

## DATA MANAGEMENT (DM) - (e.g. codes, monitoring)

*software offered to WMO Members for exchange*

| Notified to WMO / Updated | WMO Member    | Brief description of software available for exchange<br><a href="#">Website/Contact</a>  |
|---------------------------|---------------|--|
| 23/08/2010                | Canada        | libECBUFR: A general purpose, template-oriented BUFR encoding/decoding library. The library is written in the C language. The software is a library of BUFR-related functions. It comes with two utilities to decode and encode BUFR to and from ANSCII templates. The C code is quite generic and should compile on many platforms that can use the GNU toolchain. Released under the LGPL license.<br><a href="https://launchpad.net/libecbuf">https://launchpad.net/libecbuf</a>                                  |
| 09/08/2010                | Turkey        | METCAP can read data from multiple channels and can route meteorological bulletins to related channels. Channel types; File, SerialComports, FTP out, Mail out. METCAP visualise Actual charts (Synoptic, METCAR, TAF, TEMP), forecast charts (Wind and Temperature charts, SWC charts), create SkewTLogP diagram, visualise Snowtam, Lightning, Volcanic Ash polluted areas etc. METCAP can also prepare aviational reports for flights.<br><a href="http://www.dmi.gov.tr/Metcap">http://www.dmi.gov.tr/Metcap</a> |
| 10/11/2009                | United States | A library of functions and subroutines which can be used to encode and decode BUFR messages<br><a href="http://www.nco.ncep.noaa.gov/sib/decoders/BUFRLIB/">http://www.nco.ncep.noaa.gov/sib/decoders/BUFRLIB/</a>   |
| 10/11/2009                | United States | A library of functions and subroutines which can be used to encode and decode GRIB2 messages, as well as convert between GRIB2 and GRIB1<br><a href="http://www.nco.ncep.noaa.gov/pmb/codes/GRIB2/">http://www.nco.ncep.noaa.gov/pmb/codes/GRIB2/</a>  |
| 24/07/2009                | Germany       | METDATA Monitor. Germany offers the METDATA Monitoring software for use, free of charge, to WMO and all its Members. The software can be used on a PC (windows or linux) to implement the three following WWW monitoring exercises: the annual global monitoring of the operation of the WWW, the special monitoring of the exchange of Antarctic data and the integrated WWW monitoring.<br><a href="http://www.iblsoft.com/products/metdata">http://www.iblsoft.com/products/metdata</a>                           |

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| 02/06/2009                | Italy          | <p>SWS v1.0: The package enables to operate both automatically and manually a 'standard weather station' (SWS) assembled making use of COTS HW for PC/server, sensors, UPS, GPS clock and TDC as necessary. The package is based on the following 3 main modules controlled by a Supervisor program: INGEST -to gather, process and archive atmospheric variables coming from digital sensors; GUI -to manage and control the whole station and to produce TAC and BUFR messages; and SENDER -to transmit data and messages to remote central and local units. The configuration of the station is set up and modified by means of text tables.</p> <p><a href="ftp://ftp.meteoam.it">ftp://ftp.meteoam.it</a><br/> Contact: <a href="mailto:sws-us@meteoam.it">sws-us@meteoam.it</a> - to obtain the username and password</p> |
| 01/09/2008                | China          | <p>BufrDecoder (version 1.01) - Decodes BUFR messages and saves the element lists for each observation in the output files. The input file can contain a single BUFR message or multiple BUFR messages. The working directory can be configured by user, and the decoding process can be started manually at any time or automatically at the scheduled time. It also provides some assistant functions, such as browsing the decoded data and logs, as well as maintaining the input and output files at a regular interval.</p> <p>Contact: <a href="mailto:Ms LI Xiang lixiang@cma.gov.cn">Ms LI Xiang lixiang@cma.gov.cn</a></p>  |
| 20/08/2008                | United Kingdom | <p>Software to run on marine meteorological data in IMMT format to check the file against the WMO Minimum Quality Control Standards, and provide details of where the data has failed checks to enable the Contributing Member to correct the data before submission to the Global Collecting Centres (GCC) for processing and distribution to the Responsible Members.</p> <p>MetOffice - <a href="http://www.metoffice.gov.uk/research/interproj/gcc/index.html">http://www.metoffice.gov.uk/research/interproj/gcc/index.html</a><br/> DWD - <a href="http://www.dwd.de/gcc/">http://www.dwd.de/gcc/</a></p>   |
| 20/08/2008                | United Kingdom | <p>A set of kernel routines for encoding and decoding BUFR messages; front-end routines are required to present messages or to decode other code formats. Complete BUFR Tables included. Please note that this is not software to convert between TAC and BUFR.</p> <p><a href="http://www.metoffice.gov.uk">http://www.metoffice.gov.uk</a></p>  |
| 07/07/2008                | ECMWF          | <p>GRIBEX has been developed for encoding and decoding WMO FM-92 GRIB code messages and some ancillary subroutines for controlling printing and debugging. This software covers the subset of GRIB (GRIdded Binary) in products used and produced at ECMWF.</p> <p><a href="http://www.ecmwf.int/products/data/software/grib.html">http://www.ecmwf.int/products/data/software/grib.html</a></p>  |

