# Report on Identification of principal and associated GISCs

## Background

1. Resolution 51 (Cg-XVI) designated fifteen GISCs. Noting that RA II had several GISCs, Congress (Paragraph 11.4.4) specifically asked RA II to review the distribution of centres between GISCs stating “*to allow the Members of RA II to benefit from the new system before this, Congress encouraged RA II to initiate the coordination and consultations as a tentative solution so that each National Centre should be linked to a principal GISC and to a secondary GISC, taking into account the efficiency of options, the cost effectiveness for both NCs and GISCs, data distribution capacity of the GISCs, and the current structure of the GTS*”. In the context here, the secondary GISC would most likely be considered as the back up GISC.
2. In addition to the issue of centre distribution among GISCs, CBS had agreed that managing duplication of metadata would be problematic, especially to the harvesting and synchronization of metadata between GISCs. This led to the solution that any DCPC or NC should only upload and manage its discovery metadata through one “Principal GISC” which was included in the Recommendation 8 (CBS-XV) (Report on CBS-15, WMO No 1061) which stated “*(1) Insert new “note” following paragraph 2.3.4.1 as follows:  
   Note: An associated GISC is defined by a bilateral agreement between a centre and a GISC for the purposes of uploading or downloading data. A centre can have multiple associated GISCs but shall identify a principal GISC for uploading and management of metadata.”*   
   This CBS-15 recommendation was approved by Resolution 13 (EC-65) “Amendments to the Manual on WIS”.

## WIS Centres Database

1. The list of centres and their principal and associated GISCs is online at <http://www.wmo.int/pages/prog/www/WIS/centres/>. The page also indicates which WIMMS the centre is using where the information has been provided. This web page is maintained via a database at the secretariat and includes details of WIS centres, their status of nomination, GTS end points and bandwidth. Originally, additions of WIS centres to this database were overseen by ICG-WIS sub group led by Al Kellie (NCAR), but this role was taken over by ET-WISC subgroup at the ET-WISC fifth session in Melbourne in 2012. GTS details are provided by RA working groups on infrastructure. Changes to GISC associations are primarily based on correspondence to the Secretary General normally directly from the Members, but sometimes through the GISCs or Regional Associations. Changes to the database are flagged relative to the Manual on WIS as approved by EC. The Manual on WIS status can be one of “Is equal to the Manual on WIS”, “To be considered by CBS”, “Approved by CBS” or “Approved by EC”.

## Current status of GISC associations and Principal GISCs.

1. A letter was sent to all PRs on 10 February 2012 asking Members to identify their Principal GISC. The letter is available online via the WIS Circular Letter and Questionnaires page <http://www.wmo.int/pages/prog/www/WIS/circular_letters_questionnaires.html>. The letter was sent in five of the UN official languages (excluding Chinese). The English version is available at <http://www.wmo.int/pages/prog/www/WIS/documents/CircularLetterPR-Feb2012-Principal-GISC_en.pdf>. The letter contained a list of NMHS NCs as well as known DCPCs and included a suggested GISC that was based on the GTS endpoints recorded in the database.
2. Centres on Regions I, III, IV and V provided only minor changes in the feedback and have remained largely unchanged since the questionnaire was issued. RA II and VI however, were more complicated. In particular, CBS-15 revised the list of centres’ principal GISCs and reset many centres in RA II and RA VI to “TBD” (To be decided). This affected many RA II centres, and those centres in RA VI where there the record in the database was based on the original GTS assumptions. Post review of the database revealed that the link bandwidths to many centres were out of date and so some of the initial GISC associations were no longer applicable.
3. Further modifications to the list have occurred following the fifteen session RA II early in December 2012 (RA II -15 Report, WMO No 1106) following an extensive survey of RA II members. Several changes have also occurred in RA VI as a part of the RA VI WIS implementation process which required RA VI Members to nominate their Principal GISC and National WIS Focal Point. The Fifteenth Session of RA VI is scheduled for September 2013 so the new version of the Manual on WIS to be released later this year will be published with TBD against those centres that have not resolved their Principal GISC issues.
4. Annexed to this document is a table showing the list of Principal and Associated GISC agreements. This is not to be confused with backup GISCs, which will be a separate issue to discuss at ET-WISC 2013, and by the TT-GISC.

## Summary

1. The issue of Principal GISC and Associated GISC has been addressed fully in all regions except RA VI which is meeting in September 2013. Of the 345 NCs and DCPCs in the WIS database only twelve remain as TBD. Eleven of these are in RA VI and one in RA II. Resolution 13 (EC-65) approved CBS-15 Recommendation 8, but allowed room to include the feedback from CBS, Members and Regional Associations. Thus, it is possible that by the time the “Manual on WIS” 2013 version is published the number of WIS centres that have not clarified their principal GISC might reduce a little.

