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| 天气 气候 水 | **世界气象组织**  **世界气象大会**  **第十九次届会** 2023年5月22日至6月2日，日内瓦 | **Cg-19/文件4.2(7)** |
| 提交者： 全会主席  2023.5.26  **APPROVED** |

**议题4： 支持长期目标的技术战略**

**议题4.2： 地球系统观测和预测**

# 根据WMO统一数据政策 修订《全球数据处理与预报系统手册》（WMO-No. 485）



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**总体考虑**

**简介**

1. 世界气象大会在其2021年特别届会上通过了《WMO关于地球系统数据国际交换的统一政策》([决议1 (Cg-Ext(2021))](https://library.wmo.int/doc_num.php?explnum_id=11114#page=8)。该决议明确指出：核心数据产品的定义见《[全球数据处理与预报系统手册](https://wmoomm-my.sharepoint.com/personal/fli_wmo_int/Documents/M_Drive/M%20TRANSLATION/2022-CL-Nomin-Add-Experts-Exp-Network-INFCOM-31310-221414_zh.docx)》(WMO-No. 485)。

2. 为此，拟对该《手册》作如下修订：

(a) 第一步，重新定义作为核心数据、来自以下四类RSMC的强制性产品：

(i) 开展全球确定性和集合数值天气预报(NWP)的RSMC；

(ii) 开展全球次季节数值预报和长期预测的RSMC；

(b) 取消目前要求的密码保护，以便从负责协调年度到十年气候预测的牵头中心获取数据。

3. 连同执行理事会在其第七十六次届会上通过[决议30(EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7b4AD55929-1F3B-4A3B-B7A8-26804010ED39%7d&file=EC-76-d03-2(13)-AMENDMENTS-MANUAL-GDPFS-approved_zh.docx&action=default)批准的对《全球数据处理与预报系统手册》(WMO-No.485)的修订，根据《[基本文件](https://library.wmo.int/index.php?lvl=notice_display&id=14206#.ZCvQvnZBw2w)》(WMO-No.15)总则第第一百条第1款，所有修订(与中心指定相关的除外)将于2024年3月1日起生效。

4. EC-76批准的中心指定相关修订将于2023年9月15日生效。作为[建议24 (INFCOM-2)](https://meetings.wmo.int/INFCOM-2/_layouts/15/WopiFrame.aspx?sourcedoc=%7b206DC1CA-2C57-4561-A0CA-C9BB69F5B3C7%7d&file=INFCOM-2-d06-4(2)-AMENDMENTS-TO-GDPFS-MANUAL-WMO-NO-485-approved_zh.docx&action=default)的附件通过的决议草案已作相应修改。

5. 针对会员提出的获取高分辨率NWP数据的要求，已制定了一套新的高分辨率NWP指导方针。遵照观测、基础设施与信息系统委员会(INFCOM)的指导意见，INFCOM管理组在其会议(2023年3月20至24日，瑞士日内瓦)上批准了该指导方针的最终草案。该指导方针计划于Cg-19前发表。

**预期行动**

6. 根据上述情况，大会似宜通过措辞大致如下的决议草案4.2(7)/1 (Cg-19)。

**决议草案**

**决议草案4.2(7)/1 (Cg-19)**

**根据WMO统一数据政策修订《全球数据处理与预报系统手册》（WMO-No. 485）**

世界气象大会，

**忆及：**

(1) [决定57 (EC-68)](https://library.wmo.int/doc_num.php?explnum_id=3172#page=175) – 协助会员改进使用高分辨率数值天气预报（NWP）和实施有限区域NWP系统的战略，

(2) [决议18 (EC-69)](https://library.wmo.int/doc_num.php?explnum_id=3790#page=162) – 《修订全球数据处理与预报系统手册》（WMO-No. 485），

(3) [决议1 (Cg-Ext(2021))](https://library.wmo.int/doc_num.php?explnum_id=11114#page=8) – WMO关于地球系统数据国际交换的统一政策，

