be created in wis-wiki and GISCs are collaborating in collecting its own materials to foster culture of compliance as a component of capacity development for WIS.
2. To develop common training materials to understand fundamentals of WIS, the methodology was discussed and next TT-GISC2019 will review the common training materials established by Work Package task members. The baseline of the materials is suggested by key learning resources from the Guide to the WIS and proposed scope of training materials are provided in the report on Capacity Development and replicated in [Annex 7](#_Annex_7_-).
3. The meeting agreed to the WP 7 work plan and to develop common training materials to the proposed scopes as listed in [Annex 7](#_Annex_7_-) of this report.
4. TT-GISC encouraged all GISCs to share their training material with the WP 7 team for the creation of a shared repository for review by TT-GISC2019.

## 5 WIS Monitoring

1. Six documents were considered under WIS monitoring agenda item. Four related specifically to WIS monitoring and to review the procedures. These included the Original WIS Monitoring Report[[32]](#endnote-32), GISC Watch summary[[33]](#endnote-33), GISC Tokyo Feedback on Monitoring[[34]](#endnote-34) and an update to GISC Watch Procedures[[35]](#endnote-35). Three other documents were related to the management of BUFR issues.

### GISC Watch

1. The meeting was informed that GISC Watch started from 1st May 2018, with 2 weeks roster for each GISC. The meeting noted the report summarising the GISCs feedback and reviewed the recommended updates to the [GISC Operations Page](https://wiswiki.wmo.int/TT-GISC-ops). It also noted the GISC Tokyo’s recommendation for GISCs to address the issues of redirection and port number considering as the URL of monitor.json files should not be a redirection and that operational centres should use the well-known ports.
2. The meeting noted the concern of Tokyo relating to HTTPS access between GISCs asked each GISC to confirm the status of access to other centre.
3. Having considered all the input and discussions, the TT-GISC agreed to the changes as listed in [Annex 8](#_Annex_8_–) of this report.
4. The changes in [Annex 8](#_Annex_8_–) should be made to the [GISC Operations Page](https://wiswiki.wmo.int/TT-GISC-ops) and to the [GISC Ticket System](http://www.inmet.gov.br/giscticket/).
5. The meeting noted a number of issues would require further investigation. In particular: The number of metadata records and the size of 24hr-cache are different among GISCs. If the difference is expected, what should be the criteria to report an issue? For example, we agree that number of metadata should not fluctuate dramatically from day to day. How big is the allowed fluctuation?

### Management of BUFR issues

1. TT-GISC recalled that their 2017 meeting decided that where problems in the encoding of upper air reports in BUFR occur (e.g. due to the migration from TAC to BUFR), the GISC affiliated with the originating centre shall liaise with originating centre to rectify the issues (D19/2017)
2. The Secretariat had shared this decision with the CBS Task Team on Upper Air BUFR (TT-UAB) that proposed a refined process for the management of BUFR upper air issues. The process would require a responsible GISC to take the task of facilitating the resolution of the issue by engaging with the data provider and managing the problem resolution. The GISC would utilise a common issue tracking system to register the status of the process and to communicate with the other parts. The issue tracking system would evolve as a valuable resource for when a new issue is encountered.
3. The meeting reviewed and agreed on a process based on TT-UAB recommendation as represented in the diagram in [Annex 9](#_ANNEX_9_-) or [online](https://cawemo.com/share/4d19c7a5-f86f-4168-b172-b60d397b67fa).
4. It further agreed to utilise the [GISC Ticket System](http://www.inmet.gov.br/giscticket/) to manage cases.

## 6 Time critical data delivery

1. The chair presented his report[[36]](#endnote-36) on time critical data delivery based on the Indian Ocean Tsunami Warning Service (IOTWS) communication test of 13 Dec 2017. TT-GISC noted that most messages through the GTS were delivered within 1-3 minutes, and that the Tsunami community were satisfied with this element.
2. However, the IOTWS also reported that the reception rate was only 74% and that four out of the twenty participating Nation Tsunami Warning Centres (NTWC) did not receive the messages via GTS. The meeting noted that it is important to establish/maintain all connections between GISC and centres in their AoR. Looking at sixteen out of twenty NTWCs that did receive test messages; their reception rate was 92%.
3. The meeting considered actions to improve reception rate, and requested all GISCs to check routing tables to deliver WEIO20DEMS, WEIO22WIIX, WEIO24AMMC to relevant centres in its AoR, and to make sure its connections to the centres before December 2018 (next IOTWS test).
4. The participants reviewed the details of the GTS delay and agreed that for WMO FTP, GISCs/RTHs should use urgent channel (CCCCnnnnnnnn.ua), and transmit the priority-1 message immediately (see para 5, page 158 Manual on the GTS).
5. TT-GISC recalled that an earlier requirement for GISCs was to develop the ability to monitor the transit of warnings in order to produce results as shown by the IOTWS monitoring. This was to be available for all types of warnings across WMO activity areas. However, this project is stalled so that the IOC tests remain a viable method of monitoring the performance of WIS for critical tsunami related warnings.
6. The meeting agreed to continue supporting the Tsunami warnings and related information delivery across all tsunami warning areas as well as the IOTWS.

## 7. Review TT-GISC Operations tools

1. TT-GISC reviewed two documents relating to support tools of the group. These related to the GISC-Ops-Web[[37]](#endnote-37) and the TT-GISC email group[[38]](#endnote-38).

### GISC Operations Page

1. The meeting noted that TT-GISC-2017 had agreed to certain inclusions, but some items are still empty. For example, GISC backup matrix. The matrix will be updated by TT-GISC2018, so it should be added after the TT-GISC2018.
2. Secretariat to add the updated GISC Backup Matrix to the GISC Operations Page.
3. The meeting thanked WMO secretariat maintaining the GISC-Ops page, and noted that it’s useful way to share extracted paragraphs of guides and non-regulatory materials for improved GISC operations. TT-GISC agreed that the materials to be added and some changes on the website as shown in the paper GISC-Ops-Web and replicated in [Annex 10](#_Annex_10_–) to this report.
4. Chair to review the text in [Annex 10](#_Annex_10_–) and update as required with track changes turned on and return to the secretariat to update the operations page accordingly.

### TT-GISC Email Groups

1. The meeting reviewed document “TT-GISC email group”. It noted that there were two distinct email groups.
2. The primary email group for TT-GISC is [cbs-wisc-tt-gisc@wmo.int](mailto:cbs-wisc-tt-gisc@wmo.int). This is an email group for the focal points of WMO Global Information System Centres (GISC), and includes members of the CBS Expert Team on WIS Centres' Task Team on GISCs. The email group consists mainly of individuals’ emails, although some GISCs have subscribed their operational GISC email alias to the group. Only members of the email group can send and receive emails to or from the group. Many individuals also subscribe secondary emails to this group, mostly where they are unable to associate their work email with G-Mail. The secretariat moderates this email group, including spam protection.
3. The second TT-GISC email group is [gisc-ops@wmo.int](mailto:gisc-ops@wmo.int). This email group is to exchange information between GISCs relating specifically to GISC Operations, including GISC Watch. This should be the primary email for announcing to other GISCs important planned changes such as new system configuration (e.g. change URL of OAI harvester) or for handing over the GISC Watch duty. The aim is for these messages to get to the operations centre (or help desk) of each GISC and to be monitored by staff on duty. Thus, subscribers to the group are primarily generic GISC email groups although some individuals have also subscribed. Each GISC can manage internally how emails received from this group are distributed among their staff. The secretariat and Chair moderate this email group and can approve submission from email addresses not registered in the group.
4. This list of generic GISC email addresses is maintained by the chair of TT-GISC who refers to these as the GISCs help desk email, although this is not really the case for all GISCs. The meeting noted that all GISCs have provided this contact information on their GISC portal and it can be used for 24/7 issues (need to take actions immediately), such as System/network trouble/outage.
5. The mailing lists, which were provided by WMO, are the useful tool to share the discussion among members. The meeting noted the some information are posted multiple mailing-lists (Cross posting), and need to have common usage for these communication tools.
6. The meeting agreed that the above usage should be available on GISC-Ops page (<https://wis.wmo.int/page=TT-GISC-ops>).