## References

* Report on Cg-XVI – WMO No 077
* Report on EC-65 – EC-65-d04-4(2)-REV1-WIS-approved\_en.doc
* Report on CBS-15 – WMO No 1105
* Report on RA-II – 16 – WMO No 1106
* Manual on the WIS – WMO No 1060
* Report on ET-WISC – 5 (Melbourne)   
  <http://wis.wmo.int/pages/prog/www/ISS/Meetings/ET-WISC_Melbourne2012/FReport-ET-WISC2012.doc>

## Recommended Text

The meeting noted the status of the WIS centres’ identification of Principal and Associated GISCs and that at the time of the meeting only 12 of the 345 NCs and DCPCs had still to determine a Principal GISC. It noted that the amendments in the Manual on WIS approved by EC-65 clarified that a centre may be associated with multiple GISCs for the purposes of accessing and uploading data but may only have one Principal GISC for the purposes of publishing and synchronizing discovery metadata. It noted that the initial identification of Principal GISCs based on the GTS topology did not align well with the needs of RA II and RA VI. It noted that the associations between GISCs was evolving and that ET-WISC should continue to monitor centres’ associations with GISCs, including Principal, Backup, Associated and use of WIMMS even though only the principal is recorded in the Manual on WIS. It agreed TT-GISC should follow up on gathering more complete data on GISC associations, especially those needed for backup of principal GISCs.

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| **Centre** | **Wistype** | **Organization** | **Country Code** | **GISC** | **Secondary GISC** | **WIMMS Status** | **Region** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| WWIS | DCPC | Hong Kong Observatory | HKG | Beijing | Tokyo | Beijing | 2 |
| NMC | NC | Afghan Meteorological Authority | AFG | Beijing | Tehran |  | 2 |
| NMC | NC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| NMC | NC | Hong Kong Observatory | HKG | Beijing | Tokyo | Beijing | 2 |
| NMC | NC | National Agency for Meteorology, Hydrology and Environment Monitoring | MNG | Beijing | Moscow |  | 2 |
| NMC | NC | Department of Hydrology and Meteorology | NPL | Beijing |  |  | 2 |
| NMC | NC | Pakistan Meteorological Department | PAK | Beijing | Seoul | Beijing | 2 |
| RTH | DCPC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| NSMC | DCPC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| RCC (Beijing NCC, - RA II) | DCPC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| RSMC-Geographical (NMC) | DCPC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| RSMC-Activity-ATM (NMC) | DCPC | China Meteorological Administration | CHN | Beijing |  |  | 2 |
| WSO | NC | Meteorological and Geophysical Bureau | MAC | Beijing |  |  | 2 |
| RTH | DCPC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| RSMC-Geographical | DCPC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| VAAC | DCPC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| RIC | DCPC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| Regional Ozone Centre | DCPC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| NMC | NC | Servicio Meteorológico Nacional | ARG | Brasilia |  |  | 3 |
| NMC | NC | Servicio Nacional de Meteorología e Hidrología | BOL | Brasilia |  |  | 3 |
| NMC | NC | Instituto Nacional de Meteorologia | BRA | Brasilia |  |  | 3 |
| NMC | NC | Dirección Meteorológica de Chile | CHL | Brasilia |  |  | 3 |
| NMC | NC | Instituto de Hidrología, Meteorología y Estudios Ambientales | COL | Brasilia |  |  | 3 |
| NMC | NC | Instituto Nacional de Meteorología e Hidrología | ECU | Brasilia |  |  | 3 |
| NMC | NC | Hydrometeorological Service | GUY | Brasilia |  |  | 3 |
| NMC | NC | Dirección de Meteorología et Hidrología | PRY | Brasilia |  |  | 3 |
| NMC | NC | Dirección Nacional de Meteorología et Hidrología | PER | Brasilia |  |  | 3 |
| NMC | NC | Meteorological Service | SUR | Brasilia |  |  | 3 |
| NMC | NC | Dirección Nacional de Meteorología | URY | Brasilia |  |  | 3 |
| NMC | NC | Servicio de Meteorología de la Aviación | VEN | Brasilia |  |  | 3 |
| RTH | DCPC | Instituto Nacional de Meteorologia | BRA | Brasilia |  |  | 3 |
| AGRHYMET | DCPC | Direction de la Météorologie Nationale | NER | Casablanca |  |  | 1 |
| Aviation Centre | DCPC | Direction de la Météorologie Nationale | SEN | Casablanca |  |  | 1 |
| RSMC-Geographical | DCPC | Direction de la Météorologie Nationale | SEN | Casablanca |  |  | 1 |