(4) [决议26 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7bD55A40F8-9643-41A4-A6C6-3E5BCCC1BFB2%7d&file=EC-76-d03-2(9)-DESIGNATION-GPC-LRF-GPC-SSF-AND-LC-SSFMME-approved_zh.docx&action=default) – 指定全球长期预报制作中心（GPC-LRF）、全球次季节预报制作中心（GPC-SSF）以及次季节预报多模式集合协调牵头中心（LC-SSFMME），

(5) [决议27 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7bB5EE2E3B-081D-47B8-AA20-490A933E2908%7d&file=EC-76-d03-2(10)-TERMINATION-REPORT-GDPFS-NWP-approved_zh.docx&action=default) – 终止WMO全球数据处理和预报系统（GDPFS）及数值天气预报（NWP）研究年度技术进展报告，

(6) [决议30 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7b4AD55929-1F3B-4A3B-B7A8-26804010ED39%7d&file=EC-76-d03-2(13)-AMENDMENTS-MANUAL-GDPFS-approved_zh.docx&action=default) – INFCOM和SERCOM联合提议的对《全球数据处理与预报系统手册》（WMO-No. 485）的修订，

**进一步忆及**《[基本文件](https://library.wmo.int/index.php?lvl=notice_display&id=14206#.ZCvQvnZBw2w)》（WMO-No. 15）总则第一百条第1款，

**注意到**高分辨率NWP指导方针的定稿，

**审查了**[建议24 (INFCOM-2)](https://meetings.wmo.int/INFCOM-2/_layouts/15/WopiFrame.aspx?sourcedoc=%7b206DC1CA-2C57-4561-A0CA-C9BB69F5B3C7%7d&file=INFCOM-2-d06-4(2)-AMENDMENTS-TO-GDPFS-MANUAL-WMO-NO-485-approved_zh.docx&action=default) - 根据WMO统一数据政策修订《全球数据处理与预报系统手册》（WMO-No. 485），

**考虑到**需要对《手册》中使用的术语进行明确定义，以帮助其在WMO统一数据政策背景下获得恰当理解*，*

**同意**对《[全球数据处理与预报系统手册](https://library.wmo.int/index.php?lvl=notice_display&id=12793#.YzrQrHZBw2w)》(WMO-No. 485)的修订，详见本决议[附件](#annex1)1至5以及[决议26 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7bD55A40F8-9643-41A4-A6C6-3E5BCCC1BFB2%7d&file=EC-76-d03-2(9)-DESIGNATION-GPC-LRF-GPC-SSF-AND-LC-SSFMME-approved_zh.docx&action=default)、[决议27 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7bB5EE2E3B-081D-47B8-AA20-490A933E2908%7d&file=EC-76-d03-2(10)-TERMINATION-REPORT-GDPFS-NWP-approved_zh.docx&action=default)和[决议30 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7b4AD55929-1F3B-4A3B-B7A8-26804010ED39%7d&file=EC-76-d03-2(13)-AMENDMENTS-MANUAL-GDPFS-approved_zh.docx&action=default)（与指定中心有关的修订除外），自2024年3月1日起生效，

**进一步同意**，《全球数据处理与预报系统手册》(WMO-No. 485)与中心指定相关的修订自2023年9月15日起生效，详见[决议26 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7bD55A40F8-9643-41A4-A6C6-3E5BCCC1BFB2%7d&file=EC-76-d03-2(9)-DESIGNATION-GPC-LRF-GPC-SSF-AND-LC-SSFMME-approved_zh.docx&action=default)和[决议30 (EC-76)](https://meetings.wmo.int/EC-76/_layouts/15/WopiFrame.aspx?sourcedoc=%7b4AD55929-1F3B-4A3B-B7A8-26804010ED39%7d&file=EC-76-d03-2(13)-AMENDMENTS-MANUAL-GDPFS-approved_zh.docx&action=default)，

**要求**INFCOM：

(1) 在GDPFS手册中按需要对“强制性产品”和“高度推荐产品”以及其他术语进行明确定义，

(2) 参考高分辨率NWP指导原则，与执行理事会共同编制使用高分辨率NWP和实施有限区域NWP系统的胜任力框架，

**授权**秘书长与INFCOM主席协商对《[全球数据处理与预报系统手册](https://library.wmo.int/index.php?lvl=notice_display&id=12793#.YzrQrHZBw2w)》（WMO-No. 485）进行编辑性修订。

