Climsoft, Free and Open Source, Climate Data Management System

Climsoft is a software suite for storing climatic data in a secure and flexible manner and for extracting useful information from data. Climsoft is a free open-source software, licensed under GPL3. It is widely used by the National Meteorological and Hydrological Services of developing countries.

Capabilities of Climsoft Version 4 Climate Data Management System (CDMS) that makes it suitable for use in many National Meteorological and Hydrological Services (NMHS) are:

1. Sustainability

Climsoft is a free climate Data Management System (CDMS) built on the freely available open source tools such as Visual Studio, MySQL/MARIADB making it less costly to implement and maintain. After the initial training, users are able to continuously support Climsoft operations on their own.

2. Scalability

Climsoft can be implemented in a standalone computer at the observatory as well as in the server at the centralized database at the NMHS headquarters. It therefore allows connectivity between the observatories and the remote database server thereby facilitating data digitization right from the source. It works very well in a multi-user environment allowing many users to access the centralized climate database concurrently for different operations.

3. User Management, Operations Monitoring and Quality of Data

Secure security access levels is guaranteed. It is easy to monitor data entered by different users, set a target for users to achieve and evaluate user work performance through Climsoft. It has got an elaborate key entry and post Key entry Quality Control (QC) functions.

4. Ingestion of data from Automatic Weather Station (AWS)

Climsoft automatically ingests data from Automatic Weather Stations (AWSs) on real time basis thereby making those observations to be available for weather forecasting purposes;

5. Data files Import and Export

Data files of different formats can be easily imported into Climsoft. It can exports data in formats ready for use by many climate applications that include RCLIMDEX, CPT, GEOCLIM, INSTAT, R-INSTAT, ENACTS, etc.

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6. Message Encoding and Forwarding to Global Telecommunication System (GTS)

Climsoft encodes observations into weather messages according the WMO standards of Table Driven Code Forms (TDCF). It is capable of forwarding those encoded messages to the WMO GTS network.

7. Management of images of paper records (paper archives) in support of Data Rescue (DARE)

Images of paper records can be stores and retrieved on the fly to facilitate immediate checking of key in data against the handwritten observation paper records.

8. Climate Products

Climsoft produces the standard WMO climate products from the archived and quality controlled data. The data inventory function is good and advanced (Ability to inventory available and missing data in both spreadsheet and graphical format);

9. Linkage with R – Instat, Climate Data Analysis Tool

Climsoft interrogate very well with R - Instat to produce variety of climate summaries and reports (including wind rose, time series plots, trend analysis graphs, calculations of the start/ends of rain, length of the season, spell length (dry/wet), Data Inventory graphs, spatial distribution maps, Examine trend and quantify the evidence of climate change (global warming), rainfall variability.etc.).

10. Technical Support and Software Maintenance

It is very easy and cheaper to get technical support, software maintenance and training.

Useful links:

1. [Climsoft GitHub page;](#)
2. [Map of Climsoft version 4 current status of rolling out in Countries](#);
3. [Software and Documentation on Climsoft](#);