| RSMC-Activity-TC (La Reunion) | DCPC | Météo-France (La Réunion) | FRA | Casablanca |  |  | 1 |
| RTH | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| RTH | DCPC | Direction de la Météorologie Nationale | SEN | Casablanca |  |  | 1 |
| RTH | DCPC | Direction de la Météorologie Nationale | NER | Casablanca |  |  | 1 |
| RTH / RSMC-Geographical | DCPC | Office National de la Météorologie | DZA | Casablanca |  |  | 1 |
| Regional Ozone Centre | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| RIC | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| RRC | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| RSMC-Geographical | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| RTC | DCPC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| NMC | NC | Office National de la Météorologie | DZA | Casablanca |  |  | 1 |
| NMC | NC | Service Météorologique National | BEN | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie | BFA | Casablanca |  |  | 1 |
| NMC | NC | Institut Géographique du Burundi | BDI | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | CMR | Casablanca |  |  | 1 |
| NMC | NC | Instituto Nacional de Meteorologia e Geofisica | CPV | Casablanca |  |  | 1 |
| NMC | NC | Direction Générale de l'Aviation Civile et de la Météorologie | CAF | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | COG | Casablanca |  |  | 1 |
| NMC | NC | Direction des Ressources en Eau et de la Météorologie | TCD | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | COM | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | CIV | Casablanca |  |  | 1 |
| NMC | NC | Agence Nationale de Météorologie et de Télédétection par Satellite | COD | Casablanca |  |  | 1 |
| NMC | NC | Service de la Météorologie | DJI | Casablanca |  |  | 1 |
| NMC | NC | The Egyptian Meteorological Authority | EGY | Casablanca |  |  | 1 |
| NMC | NC | Service de la Météorologie | EQG | Casablanca |  |  | 1 |
| NMC | NC | Civil Aviation Authority | ERI | Casablanca |  |  | 1 |
| NMC | NC | National Meteorological Services Agency | ETH | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | GAB | Casablanca |  |  | 1 |
| NMC | NC | Department of Water Resources | GMB | Casablanca |  |  | 1 |
| NMC | NC | Ghana Meteorological Services Department | GHA | Casablanca |  |  | 1 |
| NMC | NC | Direction Nationale de la Météorologie | GIN | Casablanca |  |  | 1 |
| NMC | NC | Météorologie de Guinée-Bissau | GNB | Casablanca |  |  | 1 |
| NMC | NC | Ministry of Transport | LBR | Casablanca |  |  | 1 |
| NMC | NC | Libyan National Meteorological Centre | LBY | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie et de l'Hydrologie | MDG | Casablanca |  |  | 1 |
| NMC | NC | Direction Nationale de la Météorologie du Mali | MLI | Casablanca |  |  | 1 |
| NMC | NC | Mauritius Meteorological Services | MUS | Casablanca |  |  | 1 |
| NMC | NC | Office National de la Météorologie | MRT | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | MAR | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | NER | Casablanca |  |  | 1 |
| NMC | NC | Nigerian Meteorological Agency | NGA | Casablanca |  |  | 1 |
| NMC | NC | Rwanda Meteorological Service | RWA | Casablanca |  |  | 1 |
| NMC | NC | Institut National de Météorologie | STP | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | SEN | Casablanca |  |  | 1 |
| NMC | NC | National Meteorological Services | SYC | Casablanca |  |  | 1 |
| NMC | NC | Meteorological Department | SLE | Casablanca |  |  | 1 |
| NMC | NC | Permanent Mission of Somalia | SOM | Casablanca |  |  | 1 |
| NMC | NC | Direction de la Météorologie Nationale | TGO | Casablanca |  |  | 1 |
| NMC | NC | National Institute of Meteorology | TUN | Casablanca |  |  | 1 |
| NMC | NC | Department of Meteorology | UGA | Casablanca |  |  | 1 |
| RCC | DCPC | Direction de la Météorologie Nationale | ACM | Casablanca |  |  | 1 |
| RDMEC (Drought) | DCPC | Presidency of Meteorology and Environment | SAU | Jeddah |  |  | 2 |
| RSMC-Geographical (Jeddah) | DCPC | Presidency of Meteorology and Environment | SAU | Jeddah |  |  | 2 |
| NMC | NC | Bahrain Meteorological Service | BHR | Jeddah | Beijing | Beijing | 2 |
| NMC | NC | Department of Meteorology | KWT | Jeddah | Tokyo | Tokyo | 2 |
| NMC | NC | Department of Meteorology | OMN | Jeddah | Tokyo | Tokyo | 2 |
| NMC | NC | Qatar Meteorology Department | QAT | Jeddah | Tokyo | Tokyo | 2 |
