Status of Climate Data Management Systems Questionnaire

Deadline for submission to WMO: **YYYYMMDD**

Further to the CLICOM project, WMO initiated in the late 1990s a Climate Database Management System (**CDMS**) project to meet the varied and growing data management needs of WMO members. Several CDMSs have been proposed to members who have had the opportunity to install them as an operational tool.

The objectives of this questionnaire are firstly to ascertain the situation of tools used for managing climatological data and, secondly, to assess the difficulties faced by National Meteorological and Hydrometeorological Services (**NMHS**s) as well as to identify new requirements which are not fulfilled presently.

This questionnaire is intended for NMHS and will enforce WMO projects on Climatological data management. The questionnaire is technical and should be answered by the Database manager of the climate system.

Thank you for taking time to complete this questionnaire which will enable WMO to provide efficient help and effort in the CDMS project.

If you have any problems completing the questionnaire please send a message to XXXXX telephone: XXXXXX e-mail: XXXXX

You can also download the numeric version of the questionnaire at the following address: ft://xxxxxxx.xx

Identification

1 Name of the National Meteorological and Hydrological Service (NMHS).

2 Name and contact of the person who filled in this questionnaire.

Tel:
Fax:
E-Mail:

3 Name and contact information of the officer in charge of the management of the climatological data in the NMHS.

Tel:
Fax:
E-Mail:

Computerisation status and software in use

4 Are you using computer(s) to store and manage your climatological data?

YES ☐ **NO** ☐

5 Are you using Relational Data Base Management System(s) (RDBMSs) for your climatological data?

YES ☐ **NO** ☐

6 If yes, specify which RDBMS you are using.

In italic 2 example answers are shown. Just add your answer in the following free line(s) of the table.

RDBMS	Version	Operating System (OS)	Version of the OS
e.g. DataEase	*5.1*	*WINDOWS*	*WINDOWS 2000*
e.g. ORACLE	*9g*	*LINUX*	*REDHAT 7*

7 If you are NOT using a RDBMS, which software are you using to store your climatological data?

Please make clear if you are using a system based on flat files developed on your own, or based on a commercial tool as spreadsheets. If possible please specify the version used and the Operating System implementation with its version.
In italic 3 example answers are shown. Just add your answer in the following empty line(s) of the table.

System	Name	Version	Operating System (OS)	Version of the OS
e.g. Spreadsheet	*Excel*	*Excel 2000*	*WINDOWS*	*WINDOWS XP*
e.g. Flat files	*"Home-made"*	*-*	*LINUX*	*REDHAT 7*
e.g. Spreadsheet	*Open Office*	*3*	*WINDOWS*	*WINDOWS VISTA*

Climate Data Management System (CDMS) in use

8 Was the CDMS you are using developed by your NMHS?

YES ☐ **NO** ☐

9 Are you using any of the following CDMS? If YES specify, if possible, the date of its installation in your service.

CDMS name	Editor	YES	Date of installation in the service
AMS	Food and Agriculture Organization (FAO)	☐	
CLDB	Microstep-MIS company	☐	
CLICOM	WMO	☐	
CLIDATA	Czech Republic NMHS	☐	
CLIMSOFT	Zimbabwe NMHS	☐	
CLISYS	France NMHS	☐	
CLIWARE	Russian Federation NMHS	☐	
JCDMS	Jordan NMHS	☐	
QUALIMET	Ernst Basler + Partner company	☐	
SDCLIM	Tunisia NMHS	☐	

10 If you are using other Climate Data Management Systems (not listed previously) please specify their names and who the editors or developers are.

CDMS name	Editor/Developer	Date of installation in the service

11 Through what mechanism did you get your CDMS?

If your answer is “Through bilateral agreement” or “Purchased from a private company” please specify the country or the company from which the CDMS has been acquired. Feel free to add other mechanisms if needed.

Mechanism	YES	With which country or from which private company name
Developed on your own	☐	
Through WMO	☐	
Through bilateral agreement	☐	
Purchased from a private company	☐	
You do not know	☐	

CDMS Status

12 How your CDMS hardware and software are operational?

Status	YES
Fully operational, CDMS hardware and software operate without technical problems	☐
Partially operational, some CDMS hardware or software components are not working properly	☐
Not operational, CDMS hardware or software is out of order	☐

If your answer is "**Partially operational**" or "**Not operational**" please make some comments (in the following point) to explain the current situation and eventually planned actions to recover a "**fully operational**" status (hardware trouble, software trouble, etc.)

13 Comments (if "partially operational" or "not operational" at the previous question)

14 Overall, are you satisfied with the functions offered by your CDMS?

YES ☐ **NO** ☐

15 Are there functions you would like to add or enhance on your CDMS? If yes specify them in the following table.

16 List any difficulty you face in managing your climatological data?

Feel free to add any other mentioned difficulties if required.