[附件：5个](#annex1) （仅以英文提供）

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注：本决议取代“[决定57 (EC-68)](https://library.wmo.int/doc_num.php?explnum_id=3172#page=175) – 协助会员改进使用高分辨率NWP和实施有限区域NWP系统的战略”，后者不再生效。

## Annex 1 to draft Resolution 4.2(7)/1 (Cg-19)

*[Proposed amendments are highlighted in addition ~~or deletion~~ to the Manual in the Global Data-processing and Forecasting System (WMO-No. 485) and the numbering of the text below refers to the Manual.]*

***2.2.1.1 Global deterministic numerical weather prediction***

Regional Specialized Meteorological Centres conducting global deterministic NWP shall:

(a) Produce global analyses of the three‑dimensional structure of the atmosphere;

(b) Produce global forecast fields of basic and derived atmospheric parameters;

(c) Make available on WIS a range of these products; the list of mandatory products as ~~mandatory~~ core data and highly recommended ~~global deterministic NWP~~ products to be made available is given in Appendix 2.2.1;

(d) Produce verification statistics according to the standard defined in Appendix 2.2.34, and make them available to the Lead Centre(s) for DNV;

(e) Make available on a website up‑to‑date information on the characteristics of their global NWP systems. The minimum information to be provided is given in Appendix 2.2.2.

Note: The definition of core data is described in Resolution 1 (Cg-Ext. (2021)). [Japan, *Secretariat*]

## Annex 2 to draft Resolution 4.2(7)/1 (Cg-19)

***2.2.1.3 Global ensemble numerical weather prediction***

Centres conducting global ensemble NWP shall:

(a) Produce global ensemble forecast fields of basic and derived atmospheric parameters;

(b) Make available on WIS a range of these products; the list of mandatory products as  ~~mandatory~~ core data and highly recommended ~~global ensemble NWP~~ products to be made available is given in [Appendix 2.2.5](#_bookmark67);

(c) Make verification statistics available to the Lead Centre(s) for EPS verification according to the standard defined in [Appendix 2.2.35](#_bookmark132);

(d) Make available on a website up‑to‑date information on the characteristics of their global EPS; the minimum information to be provided is given in [Appendix 2.2.6](#_bookmark69).

Note: The definition of core data is described in Resolution 1 (Cg-Ext. (2021)).

## Annex 3 to draft Resolution 4.2(7)/1 (Cg-19)

***2.2.1.5 Global numerical sub‑seasonal forecasts***

2.2.1.5.1 Centres conducting global numerical SSFs (GPCs for Sub‑seasonal Forecasts (GPCs‑SSF)) shall:

Note: Functions are defined for the sub‑seasonal (10 days–4 weeks) forecasting activity.

(a) With at least weekly frequency, generate SSF products with global coverage;

(b) Make available on WIS a range of these products; the list of mandatory products as ~~mandatory~~ core data and highly recommended products to be made available is given ~~are listed~~ in Appendix 2.2.41;

(c) Produce verification statistics according to the standard defined in Appendix 2.2.45, and make them available on a website;

(d) Provide an agreed set of forecast and hindcast variables (as defined in Appendix 2.2.43) to the Lead Centre(s) for Sub‑seasonal Forecast Multi‑model Ensemble (SSFMME);

(e) Make available on a website up‑to‑date information on the characteristics of their global numerical SSF systems; the minimum information to be provided is given in Appendix 2.2.42.

Note: The definition of core data is described in Resolution 1 (Cg-Ext. (2021)).

## Annex 4 to draft Resolution 4.2(7)/1 (Cg-19)

***2.2.1.6 Global numerical long‑range prediction***

Centres conducting global numerical long‑range prediction (GPCs for Long‑range Forecasts (GPCs‑LRF)) shall:

Note: Functions are defined for the seasonal (1–6 month) prediction activity.