| NMC | NC | Presidency of Meteorology and Environment | SAU | Jeddah |  |  | 2 |
| NMC | NC | Meteorological Department | ARE | Jeddah |  |  | 2 |
| NMC | NC | Yemen Meteorological Service | YEM | Jeddah |  |  | 2 |
| RTH | DCPC | Presidency of Meteorology and Environment | SAU | Jeddah |  |  | 2 |
| Aviation Centre | NC | Qatar Meteorology Department | QAT | Jeddah | Tokyo | Tokyo | 2 |
| Marine Meteorological Centre (MMC) | DCPC | Qatar Meteorology Department | QAT | Jeddah | Tokyo | Tokyo | 2 |
| IPS | DCPC | Ionospheric Prediction Service  Prediction Service | AUS | Melbourne |  |  | 5 |
| NCC | DCPC | National Climate Centre | AUS | Melbourne |  |  | 5 |
| RSMC-Geographical | DCPC | New Zealand National Meteorological Service | NZL | Melbourne |  |  | 5 |
| RSMC-Geographical (Darwin) | DCPC | Buerau of Meteorology | AUS | Melbourne |  |  | 5 |
| RTH | DCPC | New Zealand National Meteorological Service | NZL | Melbourne |  |  | 5 |
| RSMC-Activity-TC | DCPC | Fiji Meteorological Service | FJI | Melbourne |  |  | 5 |
| JATWC | DCPC | Joint Australian Tsunami   Warning Centre | AUS | Melbourne |  |  | 5 |
| NMC | NC | Bureau of Meteorology | AUS | Melbourne |  |  | 5 |
| NHS | NC | Bureau of Meteorology Water Division | AUS | Melbourne |  |  | 5 |
| NMC | NC | The Brunei Meteorological Service | BRN | Melbourne |  |  | 5 |
| WSO (Christmas Island) | NC | Cocos and Christmas Island Field Office | AUS | Melbourne |  |  | 5 |
| NMC | NC | Cook Islands Meteorological Service | COK | Melbourne |  |  | 5 |
| NMC | NC | Direcção Nacional da Meteorologia e Geofisica | TLS | Melbourne |  |  | 5 |
| NMC | NC | Fiji Meteorological Service | FJI | Melbourne |  |  | 5 |
| NMC | NC | Météo-France (Polynésie française) | PYF | Melbourne |  |  | 5 |
| NMC | NC | Agency for Meteorology, Climatology and Geophysics | IDN | Melbourne |  |  | 5 |
| NMC | NC | Malaysian Meteorological Department | MYS | Melbourne |  |  | 5 |
| NMC | NC | Météo-France (Nouvelle Calédonie) | NCL | Melbourne |  |  | 5 |
| NMC | NC | New Zealand National Meteorological Service | NZL | Melbourne |  |  | 5 |
| NMC | NC | Niue Meteorological Service | NIU | Melbourne |  |  | 5 |
| NMC | NC | Papua New Guinea Meteorological Service | PNG | Melbourne |  |  | 5 |
| NMC (Phoenix Islands) | NC | Kiribati Meteorological Service | KIR | Melbourne |  |  | 5 |
| NMC | NC | Samoa Meteorology Division | WSM | Melbourne |  |  | 5 |
| NMC | NC | Meteorological Services Division | SGP | Melbourne |  |  | 5 |
| NMC | NC | Solomon Islands Meteorological Service | SLB | Melbourne |  |  | 5 |
| NMC (Tokelau) | NC | New Zealand National Meteorological Service (Tokelau) | NZL | Melbourne |  |  | 5 |
| NMC | NC | Tonga Meteorological Service | TON | Melbourne |  |  | 5 |
| NMC | NC | Tuvalu Meteorological Service | TUV | Melbourne |  |  | 5 |
| NMC | NC | Vanuatu Meteorological Services | VUT | Melbourne |  |  | 5 |
| RTH | DCPC | Bureau of Meteorology | AUS | Melbourne |  |  | 5 |
| N/A | NC | FSM Weather Station | FSM | Melbourne |  |  | 5 |
| GDC (Solar Radiation) (St. Petersburg) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| RCC (Moscow, Lead RA II, Lead RA VI LRF) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| RNODC and GDC (Obninsk) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| RSMC-Activity-ATM (Obninsk) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| RSMC-Geographical (Moscow) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| RTH/RSMC-Geographical (Khabarovsk) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 2 |
| RTH/RSMC-Geographical (Novosibirsk) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 2 |
| WDC (ICE) (St. Petersburg) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| NMC | NC | Armenian State Hydrometeorological and Monitoring Service | ARM | Moscow |  |  | 6 |
| NMC | NC | National Hydrometeorological Department | AZE | Moscow | WE-VGISC Offenbach |  | 6 |
| NMC | NC | Department of Hydrometeorology | BLR | Moscow |  |  | 6 |
| NMC | NC | Kazhydromet | KAZ | Moscow |  |  | 2 |
| NMC | NC | Main Hydrometeorological Administration | KGZ | Moscow |  |  | 2 |
| NMC | NC | Serviciul Hidrometeorologic de Stat Moldova | MDA | Moscow |  |  | 6 |
| NMC | NC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| NMC | NC | Main Administration of Hydrometeorology and Monitoring of the Environment | TJK | Moscow | Tehran |  | 2 |
