WMO OMM



World Meteorological Organization Organisation météorologique mondiale Organización Meteorológica Mundial Всемирная метеорологическая организация المنظمة العالمية للأرصاد الجوية 世界气象组织 Secrétariat

7 bis, avenue de la Paix – Case postale 2300 CH 1211 Genève 2 – Suisse Tél.: +41 (0) 22 730 81 11 Fax: +41 (0) 22 730 81 81 wmo@wmo.int – www.wmo.int

Our ref.: 8384-16/WDS-DPFS/New Manual on GDPFS-2016

GENEVA, 15 June 2016

Annexes: 2 (available in English only)

- Subject: Revision of the *Manual on the Global Data-processing and Forecasting System* (*GDPFS*) (WMO-No. 485)
- Action required: To confirm the mapping of the WMC and/or RSMC currently hosted by your Service onto the new designations (taking into account their functions described in the revised *Manual on the GDPFS*) at your earliest convenience **but not later than 15 August 2016**

Dear Sir/Madam,

The Manual on the Global Data-processing and Forecasting System (GDPFS) (WMO-No. 485) is the single source of technical regulations for all operational data-processing and forecasting systems of WMO Members, including their designated meteorological centres. Following the request by the Commission for Basic Systems, at its fourteenth session (CBS-XIV, 2009), progress has been made with the revision of the Manual on the GDPFS, including the development of an outline for a new Manual, which was adopted by the Sixteenth World Meteorological Congress (Cg-XVI, 2011) through Resolution 6 (Cg-XVI). Noting that the new Manual introduces a number of changes to the current procedures, the Commission for Basic Systems, at its 2014 extraordinary session (CBS-Ext.(2014)), considered the comprehensive summary of changes of functions and procedures that would ensure a smooth transition to the new Manual. Acknowledging that the new Manual is being developed in accordance with guality management principles, which ensure its sustainability as part of the WMO Quality Management Framework (QMF), and would facilitate the review of compliance of GDPFS Centres against the designation criteria, CBS-Ext.(2014) recommended a roadmap for the completion of the new Manual (which will replace the current version), including transition arrangements for its implementation to manage the technical changes and the initial designation of the GDPFS Centres as defined in the new Manual, including World Meteorological Centres (WMCs) and Regional Specialized Meteorological Centres (RSMCs), which were approved by the Seventeenth World Meteorological Congress (Cq-17, 2015) in Resolution 12 (Cg-17).

I wish to bring to your attention that the new Manual introduces a clear definition for a WMC, for which a WMC shall be appointed if fulfilling the following functions:

- RSMC for global deterministic numerical weather prediction;
- RSMC for global ensemble numerical weather prediction; and
- RSMC for global numerical long-range prediction (known as Global Producing Centre for Long-range Forecasts).
- To: Permanent Representatives of Members of Algeria, Argentina, Armenia, Australia, Austria, Brazil, Canada, China, Egypt, Fiji, France, Germany, Hungary, India, Italy, Japan, Kenya, Korea (Republic of), Netherlands, New Zealand, Norway, Russian Federation, Saudi Arabia, Senegal, Serbia, South Africa, Spain, Sweden, Tunisia, Turkey, UK, USA and Uzbekistan Director General of ECMWF

In addition, as per the summary of changes of functions and procedures, RSMCs with geographical specialization would become RSMCs with specialization in one (or more) of the following activities:

- RSMC for regional severe weather forecasting;
- RSMC for global deterministic numerical weather prediction;
- RSMC for limited-area deterministic weather prediction;
- RSMC for global ensemble numerical weather prediction; and
- RSMC for limited-area ensemble numerical weather prediction.

RSMCs with other activity specialization are redefined in the new Manual for clarity in the description of functions, not altering the designation criteria.