## 8. Review of the technical regulations and operational specifications

1. This item was covered under [agenda item 1.4 above](#_1.4_Background_from) on the discussion of EC70 and CBS Consultation. The meeting noted that the proposed updates to the GISC operations from this meeting may be considered for updates to the Guide to WIS at future CBS sessions.
2. The meeting noted the need to coordinate for drafting recommendations (amendments) of Technical Regulations and to submit these to ET-WISC (Next meeting of ET-WISC will be March 2019).
3. The meeting agreed to add a new item to the work plan, namely WP 8 “Technical Regulation updating” to be led by Weiqing Qu and support of Mark Francis, Benjamin Saclier, Jan Osusky, Kai-Thorsen Wirt, Li Xiang and Shuichi Ikeda.
4. The meeting established a new Work Package, WP-8 (Technical Regulation updating) to draft recommendations e.g. WIS monitoring (Tech-spec-15), Jason-Spec and so on.

## 9. Review Global data availability (if WMO analyzed the result of monitoring)

1. No papers were submitted on this topic at the time of the meeting.

## 10. Any Other Business

1. There was no other business submitted

## 11. Closure of the meeting

1. The chair reviewed the decisions and actions summarized below. He thanked the Direction de la MétéorologieNationale, Morocco for hosting the meeting and for the opportunity to visit GISC Casablanca. He thanked all participants for their contribution and wished all a safe and pleasant journey home.
2. The chair advised that the next meeting of TT-GISC will most likely be in Germany at GISC Offenbach, probably around September or October 2019.
3. The meeting closed at 1605 on Friday 1st July 2016.

# Action and Decision Summary

## Actions

[**A1** The development of WIS 2.0 is to be led by TT-eWIS but all the GISCs need to ensure that they participate in the process.](#_Toc536864302)

[**A2** TT-GISC decided to hold a special evening session on the impact of Decision 20 (EC-70) in order to work out how best to proceed.](#_Toc536864303)

[**A3** Japan (Tsunoda) will arrange for their project plan to be translated into English and make available to TT-GICS for discussion, to be led by the chair.](#_Toc536864304)

[**A4** Pass the issue on generating Vol C1 from GISC Catalogue to TT-DC and report back to TT-GISC and recommend to ET-WISC](#_Toc536864305)

[**A5** The meeting requested involved GISCs to migrate remaining metadata records from WIS-UNASSOCIATED to principal GISC’s dataset.](#_Toc536864306)

[**A6** The meeting requested GISC Tokyo to text the metadata migration procedure including necessary actions at all GISCs, to be available on the GISC-Ops web page.](#_Toc536864307)

[**A7** The meeting agreed to update the backup diagrams in the above report based on GISC status reports and for the chair to review Ernico’s summary to be included in the GISC operations page.](#_Toc536864308)

[**A8** The chair will compile the updated results and pass the GISC connectivity matrix to the Secretariat to put in the GISC Operations Pages.](#_Toc536864309)

[**A9** Mr Osuský will provide further information to TT-GISC on how to implement suitable sitemaps on their Members’ public web‎‎ and GISC Portals.](#_Toc536864310)

[**A10** GISCs are to implement these measures as soon as possible and report back to TT-GISC on implementation.](#_Toc536864311)

[**A11** The meeting agreed to review the WIS catalogue synchronization at the next TT-GISC (i.e. 2019).](#_Toc536864312)

[**A12** TT-GISC encouraged all GISCs to share their training material with the WP 7 team for the creation of a shared repository for review by TT-GISC2019.](#_Toc536864313)

[**A13** The meeting noted the concern of Tokyo relating to HTTPS access between GISCs asked each GISC to confirm the status of access to other centre.](#_Toc536864314)

[**A14** The changes in Annex 8 should be made to the GISC Operations Page and to the GISC Ticket System.](#_Toc536864315)

[**A15** Secretariat to add the updated GISC Backup Matrix to the GISC Operations Page.](#_Toc536864316)

[**A16** Chair to review the text in Annex 10 and update as required with track changes turned on and return to the secretariat to update the operations page accordingly.](#_Toc536864317)

[**A17** The meeting established a new Work Package, WP-8 (Technical Regulation updating) to draft recommendations e.g. WIS monitoring (Tech-spec-15), Jason-Spec and so on.](#_Toc536864318)

## Decisions

[**D1** Following the additional session meeting, TT-GISC agreed that all GISCs should be ready to collaborate with GISC Tokyo in populating Tokyo’s cache and metadata catalogue in their cloud solution.](#_Toc536864319)

[**D2** WP 2 should include identifying a standard mapping of the properties between WMO profile and schema.org and report back to TT-GISC.](#_Toc536864320)

[**D3** TT-GISC2018 recommended updating the WIS Guide WMO 1061, “Annex To Paragraph 7.5.1: Guidelines For Migrating Metadata Records From One GISC To Another” by adding in section “2. Operational guidelines” the two new new sub-sections.as described in Annex 6 to this report.](#_Toc536864321)

[**D4** The meeting agreed to the WP 7 work plan and to develop common training materials to the proposed scopes as listed in Annex 7 of this report.](#_Toc536864322)

[**D5** Having considered all the input and discussions, the TT-GISC agreed to the changes as listed in Annex 8 of this report.](#_Toc536864323)

[**D6** The meeting reviewed and agreed on a process based on TT-UAB recommendation as represented in the diagram.in Annex 9 or online.](#_Toc536864324)

[**D7** It further agreed to utilise the GISC Ticket System to manage cases.](#_Toc536864325)

[**D8** The meeting agreed to continue supporting the Tsunami warnings and related information delivery across all tsunami warning areas as well as the IOTWS.](#_Toc536864326)

[**D9** The meeting agreed that the above usage should be available on GISC-Ops page (https://wis.wmo.int/page=TT-GISC-ops).](#_Toc536864327)

[**D10** The meeting agreed to add a new item to the work plan, namely WP 8 “Technical Regulation updating” to be led by Weiqing Qu and support of Mark Francis, Benjamin Saclier, Jan Osusky, Kai.Thorsen Wirt, Li Xiang and Shuichi Ikeda.](#_Toc536864328)

Pending[Pending: 1. Need to get Enrico’s table](#_Toc536864794)\_\_\_\_\_\_\_\_\_\_\_\_