| NMC | NC | Ukrainian Hydrometeorological Center | UKR | Moscow |  |  | 6 |
| RTH (Moscow) | DCPC | Russian Federal Service for Hydrometeorology and Environmental Monitoring | RUS | Moscow |  |  | 6 |
| WSO (Khabarovsk) | NC | Russian Federal Service for Hydrometeorology and Environmental Monitoring (Khabarovsk) | RUS | Moscow |  |  | 2 |
| WSO (Novosibirsk) | NC | Russian Federal Service for Hydrometeorology and Environmental Monitoring (Novosibirsk) | RUS | Moscow |  |  | 2 |
| NMC | NC | Bangladesh Meteorological Department | BGD | New Delhi | Tokyo | Tokyo | 2 |
| NMC | NC | Council for Renewable Natural Resources Research | BTN | New Delhi |  |  | 2 |
| NMC | NC | India Meteorological Department | IND | New Delhi |  | Tokyo | 2 |
| NMC | NC | Department of Meteorology | MDV | New Delhi | Tokyo | Tokyo | 2 |
| NMC | NC | Department of Meteorology | LKA | New Delhi |  |  | 2 |
| RTH | DCPC | India Meteorological Department | IND | New Delhi |  | Tokyo | 2 |
| RSMC-Activity-TC | DCPC | India Meteorological Department | IND | New Delhi |  | Tokyo | 2 |
| NMC | NC | Instituto Nacional de Hidrometeorología e Geofisica | AGO | Pretoria |  |  | 1 |
| NMC | NC | Botswana Meteorological Services | BWA | Pretoria |  |  | 1 |
| NMC | NC | Lesotho Meteorological Services | LSO | Pretoria |  |  | 1 |
| NMC | NC | Malawi Meteorological Services | MWI | Pretoria |  |  | 1 |
| NMC | NC | Instituto Nacional de Meteorologia | MOZ | Pretoria |  |  | 1 |
| NMC | NC | Namibia Meteorological Service | NAM | Pretoria |  |  | 1 |
| NMC | NC | South African Weather Service | ZAF | Pretoria |  |  | 1 |
| NMC | NC | Sudan Meteorological Authority | SDN | Pretoria |  |  | 1 |
| NMC | NC | Swaziland Meteorological Service | SWZ | Pretoria |  |  | 1 |
| NMC | NC | Zambia Meteorological Department | ZMB | Pretoria |  |  | 1 |
| NMC | NC | Zimbabwe Meteorological Services Department | ZWE | Pretoria |  |  | 1 |
| RTH | DCPC | South African Weather Service | ZAF | Pretoria |  |  | 1 |
| NMSC | DCPC | Korea Meteorological Administration | KOR | Seoul |  |  | 2 |
| GPC / LC-LRFMME | DCPC | Korea Meteorological Administration | KOR | Seoul |  |  | 2 |
| RTH | DCPC | Uzhydromet | UZB | Seoul |  |  | 2 |
| WAMIS | DCPC | Korea Meteorological Administration | KOR | Seoul |  |  | 2 |
| NMC | NC | Korea Meteorological Administration | KOR | Seoul |  |  | 2 |
| NMC | NC | Uzhydromet | UZB | Seoul | Moscow |  | 2 |
| NMC | NC | The Hydrometeorological Institute | ALB | TBD |  |  | 6 |
| NMC | NC | Danish Meteorological Institute | DNK | TBD |  |  | 6 |
| NMC | NC | Estonian Meteorological and Hydrological Institute | EST | TBD |  |  | 6 |
| NMC | NC | Department of Hydrometeorology | GEO | TBD |  |  | 6 |
| NMC | NC | Service Météorologique | LBN | TBD |  |  | 6 |
| NMC | NC | Administration de l'Aéroport de Luxembourg | LUX | TBD |  |  | 6 |
| NMC | NC | Meteorological Office | MLT | TBD |  |  | 6 |
| NMC | NC | Mission Permanente de la Principauté de Monaco | MCO | TBD |  |  | 6 |
| NMC | NC | Slovak Hydrometeorological Institute | SVK | TBD |  |  | 6 |
| NMC | NC | Meteorological Office | SVN | TBD |  |  | 6 |
| NMC | NC | Administration of Hydrometeorology | TKM | TBD |  |  | 2 |
| NMC | NC | State Hydrometeorological Administration | PRK | TBD |  |  | 2 |
| NMC | NC | Islamic Republic of Iran Meteorological Organization | IRN | Tehran |  | Tokyo | 2 |
| NMC | NC | Iraqi Meteorological Organization | IRQ | Tehran | Jeddah | Beijing | 2 |
| NMC | NC | Ministry of Defence Meteorological Department | SYR | Tehran |  |  | 6 |
| RTH | DCPC | Islamic Republic of Iran Meteorological Organization | IRN | Tehran |  |  | 2 |
| GPC/LRF | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| RSMC-Geographical | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| RSMC-Activity-ATM | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| RSMC-Activity-TC | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| RTH | DCPC | Thai Meteorological Department | THA | Tokyo |  |  | 2 |
| Satellite Centre | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| RCC (Tokyo NCC, RA II) | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| WDC-GHG | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| NMC | NC | Department of Meteorology | KHM | Tokyo |  | Tokyo | 2 |
| NMC | NC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| NMC | NC | Department of Meteorology and Hydrology | MMR | Tokyo |  |  | 2 |