Difficulty	YES
Lack of expertise in climatological data management or on climatological practices	☐
Lack of expertise in statistics	☐
Lack of expertise in computer science	☐
Lack of budget (development, equipment, maintenance…)	☐
Lack of human resources	☐
	☐
	☐
	☐

For NMHSs that intend to develop or migrate to a new CDMS

17 Do you plan to change your current CDMS?

YES ☐ **NO** ☐

18 If YES, what would be your future CDMS?

Future CDMS	YES
A CDMS that already exists and that is currently distributed by a NMHS or a private company	☐
A CDMS that would be developed by yourself	☐
A CDMS that would be developed by a private company according your specifications	☐
You do not know yet	☐

Status on CLIMAT message (FM71- CLIMAT) generation

19 How do you generate your CLIMAT messages?

CLIMAT message generation type	YES
1. Your CLIMAT messages generation is **not** an automatic process (generated manually or through several processes that need human operations)	☐
2. The CDMS you are using (e.g. CLICOM) generates your CLIMAT messages	☐
3. You have developed your own program to generate CLIMAT messages	☐
4. You are using the CLIREP application initiated by WCP/GCOS and distributed freely by WMO	☐
5. You are using a specific application not developed by your institution and this application is not CLIREP and is not part of your CDMS	☐
6. You do not generate CLIMAT message	☐
7. You do not know	☐

20 If you are using the CLIREP application (answer 4 of question 19), what are the functions or enhancements you would like to see in a future version of CLIREP?

Function/enhancement	Explanation

21 If you are using a specific application (answer 5 of question 19), please give details.

Name of the application	
Developed by	
Distributed by	
Date of its installation in your organization	

CLIMAT message & WMO Migration to Table-driven Code Forms

The Fourteenth WMO Congress (2003) has confirmed that the **T**able-**D**riven **C**ode **F**orms (TDCF) will replace the **T**raditional **A**lphanumeric **C**odes (**TAC**) such as the FM71-CLIMAT.

The Table-driven Code Forms (TDCF) includes the tables driven codes:

- **BUFR** (**B**inary **U**niversal **F**orm for the **R**epresentation of meteorological data) and
- **CREX** (**C**haracter form for the **R**epresentation and **EX**change of data).

BUFR is the preferred format for the future, CREX is an interim solution.

In 2003 The WMO code migration schedule planned was:

- to start operational exchange in November 2005 and
- to get to a complete migration in November 2010.

22 Will the process within your service that generates the CLIMAT message be ready for coding the CLIMAT messages in TDCF in November 2010?

YES	☐
NO	☐
YOU DO NOT KNOW	☐

References for TDCF

THE WMO TABLE DRIVEN CODES:
THE 21ST CENTURY UNIVERSAL OBSERVATION CODES
http://www.wmo.int/pages/prog/www/WMOCodes/MigrationTDCF/Plan/Introduction_en.pdf

SUMMARY OF THE PLAN FOR MIGRATION TO TABLE-DRIVEN CODE FORMS (TDCF)
http://www.wmo.int/pages/prog/www/WMOCodes/MigrationTDCF/Plan/SummaryMigraPlan_en.pdf

General comments on the CDMS

23 General comments

Glossary and Definitions

CDMS	**C**limate **D**atabase **M**anagement **S**ystem. A database designed to manage climate data.
CLICOM	**CL**Imate **COM**puting project. – A climate database developed under the auspices of the WMO and designed to run on a DOS or Microsoft Windows operating system.
CLIMAT	An international computer exchange format for climate information from defined surface observation sites. These messages are generated and exchanged on a monthly basis between members of the WMO.
CLIMAT TEMP	Similar to CLIMAT messages but include data from upper air observations.
Climate data	Data used to describe or understand the climate system, which may include data corresponding to physical, chemical and biological properties, representing atmospheric, oceanic, hydrologic, cryospheric and terrestrial processes. The attributes of continuity and homogeneity are generally given high priority.
Climate data management	The Management of climate data in order to provide reliable quality data to users. Usually stored in a computerised database. The term can include the tools that are used to provide climate products to the customer.
CLIREP	Application for coding and decoding CLIMAT and CLIMAT TEMP messages initiated by WCP/ GCOS (developed by RIHMI-WCD) and distributed freely by WMO
Database	A collection of information organised in such a way that a computer program can quickly select desired pieces of data. The information within a database is usually interrelated.
DataBase Management System (DBMS)	The set of software used to develop, implement, manage and maintain data stored in a database.
DataEase	The RDBMS of the CLICOM CDMS
Excel	A spreadsheet program developed and marketed by Microsoft.
Flat file	A computer readable file in which records are not connected or 'related'
GCOS	**G**lobal **C**limate **O**bserving **S**ystem
Linux	Linux is an operating system kernel used by a family of Unix-like operating systems
NMHS	**N**ational **M**eteorological and **H**ydrological **S**ervice.
OpenOffice	application suite available for a number of different computer operating systems that includes a spreadsheet
Operating System (OS)	The system software in a computer responsible for control and management of hardware, system operations and processes. The operating system controls the operation of application software such as a word processor. The most well known operating systems for personal computers are Microsoft Windows, Mac OS (Apple computers) and Linux.
Oracle	A RDBMS produced and marketed by Oracle Corporation

Platform	In computer terminology this refers to the combination of hardware, software and operating system that is being used. Often used to refer just to the operating system.
RDBMS	**R**elational **D**ata**B**ase **M**anagement **S**ystem. Often used interchangeably with Relational Database but strictly refers to the system used to manage the database.
RedHat	a major Linux distribution vendor
Relational Database	A database where data is stored in related tables. Data from different tables can be retrieved or manipulated because there is a defined relationship between the tables.
RIHMI-WCD	Russian Research Institute for Hydrometeorological Information – World Data Center
Spreadsheet	A type of application program which manipulates numerical and string data in rows and columns of cells.
WCP	**W**orld **C**limate **P**rogramme
WMO	**W**orld **M**eteorological **O**rganization.