As part of the above-mentioned roadmap, WMO Members hosting a WMC and/or an RSMC are invited to confirm the mapping of the WMC and/or RSMC currently hosted by your Service (as per Appendix I-1 of the current version of the Manual on the GDPFS, Annex I) onto the corresponding designations (taking into account their functions described in the revised Manual on the GDPFS) at your earliest convenience **but not later than 15 August 2016**. Also for your easy reference, I wish to inform you that the draft version of the revised Manual (table of contents given in Annex II) is available on the WMO website at:

https://www.wmo.int/pages/prog/www/DPS/Manual/Table-of-content_Manual-gdpfs.html

This version takes into account comments received by WMO Members following the request to review its content in the WMO circular letter ref. WDS-DPFS/New Manual on GDPFS-2015, dated 11 May 2015.

I wish to recall that as part of the transitional arrangements recommended by CBS-Ext.(2014), Cg-17 agreed that the existing WMCs and RSMCs will retain their status until the Eighteenth session of the World Meteorological Congress (Cg-18) in 2019; and to retain status after Cg-18, they need to demonstrate compliance by Cg-18.

I would like to take this opportunity to express my personal gratitude to you and your Service for your continued support in making meteorological products of the WMO's Global Data-processing and Forecasting System (GDPFS), including Emergency Response Activities (ERA), increasingly more relevant in the world.

Yours faithfully,

(E. Manaenkova) for the Secretary-General

Confirmation form for mapping of the WMC and/or RSMC hosted by your Centre

WMO MEMBER: Focal Point:

E-mail address:

Q1. World Meteorological Centre (WMC)

The new Manual introduces a clear definition for a WMC, which WMC shall be appointed if fulfilling the following functions:

- RSMC for global deterministic numerical weather prediction;
- RSMC for global ensemble numerical weather prediction; and
- RSMC for global numerical long-range prediction (known as GPC).

If you currently host a WMC, please answer YES or No to confirm your will to map its functions onto a new designation of WMC.

Designated Centre	Mapping confirmation (Yes/No)
Melbourne (southern hemisphere only)	
Moscow	
Washington	

Q2. Regional Specialized Meteorological Centre (RSMC) with geographical specialization

RSMCs with geographical specialization would become RSMCs for one (or more) of the following activities:

- (1) RSMC for regional severe weather forecasting;
- (2) RSMC for global deterministic numerical weather prediction;
- (3) RSMC for limited-area deterministic weather prediction;
- (4) RSMC for global ensemble numerical weather prediction; and
- (5) RSMC for limited-area ensemble numerical weather prediction.

If you currently host an RSMC with geographical specialization, please answer YES if you confirm your will to map its functions onto a new designation(s) of one (or more) of RSMC(s).

Designated Centre	(1) RSMC for regional severe weather forecasting	(2) RSMC for global deterministic numerical weather prediction	(3) RSMC for limited-area deterministic weather prediction	(4) RSMC for global ensemble numerical weather prediction	(5) RSMC for limited-area ensemble numerical weather prediction
Algiers		•		•	
Beijing					
Brasilia					
Buenos					
Aires					
Cairo					
Dakar					
Darwin					
Exeter					
Jeddah					
Khabarovsk					
Melbourne					

Miami			
Montreal			
Moscow			
Nairobi			
New Delhi			
Novosibirsk			
Offenbach			
Pretoria			
Rome			
Tashkent			
Tokyo			
Tunis			
/Casablanca			
Washington			
Wellington			

Q3. Regional Specialized Meteorological Centre (RSMC) with activity specialization

If you currently host an RSMC with activity specialization, please answer YES or No to confirm your will to map its functions onto a new designation of its corresponding RSMC.

