REVIEW OF ELECTRONIC LOGBOOKS

(Submitted by Japan and the Netherlands)

Summary and Purpose of Document

Members operating VOS have been encouraged to use electronic logbooks such as TurboWin and OBSJMA. This document contains reports on electronic logbooks and their modification process.

ACTION PROPOSED

The Expert Team on Marine Climatology is invited to:

(a)   Note and comment on the information provided;

(b)   Take the information into consideration when discussing related agenda items including agenda item 3.4.

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Appendices: A.   Review of Electronic Logbooks, OBSJMA

B.   Review of Electronic Logbook, TurboWin

DISCUSSION

Introduction

1.   Members operating VOS have been encouraged to use electronic logbooks such as TurboWin. It is essential that amendments on codes and formats be accommodated in the electronic logbooks. The Team will be presented with the modification process of the electronic logbooks. Appendices A and B contain reports on OBSJMA (Japan) and TurboWin (Netherlands).

Action proposed

2.   The Team is invited to note and comment on the information provided. Information should be taken into consideration when discussing related agenda items including agenda item 3.4.

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Appendices: 2

REVIEW OF ELECTRONIC LOGBOOKS, OBSJMA

Report on the Japanese electronic logbook, OBSJMA
(Submitted by Responsible Member Japan)

The Japan Meteorological Agency (JMA) distributed a software package to facilitate the use of electronic logbooks for voluntary observing ships (VOSs) named "OBSJMA for WIN" to about 850 VOSs via Japanese shipping companies in September 2002. It was the replacement for former "OBSJMA", an old-fashioned MS-DOS software. Since the distribution, at least 45 VOSs have used the software to generate SHIP code for real-time transmission and to compile observations into IMMT-2 electronic logs. In 2003, about 10,000 observations were compiled into electronic logs with the software.

It was found that the first version of "OBSJMA for WIN" distributed in 2002 had small problems on recording elements 11, 28 and 30 (Octant of the globe, Sign of SST, and Indicator for SST measurement) and ice data. All wrong codes in the electronic logs have been replaced with correct codes before applying MQCS at JMA. These problems were fixed and a modified version of "OBSJMA for WIN" was distributed in May 2004 to the VOSs who have used the software. The fixed version can be downloaded through the following web-site for Japanese VOSs:

   http://marine.kishou.go.jp/VOS/index_j.cgi

The latest version of "OBSJMA for WIN" generates IMMT-2 records. Future amendments on SHIP code and IMMT format have not been taken into consideration. Conversion of IMMT-2 to future IMMT format will be done through the data processing before dispatched to GCCs.