# Annexes

# Annex 1.– Participants

|  |  |  |
| --- | --- | --- |
| Kenji TSUNODA | Japan | Chair |
| Hassan HOUDOUCH | Morocco | Host |
| LI Xiang | China | Chair ET-WSIC |
| Mark FRANCIS | United Kingdom | Chair TT-DC |
| WeiqingQU | Australia | Member |
| Peng WANG | China | Member |
| Benjamin SACLIER | France | Member |
| Kai-Thorsten WIRT | Germany | Member |
| Ján OSUSKY | HMEI | Member |
| Shyam Lal (S.L.) SINGH | India | Member |
| Shuichi IKEDA | Japan | Member |
| Sungsoo DO | Korea, Rep | Member |
| Kwangjae LEE | Korea, Rep | Member |
| Youssef DARARI | Morocco | Member |
| Rabia MERROUCHI | Morocco | Member |
| Olga PETROVA | Russian Fed. | Member |
| Vladimir TSUKANOV | Russian Fed. | Member |
| Talal AL-OWAIBDI | Saudi Arabia | Member |
|  | Saudi Arabia | Member |
| VAN DER MERWE | South Africa | Member |
| SHEETS | United States | Member |
| Enrico FUCILE | WMO | Secretariat |
| David THOMAS | WMO | Secretariat |
| Unable to attend | | |
| SANTOS | Brazil | Member |
| Mohammad Bagher IRAJI | Iran | Member |
| Abbas NIAZA LIZADEH MOGHADAM | Iran | Member |

## Annex 2.–Agenda

1. Opening
   1. Welcome address
   2. Adoption of agenda
   3. Working arrangement
   4. Background from of EC-70 and relevant TCs, ETs
2. Review TT-GISC ToR and Action Plan
   1. Structure and Terms of Reference
   2. Action Plan: Annex 7 (table B) Final report of TT-GISC-2016
   3. Action Items: Annex 6 (table A, B) Final report of TT-GISC-2016
3. GISC Status
   1. Report from all GISCs
   2. Update GISC Backup matrix
   3. Update GISC-GISC connectivity matrix
4. Work packages
   1. Review structure and membership
   2. Progress report, WP-2: User Interface (Lead: Jan)
   3. Progress report, WP-3: User Federation (Lead: Jose Mauro)
   4. Progress report, WP-5: Metadata Consistency (Lead: Benjamin)
   5. Progress report, WP-6: Next Step WIS Monitoring (Lead: Weiqing)
   6. Progress report, WP-7: Capacity Development (Lead: Sungsoo)
5. WIS Monitoring
   1. Review GISC Watch activities since 1 May with information from experienced GISCs
   2. Develop GISC Watch operational reference for the first round
6. Time critical data delivery
   1. Summary of the UNESCO/IOC IOTWS communication test (Dec 2017)
7. Review TT-GISC Operations tools
   1. GISC-OPS (<https://wis.wmo.int/page=TT-GISC-ops>)
   2. GISC\_email, mailing-list
8. Review of the technical regulations and operational specifications
   1. Manual on WIS
   2. Guide to WIS
   3. Manual on GTS
9. Review Global data availability (if WMO analyzed the result of monitoring)
   1. WWW monitoring (AGM, SAM, IWM, SMM)
10. AOB
11. Next meeting
12. Review of action items, summary and close

## Annex 3. – Working Arrangements

Time table [TT-GISC 2018 in Casablanca]

Meeting venue: IDOU ANFA HOTEL & SPA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Tuesday, 18 Sep. (9:00-17:30) | Wednesday, 19 Sep. | Thursday, 20 Sep | Remarks |
| AM | 1. Opening (9:00 am)    1. Adoption of Agenda    2. Working arrangement    3. Back ground from EC-70 etc. 2. Review TT-GISC 3. Structure and membership 4. ToR Action plan 5. Action Items 6. GISC Status 7. Report from all GISCs   (10 minutes each, including Q&A) | * 1. BUFR issue   6. Time critical data  Study from Tsunami group  10:30 – 12:30  << visit National Meteorological or Hydrometeorological Service>> | 1. GISC operations tools 2. GISC-Ops web 3. GISC\_email& mailing-lists 4. Review of Tech-Regs, ops-specs 5. Manual on WIS 6. Guide to WIS 7. Manual on GTS | * Visit Met service on Wed. |
| Lunch | 12:30 – 13:45 | 12:30 – 13:45 | 12:30 – 13:45 |  |
| PM | (Cont. GISC report)  a.(1) WIS-USSASSOCIATED   1. GISC Backup 2. GISC-GISC Connectivity 3. WIS Monitoring 4. Feedback since 1st May 5. GISC Watch procedure | 1. Work Packages 2. Structure & membership 3. WP-2 (lead: Jan)   WP-3 (lead: Jose Mauro) (Cont. 4. Work Packages)   1. WP-5 (lead: Benjamin) 2. WP-6 (lead: Weiqing) 3. WP-7 (lead: Sungsoo) | 1. Review Global data availability    1. WWW monitoring 2. AOB 3. Next meeting 4. Summary and Close |  |
|  |  | 19:00 Dinner |  |  |

## Annex 4. – Extract From Annex to Decisiion 17 (EC 70)

**Annex to Decision 17 (EC-70)**

**Review plan for the *Manual on the WMO Information System* (WMO-No. 1060) and the *Guide to the WMO Information System* (WMO-No. 1061)**

**The topics to be included on the agenda for Cg-18 shall include:**

1. Amendments to WMO-No. 1060 Manual on the WMO Information System and WMO-No. 1061 Guide to the WMO Information System concerning:
   1. A generic on-site audit process that could be applied to the audit of specialist centres of any WMO programme against the requirements of that programme as described the CBS TECO 2018 document CBS-TECO-2018-Doc-5(3)-Annex1-Audit\_draft1;
   2. Management of risks to the WMO Information System of cyber security incidents through the introduction of a procedure for responding to cyber security incidents as described in the CBS TECO 2018 document CBS-TECO-2018-Doc-5(3)-Annex2-SecurityProcedure\_draft1;
   3. Operational monitoring of the WIS infrastructure as a “GISC watch” that would be implemented as described in issue 5(3)/4 of CBS TECO 2018 document CBS-TECO-2018-Doc-5(3)-WIS-Operations\_draft1;
   4. Escalation procedures to resolve operational issues that cannot be decided by mutual agreement between the parties involved as described in issue 5(3)/5 of CBS TECO 2018 document CBS-TECO-2018-Doc-5(3)-WIS-Operations\_draft1;
   5. Coordination of GISC activities as described in issue 5(3)/3 of CBS TECO 2018 document CBS-TECO-2018-Doc-5(3)-WIS-Operations\_draft1;
   6. Introduction of standards and guidance on information management for centres supporting WMO programmes (“WIS Part C”) as described in the CBS TECO 2018 information paper CBS-TECO-2018-Inf-5(4)-WIS-Information-Management;
   7. Introduction of standards and guidance on operation of information and communications technology in support of the activities of WMO programmes as described in the CBS TECO 2018 information paper CBS-TECO-2018-Inf-5(2)-WIS-ICT-Operations\_draft1;
   8. Plan for removing WMO-No. 386 *Manual on the Global Telecommunication System* and transferring any of its content that remains necessary to WMO-No. 1060 Manual on the WMO Information System or WMO-No. 1061 *Guide to the WMO Information System*.