| NMC | NC | Philippine Atmospheric Geophysical and Astronomical Services Administration | PHL | Tokyo | Melbourne |  | 5 |
| NMC | NC | Thai Meteorological Department | THA | Tokyo |  |  | 2 |
| NMC | NC | Hydrometeorological Service | VNM | Tokyo |  |  | 2 |
| RTH | DCPC | Japan Meteorological Agency | JPN | Tokyo |  |  | 2 |
| NMC | NC | Department of Meteorology and Hydrology | LAO | Tokyo |  | Tokyo | 2 |
| GOSIC | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| NCAR | DCPC | National Center for Atmospheric Research | USA | Washington |  |  | 4 |
| RMSC-Geographical / NESDIS | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| NGDC | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| NODC | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| RSMC-Activity-ATM | DCPC | Meteorological Service of Canada | CAN | Washington |  |  | 4 |
| RSMC-Activity-ATM | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| GPC/LC-LRFMME | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| RSMC-Activity-TC (Honolulu) | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 5 |
| RSMC-Activity-TC (Miami) | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| WAFC | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| NMC | NC | Antigua and Barbuda Meteorological Services | ATG | Washington |  |  | 4 |
| WSO (Turks and Caicos Islands) | NC | Caribbean Meteorological Organization (Turks and Caicos Islands) | BCT | Washington |  |  | 4 |
| NMC | NC | Meteorological Services | BRB | Washington |  |  | 4 |
| NMC | NC | National Meteorological Service | BLZ | Washington |  |  | 4 |
| NMC (Cayman Islands) | NC | Caribbean Meteorological Organization (Cayman Islands) | BCT | Washington |  |  | 4 |
| NMC | NC | Meteorological Service of Canada | CAN | Washington |  |  | 4 |
| WSO (British Virgin Islands) | NC | Caribbean Meteorological Organization (British Virgin Islands) | BCT | Washington |  |  | 4 |
| NMC | NC | Instituto Meteorológico Nacional | CRI | Washington |  |  | 4 |
| NMC | NC | Instituto de Meteorología | CUB | Washington |  |  | 4 |
| NMC | NC | Dominica Meteorological Services | DMA | Washington |  |  | 4 |
| NMC | NC | Oficina Nacional de Meteorología | DOM | Washington |  |  | 4 |
| NMC | NC | Servicio Nacional de Estudios Territoriales | SLV | Washington |  |  | 4 |
| NMC | NC | Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología | GTM | Washington |  |  | 4 |
| NMC | NC | Centre national de la météorologie | HTI | Washington |  |  | 4 |
| NMC | NC | Servicio Meteorológico Nacional | HND | Washington |  |  | 4 |
| NMC | NC | Meteorological Service | JAM | Washington |  |  | 4 |
| WSO (Line Islands) | NC | National Oceanic and Atmospheric Administration, National Weather Service (Line Islands) | USA | Washington |  |  | 5 |
| NMC | NC | Servicio Meteorológico Nacional | MEX | Washington |  |  | 4 |
| WSO (Montserrat) | NC | Caribbean Meteorological Organization (Montserrat) | BCT | Washington |  |  | 4 |
| NMC | NC | Meteorological Department Curaçao | CUW | Washington |  |  | 4 |
| NMC | NC | Dirección General de Meteorología | NIC | Washington |  |  | 4 |
| NMC | NC | Hidrometeorología | PAN | Washington |  |  | 4 |
| WSO (Puerto Rico) | NC | National Oceanic and Atmospheric Administration, National Weather Service (Puerto Rico) | USA | Washington |  |  | 4 |
| NMC | NC | Saint Kitts and Nevis Meteorological Service | STK | Washington |  |  | 4 |
| NMC | NC | Saint Lucia Meteorological Service | LCA | Washington |  |  | 4 |
| NMC | NC | Meteorological Service | TTO | Washington |  |  | 4 |
| NMC | NC | National Oceanic and Atmospheric Administration, National Weather Service | USA | Washington |  |  | 4 |
| RTH | DCPC | National Oceanic and Atmospheric Administration | USA | Washington |  |  | 4 |
| NMC | NC | Department of Meteorology | BHS | Washington |  |  | 4 |
| COMET | DCPC | UCAR - University Corporation for Atmospheric Research | USA | Washington |  |  | 4 |
| NHS | NC | Instituto Nacional de Recursos Hidráulicos (INDRHI) | DOM | Washington |  |  | 4 |
| WSO (Guam) | NC | National Oceanic and Atmospheric Administration, National Weather Service (Guam) | USA | Washington |  |  | 5 |
| NMC (Aruba) | NC | Departamento Meteorologico Aruba | NLD | Washington |  |  | 4 |