Review of electronic logbook TurboWin

1 Introduction

TurboWin was developed at KNMI (Royal Netherlands Meteorological Institute) with contributions of several Meteorological Centres. Meteorological observations made on board ships and fixed sea stations are a substantial component of the World Weather Watch, provided that the observations are accurate and of high quality. The fixed sea stations and Voluntary Observing Ships (VOS) are key components of the Global Observing System (GOS) and climate research. At the same time, however, it has been recognized that these observations are subject to keying errors, coding errors, calculating errors, etc. To achieve an optimal control of the quality of the observations, before they are used in real time and stored for scientific purposes, the quality control has to be carried out at the root, by the observers themselves. TurboWin contains observation-checking routines, which are applied on the observations before they are transmitted and stored. TurboWin is a user-friendly system with over 200 built-in quality checks. It allows the automated compilation of observations on board ships and fixed sea stations, their downloading to disk and their subsequent transmission ashore and thence to a Meteorological Centre, by using Inmarsat, E-mail or other specific communication facilities and the Global Telecommunications Network. The programme assists the observer with many menus, pictures, photos, forms, help pages, automated calculations etc.
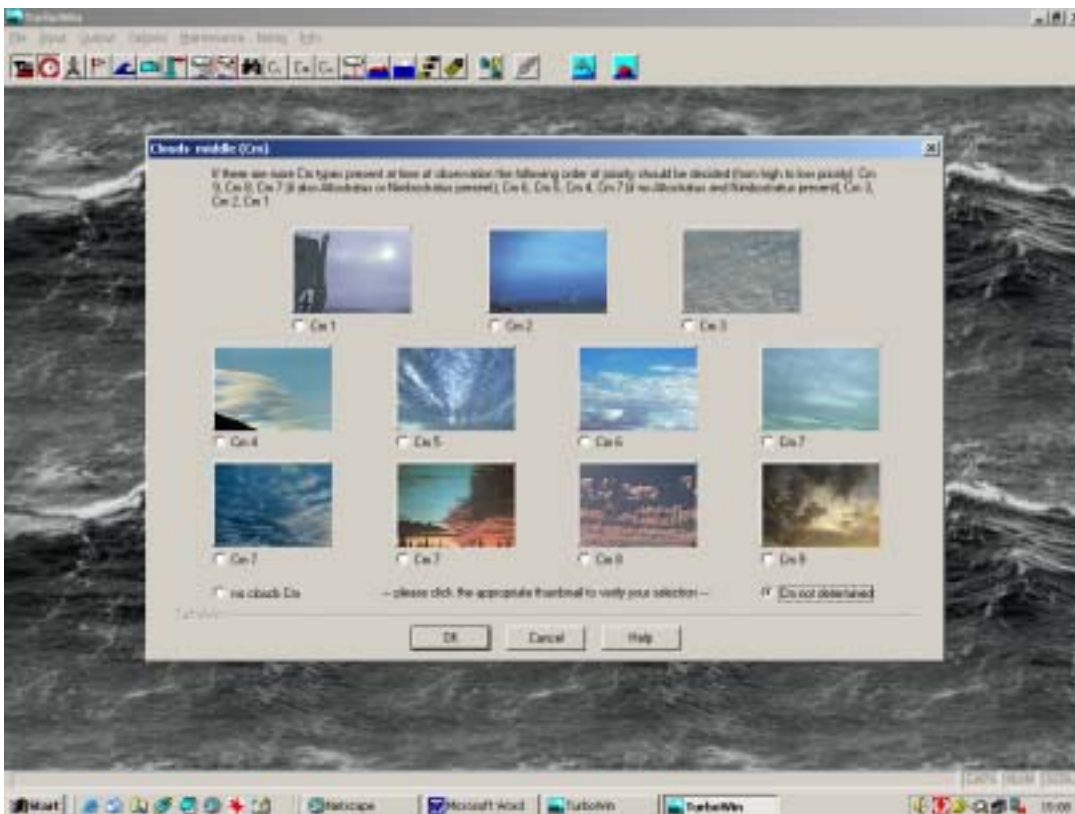
TurboWin version 3.5 screen shot
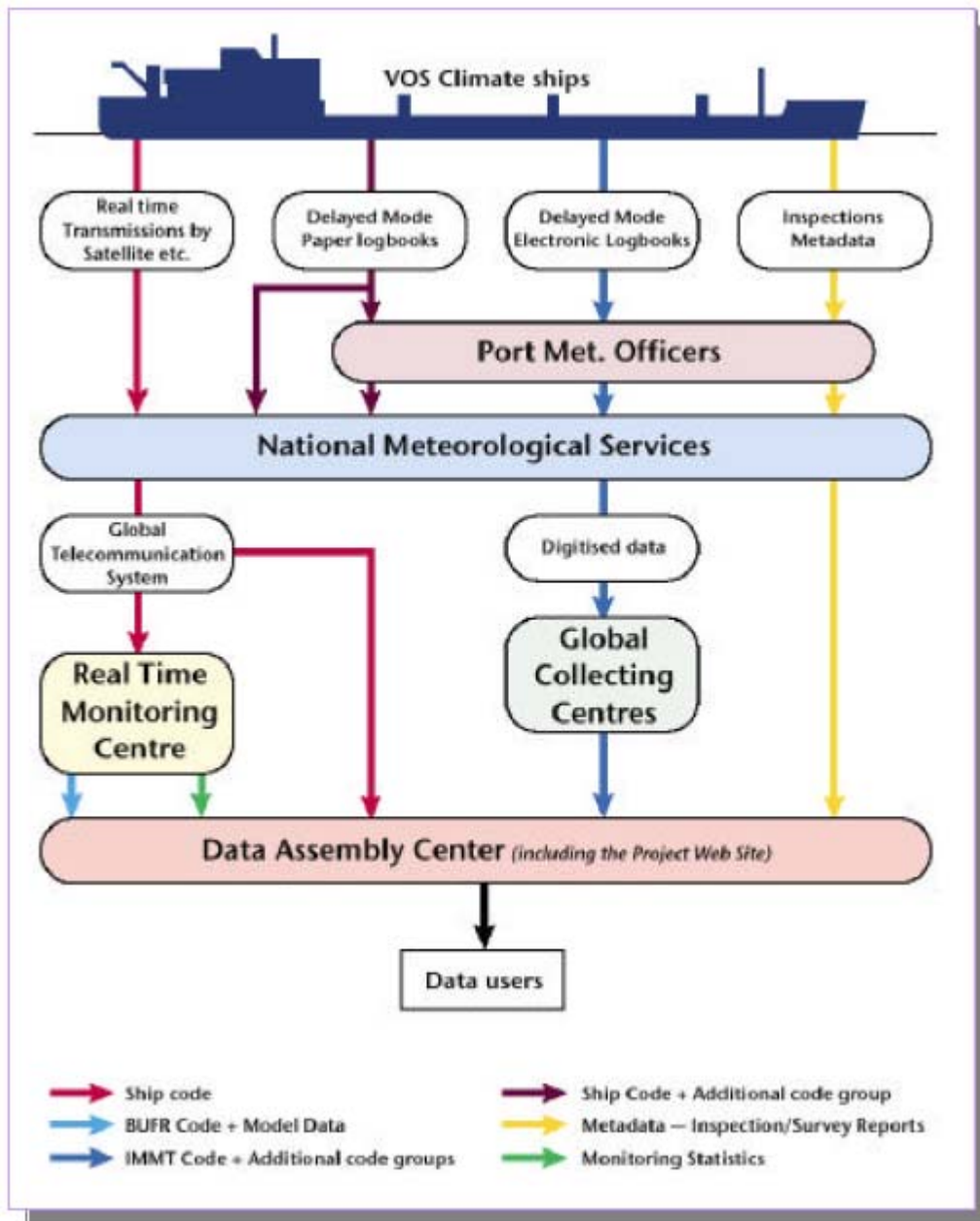
2 TurboWin internals

