# TOR and Working Practices on procedures for approving inclusion of data in GISC Core Cache

## Introduction

According to the action item from TT-GISC2014, from April to June 2014, a sub team -Japan (lead), USA, Germany, France, UK and the Russian Federation- had been defining TOR and working practices on recommended procedures for approving inclusion of data in GISC core cache, so it can be reported to ET-WISC and ICT-ISS. The final draft is in Annex. “TT-GISC2015-Doc09-CoreCache.pptx” is reference to help understanding of this. The intention of this Annex is not “defining what data and products should be included into the core cache data type list” but “defining procedures for approving inclusion of data in the core cache data type list”.

The discussion was concluded, and the purpose of this document is to have a common understanding within TT-GISC members.

## Recommendations from TT-GISC

The team took into consideration TT-GISC’s recommendation specified in the TT-GISC2014Final Report, Paragraph 63 as below.
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The TT-GISC recommends that:

1) The TT-GISC should be the group to advise[decide] on if a data stream should go in or out of the 24 hour cache that all GISCs have to cache that affect operations.

2) Decision to add a new or to remove an existing data stream will be by consensus of GISCs representatives.

3) If unable to get consensus, the answer should default to no and the problem escalated to CBS.

4) The President of CBS can override any decisions made by the group.

5) Decisions should have a fixed timeline and have to be quick (eg less than 2 weeks)

6) It recommended that issues be escalated by a GISC either in response to events either occurred or planned where it is anticipated it might impact on the functioning of WIS.

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## Summary of the discussion

During the process of defining the TOR and working practices, the team had some discussion especially on whether or not some data and products - such as NWP, Satellite imagery, warnings, and etc. - should be included into the first edition of the core cache data type list. However, the team agreed that the first edition of the core cache data type list should be the minimal of necessity in order to ensure GISCs’ stable operation considering especially the lowest communication bandwidth of all GISCs. The team noted that GISCs can include any data into its own cache as the GISC’s needs and that even some time- and mission-critical data such as warnings do not need to be included into all 15 GISCs’ cache at this stage. The team also noted that TT-GISC can add data types to the core cache data type list later, depending on a result of monitoring data volume for core cache and considering all GISCs’ communication bandwidth.

### Relevant items

About the distribution scope keyword “GlobalExchange”, which is for metadata compliant with WMO Core Metadata Profile version 1.3, the team noted that there are still many metadata of the version 1.2 or older in circulation. The migration to the version 1.3 should be implemented. In addition, regarding treating information with the metadata including the distribution scope keyword “GlobalExchange” (Annex, Working practices plan 1. (c)) and identifying metadata which inappropriately has the keyword “GlobalExchange” (Annex, Working practices plan 1. (d)), the team also noted that the tasks of both items should be worked on by TT-GISC.

## References

[1] Final Report TT-GISC 2014, Paragraph 63 http://wis.wmo.int/file=759

## Recommended Text for report

The meeting reviewed Doc 09 and agreed on the proposed TOR and Working Practices on procedures for approving inclusion of data in GISC core cache attached as Annex xx, which was defined by a sub team including Japan (lead), USA, Germany, France, UK and the Russian Federation. TT-GISC’s recommendations specified in the TT-GISC2014Final Report, Paragraph 63 was taken into consideration throughout drafting. The meeting agreed that the first edition of the core cache data type list should be the minimal of necessity in order to ensure GISCs’ stable operation considering especially the lowest communication bandwidth of all GISCs. The meeting noted that GISCs can include any data into its own cache as the GISC’s needs and that even some important data such as warnings do not need to be included into all 15 GISCs’ cache. The meeting also noted that TT-GISC can add data types to the core cache data type list later, depending on a result of monitoring data volume for core cache and considering all GISCs’ communication bandwidth. The meeting noted that the intention of Annex xx is not “defining what data and products should be included into the core cache data type list” but “defining procedures for approving inclusion of data in the core cache data type list”.

# Annex: TOR and Working Practices on procedures for approving 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.
	1. 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.
	2. 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.
	3. When a GISC receives information with metadata including the distribution scope keyword “GlobalExchange”, the GISC shall treat the information as Core Cache data.
	4. 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.
	1. Observation data that is specified in the Annex I to Resolution 40 (Cg-XII) (1) to (5)
	2. Observation data that is designated as the additional data according to the Resolution
	3. 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)

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