(a) Generate LRF products with global coverage;

(b) Make available on WIS a range of these products; the list of mandatory products as  ~~mandatory~~ core data and highly recommended products to be made available is given ~~are listed~~ in [Appendix 2.2.9](#_bookmark75);

(c) Produce verification statistics according to the standard defined in [Appendix 2.2.36](#_bookmark136), and make them available on a website;

(d) Make available on a website up‑to‑date information on the characteristics of their global long‑range numerical prediction systems; the minimum information to be provided is given in [Appendix 2.2.10](#_bookmark77);

(e) Agree to provide forecast output to the Lead Centre(s) for LRF multi‑model ensembles (Lead Centre(s) for LRFMME), as detailed in [Appendix 2.2.17](#_bookmark91) (section 1).

Note: The definition of core data is described in Resolution 1 (Cg-Ext. (2021)).

## [*Japan*] [*Japan*] [*Japan*] [*Japan*]Annex 5 to draft Resolution 4.2(7)/1 (Cg-19)

2.2.2.4 Coordination of annual to decadal climate prediction

2.2.2.4.1 The centre(s) conducting coordination of ADCP (Lead Centre(s) for ADCP) shall:

(a) Select a group of modelling centres to contribute to the Lead Centre(s) for ADCP (the “contributing centres”) that meet the GPC‑ADCP designation criteria and have been approved by ET‑OCPS; and manage changes in the membership of the group, as and when they occur, to maintain sufficient contributions;

(b) Maintain a list of the active contributing centres and the specification of their prediction systems;

(c) Collect an agreed set of hindcast, forecast and verification data (Appendices 2.2.20 and 2.2.21) from the contributing centres;

(d) Make available ~~(on a password‑protected website, as needed)~~ agreed forecast products in standard format, including multi‑model ensemble products (Appendix 2.2.20);

(e) Make available on the website agreed hindcast verification products in standard format, including verification of the multi‑model ensemble products (Appendix 2.2.21);

(f) Redistribute digital hindcast and forecast data for those contributing centres that allow it;

(g) Maintain an archive of the real‑time forecasts from individual contributing centres and from the multi‑model ensemble system;

(h) Promote research and experience in ADCP techniques and provide guidance and support on ADCP to RCCs and NMHSs;

(i) Based on comparison among different models, provide feedback to the contributing centres on model performance;

(j) Coordinate, in liaison with relevant World Climate Research Programme activities, an annual consensus prediction product giving global prospects for the next 1–5 years.

2.2.2.4.2 Access to data and visualization products held by a Lead Centre for ADCP should follow the rules as detailed in Appendix 2.2.19.

Note: The bodies in charge of managing the information contained in the present Manual related to coordination of ADCP are specified in the table below.

SECTION: Chapter

Chapter title in running head: PART II. SPECIFICATIONS OF GLOBAL DATA-…

Appendix 2.2.19. Access to data and visualization products held by the Lead Centre(s) for annual to decadal climate prediction

(a) ~~As needed, access to data from the Lead Centre(s) for ADCP website(s) will be password protected.~~

(b) ~~Digital data will be redistributed only in cases where the contributing centre data policy allows it. In other cases, r~~Requests for contributing centre output should be referred to the relevant contributing centre in cases where the digital hindcast and forecast data from the relevant contributing centre is not archived at the LC.

~~(c)~~ ~~Contributing centres, RCCs, NMHSs and institutions coordinating RCOFs are eligible for password‑protected access to information held and produced by the Lead Centre(s) for ADCP.~~

~~(d)~~ ~~Institutions other than those identified in (c) above may also request access to Lead Centre(s) for ADCP products. These i~~Institutions, including research centres, except contributing centres, RCCs, NMHSs and institutions coordinating RCOFs may not use Lead Centre(s) for ADCP products to generate and display/disseminate independent products for operational forecasting. These institutions must agree with these restrictions ~~to be eligible for access. Prior to access being granted to an applicant institution, the Lead Centre(s) for ADCP will refer the application to the INFCOM/ET‑OCPS through the WMO Secretariat for final consultation and review. Decisions to allow access must be unanimous. The Lead Centre(s) will be informed by the WMO Secretariat of such new users accepted for access~~.

~~(e)~~ ~~A list of users provided with password access will be maintained by the Lead Centre for ADCP and reviewed periodically by the INFCOM/ET‑OCPS, to measure the degree of effective use and also to identify any changes in status of eligible users, and determine further necessary follow‑up.~~

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