## Annex 5. – Updated Action Items

| **Action Number** | **Decision/recommendation/ action** | **Responsible** | **Objective/deadline**  As of Sep 2018 | **Status**  As of Sep 2018 |
| --- | --- | --- | --- | --- |
| 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 | All GISCs have done this and training material is under new WP 7 | Close. |
| 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 | Close | Forum created, now need relevant usage.  Didn’t get used and people use email group |
| 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  Noting that national development of cloud based services by individual GISCs is of interest to all GISCs,  TT-GISC should clarify the relationship between cache in cloud and WIS 2.0 then it could facilitate the coordination and knowledge gained from these national activities for consideration of international processes.  Noted the risk of single supplies  TT-GISC recognizes that we have to look at things now for the future and we have to take these in consideration.  The funding mechanism for the cache in the cloud project was of a concern. Ideas of GISCs putting Ken to develop a paper describing what JMA want to achieve and provide to TT-GISC, possibly online discussion or telco next year and further refinement prior to TT-GISC  Develop terms of reference for the project coordination and Its outcomes | a) ET-CTS chair,  b) TT-GISC chair. c) Participating GISCs | Close this action and look at specific task on Ken for consideration for new WP in 2019 | a) & b) both Done – Cloud project in progress  c) c) report back to next TT-GISC meeting  Initial prototype was successful but a proposal by CBS to EC-70 to move into a pilot project was rejected,  TT-GISC noted that some Members (Japan and Morocco) are working on cloud solutions for national users which would require other GISCs to send their AOR information to their cloud solution.  It recommended that TT-GISC make this a pilot project to coordinate participation of the other GISCs |
| ~~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 | Remy as project lead and Yasu as technical lead. Participating GISCs project focal points | Close | EC demonstration was successfully completed. Note connection to WP 6 for further development of data centre monitoring |
| ~~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, Russian Fed and Chair TT-DC | Close | ITT-WIS established by EC70 with TORs. |
| ~~14/1-15~~ | **Action:** Meeting  a) 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 | Close | Done, agreed procedure uploaded on GISC OPS page |
| ~~14/1-16~~ | **Action:** Establish a method by which access to a GISC cache is reviewed /audited. | Germany, France, UK (lead) and Japan | Close, | Consider under WIS monitoring item |
| 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 cases  c) Confirm elements needed to be shared. | Brazil under WP 3 | Report back to TT-GISC 2019 and to ET-WISC 2019 | New opportunity under eduGain project. |
| ~~14/1-20~~ | **Recommendation:** TT-GISC  a) 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 | Close | Done. See<https://wiswiki.wmo.int/TT-GISC-ops> |
| 14/1-21 | **Recommendation:** TT-GISC recommends that WMO be registered as a DCPC with a principal GISC of Toulouse. | Secretariat and ET-WISC. | Leave on agenda | CBS approved, Meteo-France agreed to be Principal GISC, WMO still working out internal processes through Library –no change in 2018 |
| ~~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 | Close | Done. See <https://wiswiki.wmo.int/tiki-index.php?page=TT-GISC-ops&pagenum=5#Message_format> |
| ~~15/1-1~~ | Requested GISCs that were unable to report to TT-GISC 2015, to still provide status reports | Jeddah, New Delhi, and Tehran. | Close | Added to GISC Operations page <https://wiswiki.wmo.int/tiki-index.php?page_ref_id=1317&pagenum=2> |
| ~~15/1-2~~ | Noting closure of 14/1-10 and Doc(xx) from DWD. Request DWD to clarify what still needs to be done regarding OAI timestamps. | DWD (Markus & Bernd) | Close | close, now under WP 5 |
| ~~15/1-3~~ | Add CBS-16 demo to WIS monitoring team. | Yasu | Close | Done, Changes locked in, project under way as requested. |
| ~~15/1-4~~ | Provide information to Secretariat in order to populate and update GISC Backup Table (Working Doc 07) relating to GISC data collection and distribution in their AoR. | GISCs / Secretariat | Close | Done, table updated at this meeting. Need to put on GISC operations wiki page Leave on agenda |
| ~~15/1-5~~ | Cache variability   1. GISCs to review analysis of cache variation 2. CMA to upload excel spreadsheets containing the number and size of TTAAii and CCCC files in the cache used for cache analysis to meeting page to facilitate GISCs analysis of cache variability. 3. All GISCs are encouraged to submit data for future analyses. 4. Pass Doc 35 on cache monitoring to monitoring team. | a&c) GISCs  b) CMA | Close. | Now under GISC Watch and other cache issues |
| ~~15/1-6~~ | GISCs to investigate and if possible implement new data policy categories to account for No Limitation, including treatment of empty policy field. See <http://wis.smo.int/page=ManualWIS> 19 May 2015 reflecting CBS fast track approval of WIS Metadata. | GISCs | Close | Done |
| ~~15/1-7~~ | a) GISCs to investigate and if possible implement WMO\_DistributionScopeCode   1. Implement code 2. Encouraged GISCs to review in consultation with data providers existing metadata to include the global available, 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) GISCs  b) Chair | Close | Done |
| ~~15/1-8~~ | Investigate inclusion of regional networks on dynamic WIS monitoring diagram using information in existing JSON files. | Jose | Close | No longer required in this format, but could be new item later. |
| ~~15/1-9~~ | GISCs are to investigate if they are able to generate Vol C1 or if work is being done within their organization  Noted that Vol C1 and changes (metno) notifications has not been addressed. | GISCs | Close | Pass to TT-DC and report back to TT-GISC and recommend to ET-WISC  TT-GISC recommend TT-DC hold a workshop on replacement of Vol C1 notification processes, noting that needs to address non TTAAii messages (New item 18/1-4) |
| ~~15/1-10~~ | GISCs should implement a training environment along the lines in WDoc3r1. | GISCs | Close | Done, part of GISC status report |
| ~~15/1-11~~ | 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.  b) monitor the three WIS Common Dashboards. | GISCs | Close. | Note that not all GISCs are providing json files and this needs to be addressed |
| ~~15/1-12~~ | meeting will forward the request described in Doc14 to IPET-MDRD | Chair | Close | Done |
| ~~15/1-13~~ | Review DBNet guide for sat programme. | all | Close | Done |
| 16/1-1 | **Recommendation:** TT-GISC noting that aside from the twice yearly monitoring survey and annual corporate survey, there are many other surveys making their way to GISC staff. It asked the secretariat to try and coordinate these additional surveys to minimise work on staff. | Secretariat | Ongoing | CPDB is schedule for completion March 2019 and should see improvement |
| ~~16/1-2~~ | **Action:** GISCs should change their GEOSS SRU server pointers from <http://clearinghouse.cisc.gmu.edu/geonetwork/srv/en/portal.sru?> to <http://gisc.kma.go.kr/openwis-user-portal/srv/en/main.home/portal.sru?>. | GISCs | Close | Done |
| ~~16/1-3~~ | **Action:** GISCs to use template for future GISC reports provided in [Annex 5](#_Annex_5_–). All GISCs to provide their reports, even when unable to attend TT-GISC meetings | GISCs | Close | Done |
| 16/1-4 | **Action:** All GISCs to: a) liaise with DWD to create their accounts and to make internal arrangements so that process works during backup mode.  b) make accounts with Moscow and Tokyo who are running the same service. | GISCs | CBS-16 | Kai to check and will include in report |
| 16/1-5 | **Action:** GISCs to advise TT-GISC of:  a) their back up arrangements based on the spread sheet so GISCs can follow up;  b) add this to the TT-GISC wiki GISC Ops page (<http://wis.wmo.int/pages=TT-GISC-ops>); and  c) need to ensure that they meet the performance metrics for warnings etc in back up mode. | GISCs | CBS-16 | Enrico to send email to GISCs missing details and will be included in final report |
| ~~16/1-6~~ | **Action:** a)GISCs should implement fast track changes within 6 months after the date of effect b) Secretariat should email notifications of approved fast track changes to TT-GISC email group | a) GISCs  b) Secretariat | Close | See <https://wiswiki.wmo.int/tiki-index.php?page=TT-GISC-ops&pagenum=12#Fast_Track_Changes>. |
| ~~16/1-7~~ | **Action:** GISCs to check their processes to ensure that any new metadata records only use a new/current date stamp | GISCs | Close | Covered under WP 5 MD synch |
| 16/1-8 | **Action:** a) GISCs to provide a suitable style sheet to represent the returned SRU results as appearing to come from the centre using their SRU server; b) update SRU wiki pages to point to NZ SRU as an example of a centre using a GISC SRU | a) GISCs  b) Secretariat | TT-GISC 2017 | Still to be done. Report to next TT-GISC (2019) |
| 16/1-9 | **Action:** Ask a) TT-CAC to test GISC interfaces to ensure access controls conform to the WIS specifications.  b) TT-CAC to work with GISCs to address any deficiencies | Secretariat & TT-CAC | TT-GISC 2017 | Check with ET-CTS |
| 16/1-10 | **Action:** Centres to notify the secretariat if they are interested in pilot for EduGain as academic user identification (GEOSS GD11) | GISCs | June 2016 | Brazil took this on  Close. |
| 16/1-11 | **Action:** Centres to notify the secretariat of planned training activities | GISCs | Ongoing | Still needs to be come common practice (WP 7) |
| 16/1-12 | **Action:** a) GISCs to check if their implementation can cope with the two possible encodings of the WMO data policy (ie 1. to use gmx:Anchor and 2. free text:CharacterString).  b) ask IPET-MDRD to consider this example and to avoid in the next version of WMO Core Profile multiple encoding styles for crucial information to minimize the implementation work for the GISCs. | a) GISCs  b) Secretariat | a&b ASAP | Secretariat to follow up, report to ET-WISC and TT-GISC2019 |
| 16/1-13 | **Recommendation:** GISCs should review the status of centres in their area of responsibility and assist the centres in notifying the secretariat. | GISCs | TT-GISC 2017 | Being done. Close but note GISC |