2.1 overview

figure 1. schematic diagram 'borrowed" from VOS Climate project Newsletter No. 1

TurboWin covers (partly)"real time transmissions by satellite" and (entirely)"Delayed Mode Electronic Logbooks" (see figure 1). On the following paragraphs the relation of these two processes with TurboWin will be explained.
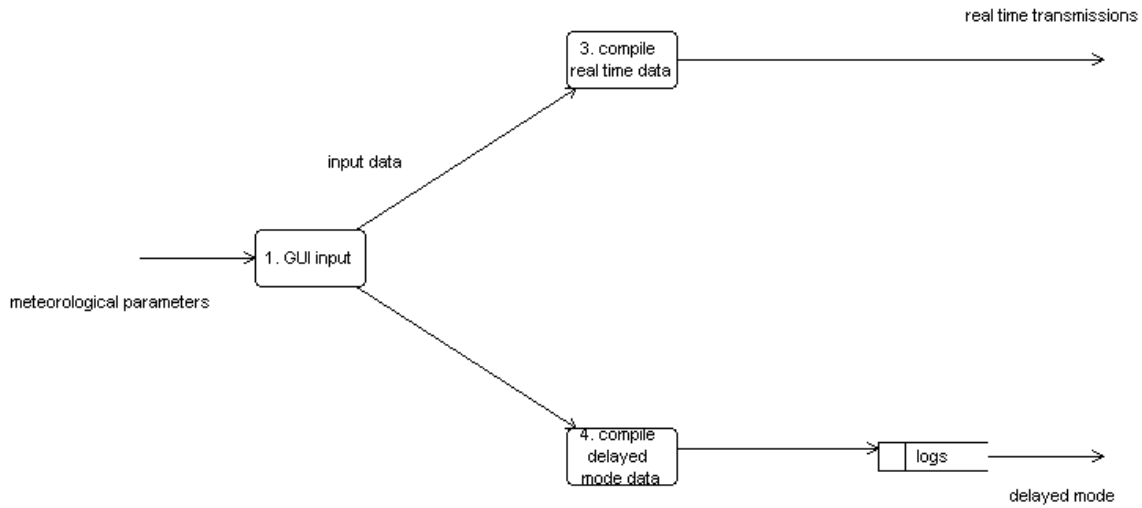
2.2 TurboWin 'modes' and modules

figure 2. Main modules of the TurboWin software

Main modules/branches of the TurboWin programme:

- Input module. Input with a Graphical User Interface
- 'real-time mode' module for (near)real-time transmission preparations
- 'delayed mode' module for inserting data into the log books
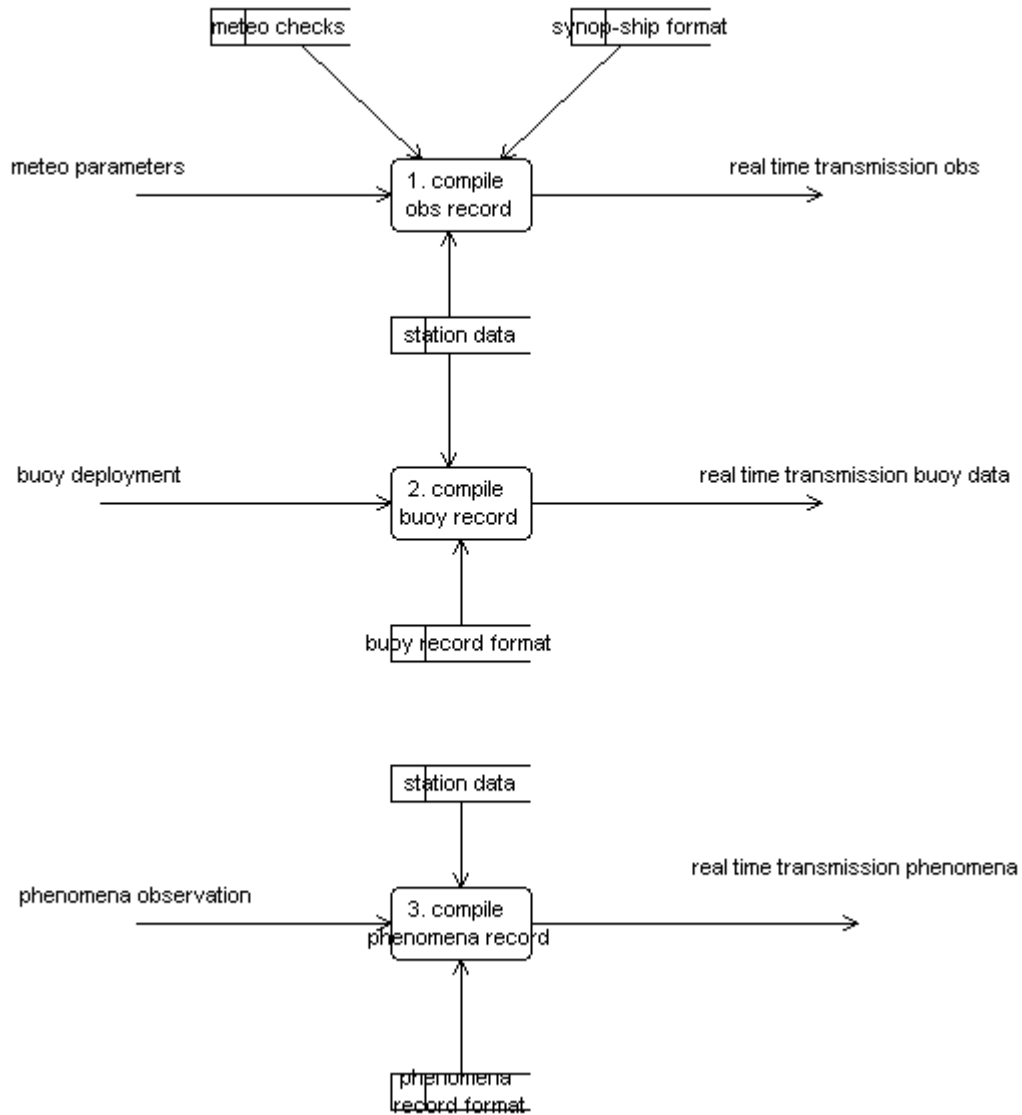
2.3 TurboWin 'real-time' mode

figure 3. TurboWin software real-time mode decomposition

The three main processes in the 'real-time' branch (figure 3) are:
- - 1. compile obs record . The SHIP observation
- - 2. compile buoy record. Drifting buoy and float deployment information
- - 3. compile phenomena record. Additional observation report