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| 07/07/2008                | ECMWF          | EMOSLIB. The Interpolation library (EMOSLIB) includes Interpolation software and GRIB, BUFR, CREX encoding/decoding routines. It is used by the ECMWF meteorological archival and retrieval system (MARS) and also by the ECMWF graphics packages Metview.<br><a href="http://www.ecmwf.int/products/data/software/interpolation.html">http://www.ecmwf.int/products/data/software/interpolation.html</a>  |
| 07/07/2008                | ECMWF          | CREXDC software is used for encoding/decoding WMO FM-95 CREX code messages. The software includes tools for conversion between BUFR and CREX.<br><a href="http://www.ecmwf.int/products/data/software/crex.html">http://www.ecmwf.int/products/data/software/crex.html</a>   |
| 07/07/2008                | ECMWF          | BUFRDC software is used for encoding and decoding WMO FM-94 BUFR code messages. The software includes tools for conversion between BUFR and CREX, as well as from FM-12-XII SYNOP to BUFR and can also handle OPERA radar data.<br><a href="http://www.ecmwf.int/products/data/software/bufr.html">http://www.ecmwf.int/products/data/software/bufr.html</a>   |
| 07/07/2008                | ECMWF          | GRIB API is an application program interface accessible from C and FORTRAN programs developed for encoding and decoding WMO FM-92 GRIB edition-1 and edition-2 messages. A useful set of command line tools is also provided to give quick access to grib messages.<br><a href="http://www.ecmwf.int/products/data/software/grib_api.html">http://www.ecmwf.int/products/data/software/grib_api.html</a>   |
| 02/07/2008                | Switzerland    | LIBAGG: library containing functions for the aggregation of mainly climatological values and the calculation of derived meteorological quantities. LIBPUM: library containing functions for testing meteorological measurements and observations for plausibility.<br><a href="#">Documentation of these software packages is not available on the World Wide Web.</a><br>Contact: <a href="mailto:christian.haeberli@meteoswiss.ch">christian.haeberli@meteoswiss.ch</a>  |
| 17/04/2008                | Czech Republic | DOBSON. O3Dobson is the software for reduction of total ozone observations with the Dobson spectrophotometer. The program is designed to keep correct calibration level of the Dobson spectrophotometer. In case of the changes of ETC constants or wavelengths settings (for example due to the change of measuring place with the different altitude), the software can reset proper values based on standard and mercury lamp tests results.- As part of O3Dobson package there is a software for calculation of coefficients of zenith polynomials "O3Dpoly" and software for recalculation of data files "O3Drec".<br><a href="http://www.o3soft.eu">http://www.o3soft.eu</a> |