## Annex 6 – Proposed updates to Guide to WIS (WMO No.1061)

**Adding new sub section on WIS GUIDE**

TT-GISC2018 recommended updating the WIS Guide WMO 1061, “Annex To Paragraph 7.5.1: Guidelines For Migrating Metadata Records From One GISC To Another” by adding in section “2. Operational guidelines” the following recommendations in new sub-sections:

*2.4 Harvesting GISC sets*

*In order to ensure metadata catalogue consistency between GISCs, the following actions should be followed:*

1. *GISC to do an incremental harvesting of foreign GISC sets every 12 hours.*
2. *GISC to perform a full re-harvest of all GISC sets every 6 months. All centres are asked to delete foreign Metadata sets and refetch them from the originating centres using a full harvest. Afterwards differences between the local copy and the original version have to be addressed.*

**Deleted records**

TT-GISC2018 recommended updating the WIS Guide WMO 1061, “Annex To Paragraph 7.5.1: Guidelines For Migrating Metadata Records From One GISC To Another” section “2. Operational guidelines”, sub section

2.2.1 Deleting metadata from GISC:

*WIS OAI repositories must support deleted records. GISCs should check that OAI-PMH repositories keep track of ‘deleted’ records. the datestamp must be the date and time that the record was deleted, and the OAI header must contain an attribute status=”deleted” (i.e., <header status=”deleted”>). The OAI header might look like this:*

*<header status=”deleted”>*

*<identifier>urn:x-wmo:md:int.wmo.wis::FADL41EDZH </identifier>*

*<datestamp>2018-08-06T07:12:11Z</datestamp>*

*<setSpec>WIS-CATALOGUE</setSpec>*

*<setSpec>WIS-GISC-OFFENBACH</setSpec>*

*<setSpec>WIS-DE</setSpec>*

*</header>*

## Annex 7 - Proposed scopes of training materials

The baseline of the materials is suggested by key learning resources from the Guide to the WIS and proposed scopes of training materials are as follows:

|  |  |  |
| --- | --- | --- |
| Functional Area | Competency | Key learning resources |
| Data | Manage the data flow | * Data policies * GTS data exchange * Data representation * WIS discovery, access and retrieval * Managing GTS data exchange * security of data exchange * network management |
| Manage data discovery | * WIS metadata guidance * Metadata entry and management tools * Samples of how to complete typical metadata record * Metadata policies and WIS metadata guidelines * ISO 19100 series: ISO standards on geographic information |

## Annex 8 – Updates to GISC Watch Activities and Procedures

TT-GISC agreed to:

1. Modify WCD to record the time series of the response time for all three matrices (OAI-PMH, Portal, SRU). Based on the time series, the response time of all three matrices shall be reviewed at least once a day.
   1. Time series is updated at 10 minutes i.e. as per json files, and is extendible to at least a month
2. On-duty GISC shall
   1. review all open tickets at the beginning of its monitoring round,
   2. follow up the tickets and give regular status updates.
   3. open the ticket as soon at problem occurs.
   4. You can close the ticket quickly if it goes away or is simple
   5. And reopen ticket if it turns out to be ongoing
   6. Perhaps use a “tag” to indicate things like glitches
3. GISC Watch Handover report shall report the important things that happened in the last roster, including
   1. Issues needing special attention on open tickets,
   2. Issues that have been resolved during this roster period,
   3. Number of tickets open on commencement, number created during watch, number closed during watch and number that remain open.
4. Final closing of tickets is the responsibility of the duty GISC watch
   1. Noting that the GISC assigned to address the problem will record its actions and status in the ticket
   2. The assigned GISC updates the ticket to advises that the case is resolved
   3. The duty GISC watch confirms and closes the ticket
      1. If available, the duty GISC reviews the case and updates knowledge database
   4. It should be noted that the duty GISC remains responsible for monitoring the progress of the item and encouraging the assigned GISC to complete necessary actions.
5. Simplification of ticketing system interface. Suggested changes to current configuration include:
   1. From View Issues, in filters remove : profile/platform/OS/OS version/Resolution (Agreed)
   2. From report issue : we should discuss to reduce the number of "Category"
      1. Should be items we are monitoring (i.e. metrices from JSON files)
         1. System status
         2. System up or down
         3. MD Synch accessible ¨…
   3. From report issue : remove Severity (priority is enough)
      1. Keep priority (Low, medium, high (ASAP), urgent (today))
   4. From Edit issue : remove Severity, remove Resolution (status is enough), remove OS, Platform, OS version (Agree as noted above)
6. Review tickets once per year at TT-GISC meetings.

## Annex 9 – Process for the management of BUFR upper air issues

A detailed process is proposed for the management of issues involving upper air BUFR reports. The process is graphically described using Business Process Management Notation 2.0 (BPMN 2.0) which is a consolidated standard developed by the Object Management Group (see [www.bpmn.org](http://www.bpmn.org)). A useful reference to the graphical symbols used can be found here <https://camunda.com/bpmn/reference/>

The diagram describing the process can be accessed online at <https://cawemo.com/share/4d19c7a5-f86f-4168-b172-b60d397b67fa> and is provided below as am embedded document.

The process is involving the following participants:

1. **Issue generator**. This is an NWP Centre using the upper air reports for their operational assimilation system. It has the responsibility of checking that the issue experienced is not related to an internal processing problem. The NWP Centre has also to offer expertise in resolving the problem when requested by the data producer.
2. **GISC**. The GISC has a role of issue resolution facilitator and has the responsibility of managing the problem resolution and updating the issues tracking system with
   1. All the information necessary to describe the issue at the level of detail that is required to the data producer to reproduce and resolve the problem.
   2. The status of the issue as per task in the issue resolution diagram
   3. A summary of the communication with other participants.

The GISC also has the responsibility of following up the issues and making available to the other participants the access to the tracking system.

1. **Data producer**. This is the originator of the BUFR message. The responsibility of the producer is to resolve the problem utilising the expertise provided by the expert body and the issue generator.
2. **Expert body (IPET-CM)**. The role of the expert body is to support the process with expertise regarding the data format.
3. **WMO Secretariat** is facilitating the overall issue resolution process by nominating the responsible GISC for a specific issue and managing the escalation of issues that for some reason cannot be solved by the other participants.