| WSO (Anguilla) | NC | Caribbean Meteorological Organization (Anguilla) | BCT | Washington |  |  | 4 |
| Marine Observations Centre | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| Specialised Ocean/Wave Centre | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| RCC (AE De Bilt, Lead RA VI on Climate Data) | DCPC | Royal Netherlands Meteorological Institute | NLD | WE-VGISC Exeter |  |  | 6 |
| RSMC-Geographical | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| RSMC-Activity-ATM | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| GPC/LRF | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| Satellite Centre | DCPC | Royal Netherlands Meteorological Institute | NLD | WE-VGISC Exeter |  |  | 6 |
| RTH | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| WSO (Ascension Island) | NC | Met Office (Ascension Island) | GBR | WE-VGISC Exeter |  |  | 1 |
| WSO (Bermuda) | NC | Met Office (Bermuda) | GBR | WE-VGISC Exeter |  |  | 4 |
| WSO (Gibraltar) | NC | Met Office (Gibraltar) | GBR | WE-VGISC Exeter |  |  | 6 |
| NMC | NC | Icelandic Meteorological Office | ISL | WE-VGISC Exeter |  |  | 6 |
| NMC | NC | Met Éireann | IRL | WE-VGISC Exeter |  |  | 6 |
| NMC (includes European part of Netherlands and Bonaire, St Eustatius, Saba) | NC | Royal Netherlands Meteorological Institute | NLD | WE-VGISC Exeter |  |  | 6 |
| WSO (Pitcairn Islands) | NC | Met Office (Pitcairn Islands) | GBR | WE-VGISC Exeter |  |  | 5 |
| WSO (St. Helena Island) | NC | Met Office (St. Helena Island) | GBR | WE-VGISC Exeter |  |  | 1 |
| NMC | NC | Tanzania Meteorological Agency | TZA | WE-VGISC Exeter |  |  | 1 |
| NMC | NC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| WAFC | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| VAAC | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| GCOS Lead Centre for Antarctica (BAS) | DCPC | Met Office | GBR | WE-VGISC Exeter |  |  | 6 |
| Arctic Data Centre | DCPC | Finnish Meteorological Institute | FIN | WE-VGISC Offenbach |  |  | 6 |
| Arctic Data Centre | NC | Norwegian Meteorological Arctic Data Centre | NOR | WE-VGISC Offenbach |  |  | 6 |
| GCC | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| GPCC | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| GRDC | DCPC | Bundesanstalt für Gewässerkunde (BFG) | DEU | WE-VGISC Offenbach |  |  | 6 |
| GRUAN-LC | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| Marine Meteorological Centre | DCPC | Meteorological and Hydrological Service | HRV | WE-VGISC Offenbach |  |  | 6 |
| Nordic Radar | DCPC | Norwegian Meteorological Arctic Data Centre | SWE | WE-VGISC Offenbach |  |  | 6 |
| RCC (Offenbach, Lead RA VI ) | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| RIC | DCPC | Kenya Meteorological Department | KEN | WE-VGISC Offenbach |  |  | 1 |
| RSMC-Geographical | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| RSMC-Geographical | DCPC | Kenya Meteorological Department | KEN | WE-VGISC Offenbach |  |  | 1 |
| RTH | DCPC | National Institute of Meteorology and Hydrology | BGR | WE-VGISC Offenbach |  |  | 6 |
| RTH | DCPC | Kenya Meteorological Department | KEN | WE-VGISC Offenbach |  |  | 1 |
| RTH | DCPC | Swedish Meteorological and Hydrological Institute | SWE | WE-VGISC Offenbach |  |  | 6 |
| Satellite Centre (EUMETSAT) | DCPC | EUMETSAT | EUM | WE-VGISC Offenbach |  |  | 6 |
| WDCC | DCPC | Deutsches Klimarechenzentrum DKRZ | DEU | WE-VGISC Offenbach |  |  | 6 |
| WDC-RSAT | DCPC | German Aerospace Center (DLR) | DEU | WE-VGISC Offenbach |  |  | 6 |
| WRMC | DCPC | Alfred Wegener Institute | DEU | WE-VGISC Offenbach |  |  | 6 |
| RTH | DCPC | Czech Hydrometeorological Institute | CZE | WE-VGISC Offenbach |  |  | 6 |
| RSMC-Marine Meteorology | DCPC | Servizio Meteorologico | ITA | WE-VGISC Offenbach |  |  | 6 |
| RTH | DCPC | Servizio Meteorologico | ITA | WE-VGISC Offenbach |  |  | 6 |