Designated Centre	Mapping confirmation (Yes/No)
Global Producing Centre for Long-range Fo	precasts (GPC)
Beijing	
CPTEC (Brazil)	
Exeter	
Melbourne	
Montreal	
Moscow	
Pretoria	
Seoul	
Tokyo	
Toulouse	
Washington	
European Centre for Medium-range	
Weather Forecasts (ECMWF)	
Tropical Cyclone Centre / Hurricane Centre	e / Typhoon Centre
Nadi – Tropical Cyclone Centre	
New Delhi – Tropical Cyclone Centre	
Miami – Hurricane Centre	
Tokyo – Typhoon Centre	
La Réunion – Tropical Cyclone Centre	
Honolulu – Hurricane Centre	
RSMC for Atmospheric Sand and Dust stor	m Forecasts
Barcelona	
RSMC for Nuclear Environmental Emergen	cy Response and/or Backtracking
Beijing	
Exeter	
Melbourne	
Montreal	
Obninsk	
Offenbach (backtracking only)	
Tokyo	
Toulouse	
Vienna (backtracking only)	
Washington	

Regional Climate	e Centre	
Africa hosted by the African Centre of		
Meteorological Applications for		
Development (A	CMAD) (RA I)	
Beijing (RA II)		
Tokyo (RA II)		
Moscow (RA II)		
Western South America hosted by the International Research Centre on El Niño (RA III)		
Network (RA VI)	De Bilt (Climate Data Service)	
	Offenbach (Climate Monitoring)	
	Toulouse (Long-range Forecasts)	
	Moscow (Long-range	
	Forecasts)	

If you currently host an RSMC with activity specialization for Region VI (Europe), please answer *YES* or *No* to confirm your will to map its functions onto a new designation and indicate the corresponding RSMC.

Designated Centre	Mapping confirmation (Yes/No), if yes, please indicate the corresponding RSMC	
RSMC for Medium-range Weather Forecasts for Region VI (Europe)		
ECMWF		
RSMC for the Provision of Ultraviolet-index forecasts for Region VI (Europe)		
Offenbach		

TABLE OF CONTENTS

INTRODUCTION

PART I – OUTLINE OF THE WMO GLOBAL DATA-PROCESSING AND FORECASTING SYSTEM (GDPFS)

1. PURPOSE AND SUPPORTED ACTIVITIES

- **General description** 1.1
- 1.2. Activities supported by the GDPFS

2. CENTRES

- Definitions 2.1
 - Appendix A.I.2.1 Definitions of meteorological forecasting ranges
- 2.2 **Designation process**

3. COORDINATION WITH OTHER SYSTEMS OR PROGRAMMES

PART II – SPECIFICATIONS OF GDPFS ACTIVITIES

1. OVERALL REQUIREMENTS AND STANDARDS

- Quality control of incoming observations 1.1. Appendix A.II.1.1-a Techniques for monitoring the guality of observations Appendix A.II.1.1-b Procedures and formats for the exchange of monitoring results
- 1.2. Data collection and product dissemination
- 1.3. Long-term storage of data and products
- 1.4. Product verification
- 1.5. **Documentation on system and products**
- 1.6. Training
- 1.7. **Reporting on compliance**
- 1.8. Graphical representation of observations, analyses and forecasts

2. SPECIFICATION OF ACTIVITIES AND PROCEDURES FOR THEIR MODIFICATION

General purpose activities 2.1

2.1.1. **Global Deterministic Numerical Weather Prediction**

Appendix A.II.2.1.1-a Minimum list of global deterministic NWP products to be made available on the WIS

Appendix A.II.2.1.1-b Characteristics of global deterministic NWP systems

2.1.2. Limited Area Deterministic Numerical Weather Prediction

Appendix A.II.2.1.2-a Minimum list of limited area deterministic NWP products to be made available on the WIS

Appendix A.II.2.1.2-b Characteristics of limited area deterministic NWP systems

Global Ensemble Numerical Weather Prediction 2.1.3.