## Annex 10 – GISC Operations Page Updated Text

!GISC Operations Page

{maketoc}

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!GISC Status reports

!!Template for GISC Status report (Annex 5 of final report ET-EISC-2106)

ET-WISC/TT-GISC 2016 agreed to future TT-GISC centre status reports containing the following structure and content.

\* Area of Responsibility

\*\* AMDCN connectivity

\*\* DCs WIS compliance

\* Training – Capacity building activity

\* Operational issues in last period

\* GISC Back up and activities

\* Monitoring Activity & volume

\*\* Traffic size and volumes, uptime etc, user registration

\* Changes in GISC, including new features since last meeting

\* Progress on action items

\* Outlook (planned changes/improvements)

\* Any other issues of interest

\* Summary (Text for report)

~~#F00: Note that all GISCs should provide the status report to TT-GISC annual meetings, even if unable to attend.~~

...page...

!GISC Backup

!!GISC Backup procedure: Para.6.3 Part VI, Guide to WIS (No.1061)

\_\_**6.3 GISC BACKUP PROCEDURES**\_\_

The Manual on WIS, Part III, 3.5.9.2, requires GISCs to maintain arrangements with one or more backup GISCs that include, as a minimum, the collection and dissemination of information for its AMDCN to be taken up by another GISC in case of an incapacitating system failure.

Note: Responsibilities of the backup GISC are limited to the centres designated in the backup agreement with the GISC.

\_\_**6.3.1 Backup services\_\_**

6.3.1.1 Data collection and distribution must continue without interruption to and from centres in the area of the GISC being backed up. Where a centre's routine receipt of data is through subscription (e.g. GTS push), the backup GISC must have a current list of data to be sent to each centre or provide a place for the centres to come and get the data (e.g. GISC Cache).

6.3.1.2 Centres may be unable to change their GTS subscriptions during a period of back up operation, and any changes to subscriptions might not be maintained when normal operations resume.

6.3.1.3 Changes to metadata will not be possible during a backup period.

6.3.1.4 Any ad hoc changes made during a backup period may need to be redone after return to normal operations.

\_\_**6.3.2 User information**\_\_

6.3.2.1 If there is a need to exchange user information between GISCs in support of backup, proper security measures should be taken based on the agreement between the two GISCs. However, the centres concerned should ensure that the backup GISC has sufficient information for sending and collecting data from the centres being supported during a backup period.

6.3.2.2 Ad hoc changes to subscriptions, including additions or deletions of subscribers, should be avoided while in backup mode. Any ad hoc changes made during a backup period may need to be redone after return to normal operations.

\_\_**6.3.3 Networks**\_\_

Global Information System Centres need to ensure network connectivity to centres in the AMDCN of the GISC they are backing up. This may be through dedicated links, such as GTS, or over the Internet. Such connectivity should be in line with the Guide to Information Technology Security (WMO-No 1115) and the Guide to Virtual Private Networks (VPN) via the Internet between GTS centres (WMO-No 1116), as applicable.

!!GISC Backup matrix (status) updated by TT-GISC-2017

!!Metadata harvesting: Para.4.10 Manual on WIS (No. 1060)

\_\_**4.10 WIS-TECHSPEC-9: CONSOLIDATED VIEW OF DISTRIBUTED DAR METADATA (WIS DISCOVERY METADATA) CATALOGUES**\_\_

4.10.1 GISCs should exchange metadata catalogue updates using version 2 of the Open Archives Initiative–Protocol for Metadata Harvesting (OAI-PMH).

4.10.2 The exchange of metadata catalogue updates should satisfy the requirement for distributed instances of DAR metadata (WIS discovery metadata) not to diverge in content by more than one day. A mechanism for rapid update on an emergency basis should also be provided.

4.10.3 See also 3.5.6 (Discovery, access and retrieval).

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!Cache

!!Cache file format: agreed by TT-GISC-2015

1. The TT-GISC maintains the list of Core Cache data types, which are information intended for global exchange that all GISCs are required to have common holding (according to the Manual on WIS 3.5.3.1), and publishes the list through the WMO Secretariat.

2. The TT-GISC estimates the peak bandwidth used for the exchange of the Core Cache data by regular analysis of results from WIS Monitoring.

3. The TT-GISC coordinates and agrees on the minimum bandwidth required for each GISC to ensure the exchange of the Core Cache data.

“Meteorological bulletin” as default representation for 24h cache file format

For meteorological bulletins, the format within 24h cache should allow the full “meteorological bulletin” to be stored. Information stored should be the complete bulletin as defined in the Manual on GTS Attachment II-15 para 5.2 on accumulating messages into files. It must include all text between the TTAAii of the abbreviated heading and end with “=” (equal) at the end of the text part as shown below.

{img type="attId" attId="3676" max="800" alt="Meteorological bulletin 1"}

...page...

!!Inclusion of data in GISC core cache

!!!TOR which the TT-GISC should have afresh

1. The TT-GISC maintains the list of Core Cache data types, which are information intended for global exchange that all GISCs are required to have common holding (according to the Manual on WIS 3.5.3.1), and publishes the list through the WMO Secretariat.

2. The TT-GISC estimates the peak bandwidth used for the exchange of the Core Cache data by regular analysis of results from WIS Monitoring.

3. The TT-GISC coordinates and agrees on the minimum bandwidth required for each GISC to ensure the exchange of the Core Cache data.

!!!Working practices plan

1. Daily data management is done without a decision of the TT-GISC.

(a). The TT-GISC publishes the data type list which the Core Cache data should include. The list should be clear enough that any new data is judged whether it’s included or not.

(b). When a WIS centre wishes to circulate new information through WIS, the centre may specifies the distribution scope “GlobalExchange” in the metadata, if the data type information corresponds to at least one of a type of Core Cache data type list.

(c). When a GISC receives information with metadata including the distribution scope keyword “GlobalExchange”, the GISC shall treat the information as Core Cache data.

(d). If a WIS centre submits a WIS metadata record which inappropriately has the keyword GlobalExchange, the principal GISC shall guide the WIS centre to an appropriate description.

2. Addition and deletion of Core Cache data type list requires a consensus of TT-GISC.

It was recommended in TT-GISC. In order to keep a history of Core Cache evolution requests, the TT-GISC should provide a template form to be filled with information (such as time input of the data and products, daily volume estimation …) by a WIS centre which wants to add new information in Core Cache.

3. The TT-GISC may add a data type in the following ranges.

This list materializes the definition of information intended for global exchange in the Manual on WIS 3.5.1 (time- and operation-critical information (data and products)). The list below only shows the maximum extent of the Core Cache, since it is not realistic to guarantee the global exchange of some of data, considering available bandwidth.

(a). Observation data that is specified in the Annex I to Resolution 40 (Cg-XII) (1) to (5)

(b). Observation data that is designated as the additional data according to the Resolution

(c). Products that are to be exchanged through the WIS in Manual on GDPFS (currently under development)

4. The first edition of the Core Cache data type list should be the minimal of necessity.

In order to ensure the stable operation, the list will be augmented within the bandwidth agreed at the TT-GISC. (e.g. (a) and (b) preceding paragraph) If some GISC cannot handle the data or there is a concern about the operation, addition will be deferred and will be proposed to the GISC to increase the bandwidth of the core network.

5. The TT-GISC may defer adding the data type which has concern about the communication bandwidth. NWP and Satellite data are examples at the moment.