| NILU | DCPC | Norwegian Meteorological Institute | NOR | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Central Institute for Meteorology and Geodynamics | AUT | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Meteorological Institute | BIH | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | National Institute of Meteorology and Hydrology | BGR | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Czech Hydrometeorological Institute (NIMH) | CZE | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Meteorological and Hydrological Service | HRV | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Meteorological Service | CYP | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Finnish Meteorological Institute | FIN | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Hellenic National Meteorological Service | GRC | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Meteorological Service of Hungary | HUN | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Israel Meteorological Service | ISR | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Servizio Meteorologico | ITA | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Jordan Meteorological Department | JOR | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Kenya Meteorological Department | KEN | WE-VGISC Offenbach |  |  | 1 |
| NMC | NC | Latvian Environment, Geology and Meteorology Agency | LVA | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Lithuanian Hydrometeorological Service | LTU | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Hydrometeorological Institute of Montenegro | MNE | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Norwegian Meteorological Institute | NOR | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Institute of Meteorology and Water Management | POL | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | National Meteorological Administration | ROU | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Republic Hydrometeorological Service of Serbia | SRB | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Swedish Meteorological and Hydrological Institute | SWE | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | MeteoSwiss | CHE | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Republic Hydrometeorological Institute | MKD | WE-VGISC Offenbach |  |  | 6 |
| NMC | NC | Turkish State Meteorological Service | TUR | WE-VGISC Offenbach |  |  | 6 |
| RTH | DCPC | Deutscher Wetterdienst | DEU | WE-VGISC Offenbach |  |  | 6 |
| RCC (Belgrade, RA VI Network Member) | DCPC | Republic Hydrometeorological Service of Serbia | SRB | WE-VGISC Offenbach |  |  | 6 |
| RTH | DCPC | Central Institute for Meteorology and Geodynamics | AUT | WE-VGISC Offenbach |  |  | 6 |
| GPC/LRF | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| RCC (Toulouse, Lead RA VI on LRF) | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| Regional NWP support | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| RSMC-Activity-ATM | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| VAAC | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| NMC | NC | Institut Royal Météorologique | BEL | WE-VGISC Toulouse |  |  | 6 |
| NMC (Canary Islands) | NC | Agencia Estatal de Meteorología (Canary Islands) | ESP | WE-VGISC Toulouse | WE-VGISC Exeter |  | 1 |
| WSO (Clipperton) | NC | Météo-France (Clipperton) | FRA | WE-VGISC Toulouse |  |  | 4 |
| NMC | NC | Météo-France (Toulouse) | FRA | WE-VGISC Toulouse |  |  | 6 |
| WSO (French Guiana) | NC | Météo-France (French Guiana) | FRA | WE-VGISC Toulouse |  |  | 3 |
| WSO (Guadeloupe, St. Martin, St. Barthelemy) | NC | Météo-France (Guadeloupe, Saint Martin, Saint Barthélemy) | FRA | WE-VGISC Toulouse |  |  | 4 |
| WSO (Kerguelen Islands) | NC | Météo-France (Kerguelen Islands) | FRA | WE-VGISC Toulouse |  |  | 1 |
| NMC (Madeira) | NC | Instituto de Meteorologia (Madeira) | PRT | WE-VGISC Toulouse |  |  | 1 |
| WSO (Martinique) | NC | Météo-France (Martinique) | FRA | WE-VGISC Toulouse |  |  | 4 |
| NMC | NC | Instituto de Meteorologia | PRT | WE-VGISC Toulouse |  |  | 6 |
| WSO (Reunion) | NC | Météo-France (La Réunion) | FRA | WE-VGISC Toulouse |  |  | 1 |
| WSO (St. Pierre And Miquelon) | NC | Météo-France (Saint Pierre and Miquelon) | FRA | WE-VGISC Toulouse |  |  | 4 |
| NMC | NC | Agencia Estatal de Meteorología | ESP | WE-VGISC Toulouse | WE-VGISC Exeter |  | 6 |
| WSO (Wallis and Futuna) | NC | Météo-France (Wallis and Futuna) | FRA | WE-VGISC Toulouse |  |  | 5 |
| Radar Data Centre (ODC) | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| RTH | DCPC | Météo-France | FRA | WE-VGISC Toulouse |  |  | 6 |
| MEDARE | DCPC | Centre for Climate Change, University Rovira i Virgili | ESP | WE-VGISC Toulouse | WE-VGISC Exeter |  | 6 |
| RSMC-Medium-Range-Forecasting (ECMWF) | DCPC | European Centre for Medium Range Forecasting (ECMWF) | ECM | WE-VGISC?? |  |  | 6 |

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