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| 17/04/2008                | Czech Republic   | CX.RTN - Brewer operating program subroutine - CREX encoder for ozone data. Routine reads Brewer data files and encodes CREX for both single and averaged observations<br><a href="http://www.o3soft.eu">http://www.o3soft.eu</a>                                |
| 04/01/2008                | Hong Kong, China | The software automatically updates and displays pre-categorized messages such as GTS and AFTN messages.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>   |
| 04/01/2008                | Hong Kong, China | The software reads and decodes METAR code and generates equivalent plain language in HTML format.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>   |
| 04/01/2008                | Hong Kong, China | The software provides a web browser interface to assist the encoding of SYNOP observations.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>   |
| 04/01/2008                | Hong Kong, China | The software provides a web browser interface to assist the encoding of ground weather radar observations.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>  |
| 04/01/2008                | Hong Kong, China | The software provides a graphical user interface for the calculation of relative humidity and dew-point temperature based on user input dry bulb and wet bulb temperatures.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a> |
| 04/01/2008                | Hong Kong, China | The software provides a web browser interface to convert various meteorological parameters to the equivalent values in other units.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>   |
| 04/01/2008                | Hong Kong, China | The software reads and decodes TAF code and generates equivalent plain language in HTML format.<br><a href="http://www.hko.gov.hk/wmo/cbs.htm">http://www.hko.gov.hk/wmo/cbs.htm</a>   |

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| 17/11/2006                | United States | NetCDF (network Common Data Format) is an interface for scientific data access and a library that provides an implementation of the interface. The netCDF library also defines a machine-independent format for representing scientific data. Together, the interface, library, and format support the creation, access, and sharing of scientific data. NetCDF-4 is a major enhancement that provides many features. NetCDF-Java provides read access to other formats, including GRIB and BUFR, through a Common Data Model Interface.<br><a href="http://www.unidata.ucar.edu/software/netcdf.html">http://www.unidata.ucar.edu/software/netcdf.html</a> |
| 17/11/2006                | United States | The Unidata Local Data Manager (LDM) is a collection of cooperating programs that select, capture, manage, and distribute arbitrary data products. The system is designed for event-driven data distribution and is currently used in the Unidata Internet Data Distribution (IDD) project. The LDM system includes network client and server programs and their shared protocols. An important characteristic of the LDM is its support for flexible, site-specific configuration.<br><a href="http://www.unidata.ucar.edu/software/ldm">http://www.unidata.ucar.edu/software/ldm</a>  |
| 06/09/2006                | Portugal      | TIDB2 and RTIDB EXPLORER. The TIDB2 database interface provides persistence to complex science objects, including GRIB and BUFR objects, using relational database systems like MySQL, PostgreSQL and Oracle. Database tables are organized in a folder structure with automated time management and accessed through a generalized C++ table object.<br><a href="#">Source available under gnu license.</a><br>Contact: <a href="mailto:joao.simoese@meteo.pt">joao.simoese@meteo.pt</a>   |
| 01/09/2006                | Japan         | Software to decode GRIB coded data (for thinned grid)<br><a href="http://ddb.kishou.go.jp/_software/NWP/Decode">http://ddb.kishou.go.jp/_software/NWP/Decode</a>  |
| 31/08/2006                | Cyprus        | WeatherAid is an easy to use tool for the meteorological observer. -Helps the observer to describe the weather phenomena; -Keeps track of the evolving weather, generating an easy to study record list; -Provides the proper weather codes to be reported, according to WMO regulations.<br><a href="http://www2.cs.ucy.ac.cy/~meteo/WeatherAid.html">http://www2.cs.ucy.ac.cy/~meteo/WeatherAid.html</a>  |
| 09/08/2006                | Bolivia       | El SISMET provee una interfaz para el ingreso y almacenamiento de datos meteorológicos diarios, elaborando procesos de variables mensuales, decadales y con estos la elaboración de productos como ser probabilidad de precipitación, heladas, rosa de vientos y otros.<br><a href="#">No existe pagina web.</a><br>Contacto: <a href="mailto:leo@senamhi.gov.bo">leo@senamhi.gov.bo</a>  |