As it is specified in the Manual on WIS, the Core Cache is required that the all GISCs have to exchange and cache it, and should be acceptable for all GISCs in terms of capacity, such as a server capacity and bandwidth of the core network. Thus it should be estimated to be able to pass through a circuit with the lowest bandwidth. It was recommended in TT-GISC.

6. The TT-GISC will regularly estimate the required bandwidth by analyzing the result from WIS monitoring. To create a mechanism of estimating the bandwidth required that is used for the Core Cache data exchange, GISC should monitor the bandwidth usage of the Core Cache data exchange. Even if a list of the data type is not changed, the demand for communication bandwidth changes over time. The TT-GISC will investigate the actual amount of data transferred in regular interval (e.g. every 3 months or every 6 months), and estimate the maximum communication bandwidth which is expected to be used for exchange of current data types. Separately, the TT-GISC will agree on a communication bandwidth that each GISC shall provide, and it may add data types only when the data congestion does not occur. (A possible criterion of non-congestion is that daily volume of trafﬁc to be passed over any one circuit shall not exceed 80 per cent of its theoretical capacity in accordance with the Manual on GTS 1.3, Principle 4)

!!!Escalation procedure Annex 2 to Rec. 36 (CBS-16)

1. Global Information System Centres’ representatives (i.e. TT-GISC) should, based on discussion with the providers (Data Collection or Production Centres and National Centres) and users, be the group to decide whether a data stream should go in or out of the 24 hour cache and be routinely distributed:

(a) That all GISCs have to maintain (e.g. GlobalExchange flag);

(b) That a number of GISCs have to maintain (e.g. RegionalExchange flag).

2. Normally, the decision to add a new or to remove an existing data stream will be by consensus of GISCs representatives in line with normal operational collaboration:

(a) An implementation time line will be a part of the decision;

(b) Decisions should be made in a short timescale (e.g. less than 2 weeks).

3. If unable to reach consensus or if the requester is not satisfied with the decision, the problem should be escalated to ITT-WIS:

(a) ITT-WIS should then make its recommendations based on information from requesters and GISCs;

(b) The president of CBS will make a decision based on the ITT-WIS recommendation, utilizing fast track procedures as appropriate.

Note that issues may be escalated by a GISC either in response to events, occurred or planned,

where it is anticipated it might impact on the functioning of WIS.

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!TT-GISC Email Groups (TT-GISC2018)

!!TT-GISC discussion and information forum

The **primary email group** for TT-GISC is **cbs-wisc-tt-gisc@wmo.int**. This is an email group for the focal points of WMO Global Information System Centres (GISC), and includes members of the CBS Expert Team on WIS Centres' Task Team on GISCs. The email group consists mainly of individuals’ emails, although some GISCs have subscribed their operational GISC email alias to the group. Only members of the email group can send and receive emails to or from the group. Many individuals also subscribe secondary emails to this group, mostly where they are unable to associate their work email with G-Mail. The secretariat moderates this email group, including spam protection.

!!GISC Operations email

The **second** TT-GISC **email group** is **gisc-ops@wmo.int**. This email group is to exchange information between GISCs relating specifically to GISC Operations, including GISC Watch. This should be the primary email for announcing to other GISCs important planned changes such as new system configuration (e.g. change URL of OAI harvester) or for handing over the GISC Watch duty. The aim is for these messages to get to the operations centre (or help desk) of each GISC and to be monitored by staff on duty. Thus, subscribers to the group are primarily generic GISC email groups although some individuals have also subscribed. Each GISC can manage internally how emails received from this group are distributed among their staff. The secretariat and Chair moderate this email group and can approve submission from email addresses not registered in the group.

This list of generic GISC email addresses is maintained by the chair of TT-GISC who refers to these as the GISCs help desk email, although this is not really the case for all GISCs. The meeting noted that all GISCs have provided this contact information on their GISC portal and it can be used for 24/7 issues (need to take actions immediately), such as System/network trouble/outage.

!GISC communications: agreed by TT-GISC-2015

!!Technology

Email, phone, fax, wiki, WIS Core network

!!!Message format

The message should be on a standard form for TQM purpose and posted on the WIS-WIKI. For Example:

||Source GISC: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;

Destination GISCs: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;

Message date & time: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;|Validity period: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;

Subject: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;

Message body: &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;||

!!Communication Language

English should be the primary language and if the GISC server a second language it can be added in the message part.

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!Working Practices

~~!!Working practices plan~~

~~1. Daily data management is done without a decision of the TT-GISC.~~

~~(a). The TT-GISC publishes the data type list which the Core Cache data should include. The list should be clear enough that any new data is judged whether it’s included or not.~~

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~~In order to ensure the stable operation, the list will be augmented within the bandwidth agreed at the TT-GISC. (e.g. (a) and (b) preceding paragraph) If some GISC cannot handle the data or there is a concern about the operation, addition will be deferred and will be proposed to the GISC to increase the bandwidth of the core network.~~

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~~!Escalation procedure Annex 2 to Rec. 36 (CBS-16)~~

~~!!Procedure:~~

~~1. Global Information System Centres’ representatives (i.e. TT-GISC) should, based on discussion with the providers (Data Collection or Production Centres and National Centres) and users, be the group to decide whether a data stream should go in or out of the 24 hour cache and be routinely distributed:~~

~~(a) That all GISCs have to maintain (e.g. GlobalExchange flag);~~

~~(b) That a number of GISCs have to maintain (e.g. RegionalExchange flag).~~

~~2. Normally, the decision to add a new or to remove an existing data stream will be by consensus of GISCs representatives in line with normal operational collaboration:~~

~~(a) An implementation time line will be a part of the decision;~~

~~(b) Decisions should be made in a short timescale (e.g. less than 2 weeks).~~

~~3. If unable to reach consensus or if the requester is not satisfied with the decision, the problem should be escalated to ITT-WIS:~~

~~(a) ITT-WIS should then make its recommendations based on information from requesters and GISCs;~~

~~(b) The president of CBS will make a decision based on the ITT-WIS recommendation, utilizing fast track procedures as appropriate.~~

~~Note that issues may be escalated by a GISC either in response to events, occurred or planned,~~

~~where it is anticipated it might impact on the functioning of WIS.~~

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!!Stop gap metadata should use “WMO-other” (ET-WISC/TT-GISC 2016 agreed)

49. ET-WISC agreed that stop gap metadata should use “WMO-other” rather than “WMO-additional” because the data or product might be more restricted than “WMO-additional”

61. Mr Markus Heene presented TT-GISC Doc06 on data policies. The meeting noted that the paper highlighted two different possibilities for encoding the “WMO data policy for globally exchanged data” (“WMOEssential”, “WMOAdditional”, “WMOOther” and “NoLimitation”) following WMO Core Profile 1.3. the paper included an analysis of the impact on the users and GISCs. In particular it showed an existing operational problem in some GISC implementations which potentially couldn’t handle both encodings. The two methods are 1) to use gmx:Anchor and 2) free text:CharacterString

62. The meeting urged the GISCs to check if their implementation can cope with both possible encodings of the WMO data policy. Furthermore TT-GISC asked IPET-MDRD to consider this example and to avoid in the next version of WMO Core Profile multiple encoding styles for crucial information to minimize the implementation work for the GISCs.