- Appendix A.II.2.1.3-a Minimum list of global EPS products to be made available on the WIS
- Appendix A.II.2.1.3-b Characteristics of global EPS
- 2.1.4. Limited Area Ensemble Numerical Weather Prediction
- Appendix A.II.2.1.4-a Minimum list of limited area EPS products to be made available on the WIS

Appendix A.II.2.1.4-b Characteristics of limited area EPS

Global Numerical Long-range Prediction 2.1.5.

- Appendix A.II.2.1.5-a Mandatory and highly recommended seasonal numerical prediction products to be made available on the WIS
- Appendix II.2.1.5-b Characteristics of seasonal numerical prediction systems

Appendix II.2.1.5-c Additional seasonal numerical prediction products to be made available on the WIS

2.1.6. **Numerical Ocean Wave Prediction**

Appendix A.II.2.1.6-a Minimum list of numerical ocean wave prediction products to be made available on the WIS

Appendix A.II.2.1.6-b

Appendix A.II.2.1.6-c Characteristics of global NOWP systems

Global Numerical Ocean Prediction 2.1.7

Appendix A.II.2.1.7-a Minimum list of global numerical ocean prediction products to be made available on the WIS

Appendix A.II.2.1.7-b

Appendix A.II.2.1.7-c Characteristics of global NOP systems

2.1.8. Nowcasting

Appendix II.2.1.8 Characteristics of Nowcasting systems

2.2 Specialized activities

Regional Severe Weather Forecasting 2.2.2.

2.2.3. Regional climate prediction and monitoring

Appendix A.II.2.2.3-a RCC mandatory functions Appendix A.II.2.2.3-b Additional highly recommended RCC functions

Annex A.II.2.2.3-annex Guidelines for feedback from RCCs/NHMSs to GPCs

Coordination of Multi Model Ensemble Prediction for Long Range 2.2.4. **Forecasts**

Appendix A.II.2.2.4-a Minimum information to be available from LCs-LRFMME

Appendix A.II.2.2.4-b Additional information to be available from LCs-LRFMME

Appendix A.II.2.2.4-c Access to GPC data and visualization products held by the Lead Centres for LRFMME

2.2.5. **Tropical Cyclone Forecasting, including marine-related hazards**

2.2.6. **Volcanic Contaminants**

Marine Meteorological Services 2.2.7.

2.2.8. **Nuclear Environmental Emergency Response**

Appendix A.II.2.2.8-a Activation of support for nuclear emergency response and standards in the provision of international services by RSMCs

- Appendix A.II.2.2.8-b Minimum list of products and rules for displaying products
- Appendix A.II.2.2.8-c Default emission source parameters

Appendix A.II.2.2.8-d Characteristics of atmospheric transport modelling system

Appendix A.II.2.2.8-e Request form to activate RSMC support Appendix A.II.2.2.8-f Specifications for support to CTBTO

2.2.9. Non-nuclear Environmental Emergency Response

Appendix A.II.2.2.9-a Activation of support for non-nuclear emergency response

Appendix A.II.2.2.9-e Request form to activate RSMC support

Appendix A.II.2.2.9-f Users interpretation guide for non-nuclear atmospheric transport model products provided by RSMCs

2.2.10. Atmospheric sand and dust storm forecasting

Appendix A.II.2.2.10-a Minimum list of atmospheric sand and dust storm products to be made available on the WIS

Non real-time coordination activities 2.3

2.3.1. **Coordination of deterministic NWP verification**

Appendix A.II.2.3.1 I – Standardized verification of deterministic NWP products

Coordination of EPS verification 2.3.2.

Appendix A.II.2.3.2 II – Standard verification measures of global EPS

Coordination of LRF verification 2.3.3.

Appendix A.II.2.3.3 II - Standardized verification System for long-range forecasts (SVSLRF)

- 2.3.4. Coordination of ocean wave forecast verification
- 2.3.5 Coordination of tropical cyclone forecast verification
- 2.3.6. **Coordination of observation monitoring**

PART III – GDPFS IMPLEMENTATION

ACRONYMS

INDEX