Every process needs additional information to transform specific input to pre-defined output, in the figures 3 and 4 depicted as knowledge stores. E.g. for the "compile obs record" process (no. 1 figure 3) the additional required data are the "meteo checks "
(http://www.knmi.nl/onderzk/applied/turbowin/specifications/TurboWin_3_0_Quality_Control.htm),
"synop-SHIP format" (WMO on codes WMO-No. 306) and "station data"
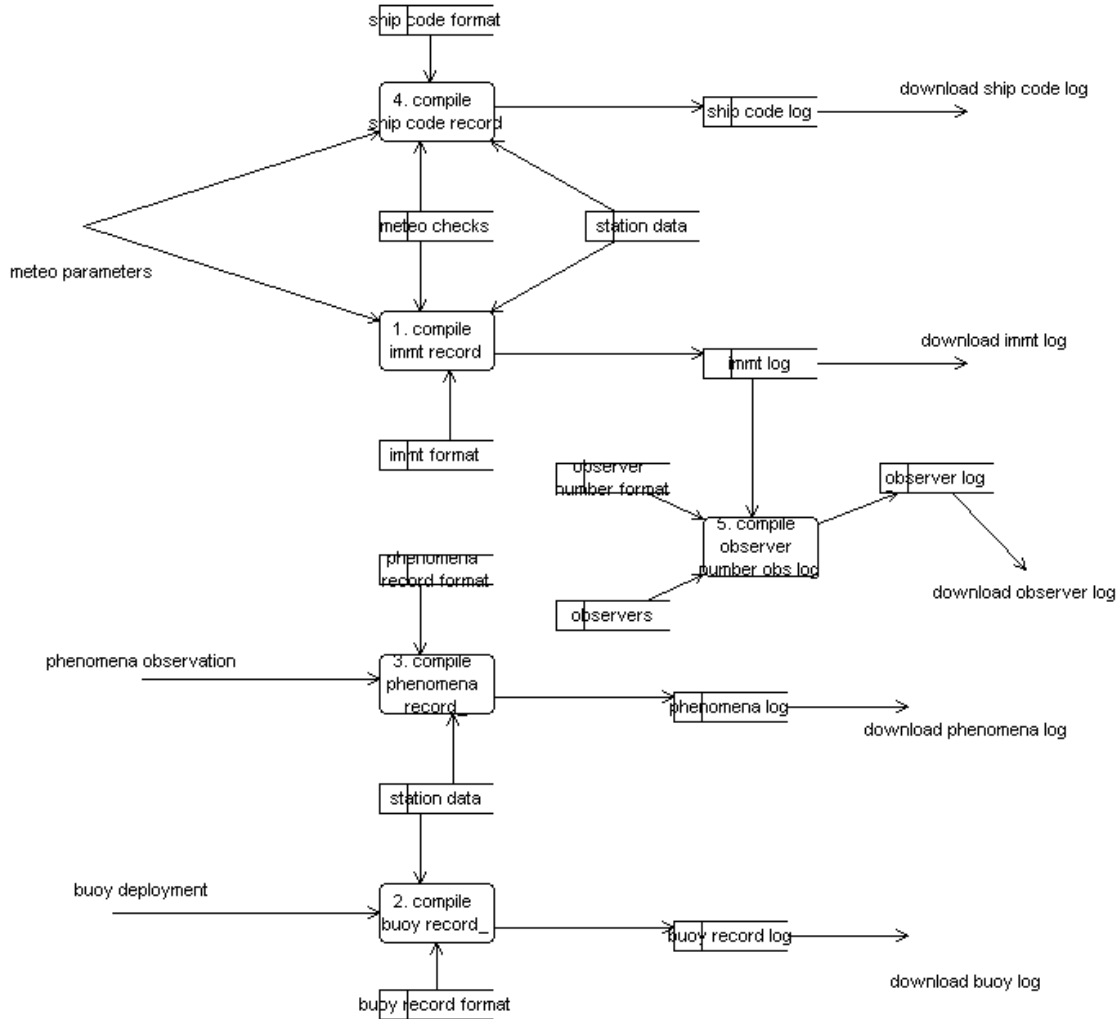
2.4 TurboWin 'delayed-mode'

figure 4. TurboWin software delayed-mode decomposition

The five main processes in the 'delayed-mode' branch (figure 4) are:
- 1. compile immt record. The climatological version of the SHIP observation
- 2. compile buoy record. Drifting buoy and float deployment information
- 3. compile phenomena record. Additional observation report
- 4. compile ship code record. Resembles paper logbook for internal/company use
- 5. compile observer number obs record. For national reward systems

Many recommendations, requests, bugs and suggestions refer to the earlier mentioned knowledge–stores (see paragraph 2.3). E.g. after an IMMT format change the knowledge-store "immt format" (figure 4, input of process "compile immt record") must be updated accordingly.