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!Metadata Guidance

WMO web site

\* [https://wis.wmo.int/page=WisMetadata|WIS metadata]

\* [https://wis.wmo.int/page=WmoCoreMetadata|WIS metadata Guide]

\* [https://wis.wmo.int/page=oaidoc|OAI Doc]

Part V. METADATA GUIDANCE

\* [https://wis.wmo.int/WIS-Guide|Guide to WIS (No. 1061)]

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!Metadata Migration Procedure GISC A to GISC B

!!Requirements from new GISC:

1. Operational OAI-PMH server reachable from internet

2. GISC area of responsibility metadata set available (name shall be WIS-GISC-XXXX where XXXX is the city name of the GISC)

!!Procedure

1. The new GISC shall inform others GISC for the availability of OAI-PMH server by mailing to: cbs-wisc-tt-gisc@wmo.int and gisc-ops@wmo.int plus copy to wis-help@wmo.int

2. Others GISC shall check that the new OAI-PMH server is reachable and send email confirmation to new GISC.

3. New GISC contact GISC Tokyo and furnish the list of metadata which shall be removed from the WIS-UNASSOCIATED set.

4. GISC Tokyo sets a delete flag in metadata which shall be removed. Tokyo also informs all GISC of the number of metadata which has been removed and ask to others GISC to re-harvest WIS-UNASSOCIATED set by mailing to cbs-wisc-tt-gisc@wmo.int and gisc-ops@wmo.int plus copy to wis-help@wmo.int

5. All GISC shall re-harvest WIS-UNASSOCIATED and check that the metadata have been deleted.

6. New GISC add update flag their all metadata and ask to others GISC to re-harvest their WIS-metadata set by mailing to cbs-wisc-tt-gisc@wmo.int and gisc-ops@wmo.int plus copy to wis-help@wmo.int

7. All GISC shall start harvesting metadata set from new GISC.

8. All GISC shall confirm to the new GISC that actions have been completed.

9. GISC Tokyo physically removes their metadata from WIS UNASSOCIATED.

!!Recommendations:

\*Action 1 shall be done by a week before starting management of metadata.

\*Action 2 shall be done in a maximum delay of 5 days.

\*Action 5 and 6 shall be done in a maximum delay of 5 days.

!WIS Monitoring

!!JSON Specification for WIS Monitoring: agreed by ET-WISC 2016

\* [http://wis.wmo.int/file=2569|specification]

!! WIS Common Dashboard (WCD) Centres

\* [http://mon.wis.cma.cn/WCD/|GISC Beijing]

\* [https://www.wis-jma.go.jp/wcd/v1/top.html|GISC Tokyo]

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!GISC Watch

!!GISC Watch tasks

1.      The on-duty GiSC shall

a)      Carry out the GISC Watch by using information exchanged in JSON files. The WCD is advised to be used.

b)      Provide a summary report (template to be defined), and

c)      Formally hands over the GISC Watch operation to the next GISC

2.      The tasks performed by the on-duty GISC for GISC Watch shall include at least:

a)      Monitor the status of a service of each GISC, including OAI PMH, SRU and HTTP portal, on daily basis.

b)      Monitor the number of metadata records of each GISC (should be similar to each other and no sudden big changes)

c)      Send notification on identified problems/issues to the concerning GISC(s), follow up on the actions, and escalate issues as needed.

d)      Use agreed issue tracker system (MANTIS - http://www.inmet.gov.br/giscticket/) to report the incidents.

3.      Specific tasks:

a)      WCDs (JMA and CMA) are requested to store/present the history of those matrices mentioned in 2.a) for one month.

b)      As agreed in 2017 ET-WISC, GISC Brasilia will host and operate an issue tracking software. (Done. 10/2/2018. http://www.inmet.gov.br/giscticket/)

c)       GISCs currently not issue JSON files, please provide your JSON files to WCD ASAP.

Roster Rules

a)       Each roster stats from 00:00UTC and ends at 23:59UTC of the planned roster period.

b)       Every GISC should provide an email address (GISC\_email) for the purpose of communication, preferably an alias that includes multiple operators so that important information is not missed.

c)       Duty GISC shall hand over the monitoring duty to the next GISC by sending the report to the GISC\_email, along with any specific information deemed necessary/useful to the next duty GISC.

d)     To ensure the continuity of GISC Watch, the monitoring duty shall be carried out by the duty GISC at the beginning of the roster period regardless whether it has received handover email from the previous GISC.

e)      The GISC Watch report shall be sent to 1) next Duty GISC (GISC\_email), 2) TT-GISC mailing list (CBS-WISC-TT-GISC@wmo.int), 3) WMO Secretariat (wis\_help@wmo.int)

f)       Duty GISC shall register any issue in the GISC-Ticket system (http://www.inmet.gov.br/giscticket/) and make update when necessary

g)      For any issue related to GISC Watch that requires escalation, the Chair of TT-GISC is the first escalation point for all GISCs

!!Report template

||Duty GISC |GISC Tokyo |Period 2018-02-01 -- 2018-02-15

Issue ID |Date |GISC |Issues Action Taken |Status |Further Action

2018-1 |2018-02-01 |GISC A |GISC portal off air GISC A notified |Resolved|

2018-2 |2018-02-02 |GISC B |OAI provider inactive GISC B notified |Open |Follow up

2018-3 |2018-02-03 |GISC C |Can't reach GISC A GISC C and A notified |Resolved|

2018-4 |2018-02-04 |GISC D |Abnormal increase of the number of Metadata GISC D notified |Open |Follow up

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''\_\_Notes:\_\_''

''1. For every calendar year, the Issue ID should be continuous throughout the year, which gives each issue an unique ID.''

'' This is easy for communicating the issues among the GISC for taken action. The ID may change once we start using Issue Tracking System''

''2. "Further Action" is the suggestion from duty GISC to the next GISC on issues that are open and need to be followed up by next duty GISC. ''

!!Roster

||GISC | Start Date | End Date

Tokyo | 2018-05-01 | 2018-05-15

Beijing | 2018-05-16 | 2018-05-31

Melbourne | 2018-06-01 | 2018-06-15

Pretoria | 2018-06-16 | 2018-06-30

Exeter | 2018-07-01 | 2018-07-15

Toulouse | 2018-07-16 | 2018-07-31

Seoul | 2018-08-01 | 2018-08-15

Casablanca | 2018-08-16 | 2018-08-31

Offenbach | 2018-09-01 | 2018-09-15

Brazilia | 2018-09-16 | 2018-09-30

New Delhi | 2018-10-01 | 2018-10-15

Washington | 2018-10-16 | 2018-10-31

Jeddah | 2018-11-01 | 2018-11-15

Moscow | 2018-11-16 | 2018-11-30

Tehran | 2018-12-01 | 2018-12-15

Tokyo | 2018-12-16 | 2018-12-31

Beijing | 2019-01-01 | 2019-01-15

Melbourne | 2019-01-16 | 2019-01-31

Pretoria | 2019-02-01 | 2019-02-15

Exeter | 2019-02-16 | 2019-02-28

Toulouse | 2019-03-01 | 2019-03-15

Seoul | 2019-03-16 | 2019-03-31

Casablanca | 2019-04-01 | 2019-04-15

Offenbach | 2019-04-16 | 2019-04-30

Brazilia | 2019-05-01 | 2019-05-15

New Delhi | 2019-05-16 | 2019-05-31

Washington | 2019-06-01 | 2019-06-15

Jeddah | 2019-06-16 | 2019-06-30

Moscow | 2019-07-01 | 2019-07-15

Tehran | 2019-07-16 | 2019-07-31

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!Fast Track Changes

\*a) GISCs should implement fast track changes within 6 months after the date of effect

\*b) Secretariat should email notifications of approved fast track changes to TT-GISC email group

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!Other miscellaneous reference material for GISCs

\* GEOSS API [http://api.eurogeoss-broker.eu/docs/index.html|Documentation]

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