3 New version (update) procedure

Main sequence of amendments of codes, formats and others accommodated in 'electronic logbook' TurboWin. Some points are repeated or updated as many times as necessary

3.1 Collecting of recommendations, requests, bugs, suggestions etc.

All appropriate items received from National Meteorological Services, Captains, VOS, JCOMM (meeting)reports, Observers, etc. are collected. This is a continuous process. E.g. TuboWin 3.5: "Extend the Help component of the TurboWin software by putting there a corresponding description of wave observation practices from the Guide to Meteorological Instruments and Methods of Observation (WMO-No. 8) and the Guide to Wave Analysis and Forecasting (WMO-No.702)" see: ETWS (Expert Team on Wind Waves and Storm Surges) meeting report No. 22, June 2003. Among many other things this report was filed

3.2 prepare 'item-initiation' document

List of new items and origin of the new items. This document is among other things used to keep track of the hours spend on the TurboWin project and to discuss the necessity of the introduced items. E.g. TurboWin 3.5: add measured waves code group for ships initiated by weather ship 'Mike' or remove wind speed reduction for ships with anemometers initiated by SOT etc.

3.3 collect additional data

Many times additional data such as code books, brochures, guides, photos, handbooks, code cards etc. is required. In this phase also specialists in different fields will be consulted (code specialists, communication specialists etc.) Especially copyright questions can sometimes take a long time to be answered. E.g. TurboWin 3.5: collecting, scanning and retouching of an old KNMI sea state photo series or gathering and preparing several pdf documents (VOS brochure, ASAP brochure, VOS-CLIM project document etc.)

3.4 source code changes

After changing of a source code (sub)module an internal list of source code changes on subroutine/function level is updated. This list is only suitable for programming purposes. From this list the (pre) beta testing document (see 3.6) is abstracted.

3.5 prepare directories and files document

List of all files and directory structure used by the new version. This document will mainly be used for testing and checking of the new program environment after installing (directory structure, file preparation with appropriate data and additional notes)

3.6 prepare (pre)beta testing document

List of all new introduced items with corresponding user interface parts affected by the changes. Specific (sub)test documents could be prepared for more complicated subjects (e.g. testing of sequential dialogs, testing of wind correction results after applying course and speed on relative wind). This document will be used as the primary guideline by our KNMI-PMO-office test team. Dead lines will be agreed . E.g. TurboWin 3.5: added tree Cm7 thumbnails (see screen shot on first page) this produce an effect on menu item selection: Input -> Cm7 or, second example, after adding new observers data a confirmation will be asked, this have an effect on menu items selections:Input -> Observer and Maintenance -> Observers.

3.7 prepare software beta version

People or Services who initiated a major new item will receive a beta version with request to test

and try the new version with emphasis on the new points. E.g. TurboWin 3.5: DMI (Danmarks Meteorologisk Institut) for GTS header and UK Met Office for ship code log

3.8 prepare what's new document
View of major changes in the new version in a condensed form. This document is meant for the end user, and will be part of the user documentation

3.9 update quality control document if applicable
List of all quality control checks performed by the new version. This document is also available via the TurboWin web site. TurboWin applies a fast three level checking procedure (two error levels and one warning level).

3.10 prepare and run install program
New files must be declared in the install program, with the Windows installer setup a new final software package will be build

3.11 update TurboWin web site
The latest TurboWin version will always be available on our web site.
see: http://www.knmi.nl/onderzk/applied/turbowin/turbowin.html
From this site you can also download "MeteoClassify", a trainings program to test your knowledge of cloud, ice and sea state classification and "Ocean Wave Atlas", a viewer, available for the Windows and Linux operating systems, of climate charts with averages and standard deviations of wave height, wave direction and wave period.

Last updated 20-05-2004 by Martin Stam