

Version 2.0 of CPOD.exe introduced the KERNO classifier. Subsequent versions *do not change the results of the KERNO classifier* as this would create incompatible results. These versions only add display, analysis or export features, and fix bugs. However, see notes on version 2.043.

Any improvement in the encounter classifiers in use (Hel1 and GENENC will be made available as alternative encounter classifiers for the same reasons.

If you encounter a problem in CPOD.exe try the latest version, and if it persists, please let me know: [Nick.Tregenza@chelonia.co.uk](mailto:Nick.Tregenza@chelonia.co.uk)

If there is a program feature you would find valuable please let me know about that too. It may be possible, and it will be free if it is possible.

V2.044 9 <sup>th</sup> Oct 2014	Adds	<p>The option to select all relevant CPOD files in a directory and all of its subdirectories; this has been added to several areas of the system including train detection and exports.</p> <p>Diel graphs now show percentages rather than actual numbers.</p> <p>Auto crop function handles a sequence of associated files.</p> <p>List Landmark Sequence button added to Export tab plus new option in display menu (accessed via right click) "Go to next Landmark sequence".</p>
	Fixed	<p>The click start time had a bug that would sometimes produce a result that had the wrong number of decimal places.</p> <p>Window resizing glitches fixed.</p>
V2.043 16 <sup>th</sup> Aug 2013	Adds	<p><b>Diel graphs</b> of various parameters can now be shown. Selection is on the view+ page, and graphing of the data from whole displayed days is activated by clicking the 'graph' button in the top row of the main screen.</p> <p>Additional check box in the Export tab below List Files and List Settings in the Export tab has been added called "Display Lat and Long as decimal degrees", this converts the Lat and Long data in both the List Files and List Settings outputs to decimal degrees.</p>
	Fixed	<p>The process for setting POD version 0 limits before processing data from PODs of version 1 (which were more sensitive) before running the <b>KERNO classifier</b> was not working correctly. Thanks to Marco Gauger of Biola for reporting this. This only affects users who set minimum SPL limits before processing files.</p> <p>Certain symbols were being stripped from the LAT and LONG fields in the Read SD tab. No symbols are now removed. The output remains correct.</p>
V2.042 8 May 2103	Adds	<p>The file name includes 'NO START TIME' if the default values were in use. Thanks to Manolo Castellote for this idea.</p> <p>File selection for train detection now skips any files that have already got a CP3 file in the directory. Thanks to Daniel Wennenburg for this idea and the next.</p> <p>Batch processing for 'Click Details'. This can also export the first 6 characters of the file name to the export.</p>

		Filtering by Sound Pressure Level in Pascals is now enabled.
	Fixed	Very last minute falsely marked OFF when ON. Thanks to Mariana Melcon for spotting this. During upload a minute limit of 4096 was incorrectly being imposed by the last version. Thanks to Prof Boris Culik for spotting this serious error!
V2.041 25 Jan 2103	Adds	The database of POD-specific values for the gain-offset setting is now not within CPOD.exe, but is read in from a text file 'CPOD specific settings.txt'. You can download the latest version at any time without the need to get a new version of CPOD.exe. The file name includes 'NO START TIME' if the default values were in use. Thanks to Manolo Castellote for this idea.
	Fixed	Mark current selection of trains. This now allows you to mark all trains defined by any set of filters over any number of minutes within a current time selection. The encounter classifier GENENC was hanging on some files. Thanks to Anja Gallus and others for help with this. Text was displaying badly on some systems. Thanks to Ian Todd for help with this. Filtering by Sound Pressure Level in Pascals is now enabled.
V2.04 5 Nov 2012	Adds	Export of a noise measure is now possible. See CPOD.pdf for an explanation of this radical metric. The commonly used display options are now on a panel on the left side of the main screen. This can be collapsed and restored as required. Please report any problems with this ... or anything else!
	Fixed	Batch processing halted by some corrupted files. 'Send train to trash' right-click option mended.
V2.035 27 Jul 2012	Fixed	Low sensitivity settings option did not work on all C-PODs.
V2.034 27 Jul 2012	Adds	Low sensitivity settings are now available for use in noisy areas where the memory fill too fast. Thanks to Marco Gauger and Phillip Loos for testing these settings..
	Fixed	Fast Forward can now be slowed or speeded up using the + and – numeric keys. DPM – fractional values were not shown on the Analysis page.
V2.032 30 Jun 2012	Adds	<b>GENENC</b> encounter classifier. See CPOD.PDF for more information.
	Fixed	GMT offset values were not stored when files were read from the SD card. Thanks to Olli Loisa for this report.
V2.031 30 May 2012	Fixed	Export to text files could omit up to 2 lines of data at the end. Export to 'Results' gave the full data set. Thanks to Pina Gruden for reporting this.

V2.030	Adds	Warning if DATA3.CHE file is corrupted.
14 May 2012	Fixed	<p><b>Error reading some SD cards causing only DATA0.CHE to be read.</b> Thanks to Aileen Jeffries for reporting this.</p> <p>Export of detection in the last time period in a file was sometimes omitted.</p> <p>Display problem if only file 2 or file 3 are open</p> <p>KERNO classifier: if a lower maximum number of clicks per minute are set (very few users do this) the .CP3 file did not show as truncated minutes that had been retrospectively truncated, and the total file running duration could be low.</p>
V2.029	Adds	LAT and LONG entries are now parsed and displayed as <i>decimal degrees</i> . Errors are reported. Export of file lists can now include decimal degrees.
1 May 2012		<p>An 'Auto-crop' button on the view+ page of the menu crops a batch of CP1 files to new copies containing all time within the earliest and latest 10 consecutive minutes ON.</p> <p>A 'paste start' button on the Read SD page allows the start time to be used in the filename instead of the upload time.</p>
V2.028	Adds	Multi-monitor viewing now possible. 'Stop' now stops low resolution displays, which can be slow for large files. Display settings can then be changed.
21 Apr 2012	Fixed	Error message due to different local decimal separator preferences set in Windows.
V2.027	Adds	An option to rename file sets using the standard name format from the ReadSD card page.
14 Apr 2012	Fixed	<p>The Location and Notes boxes on the ReadSD page were incorrectly labelled.</p> <p>Some range check errors during processing data with/from the Hel1 classifier. Thanks to Marco Gauger, Julia Carlstrom, Daniel Wennenberg for reporting these.</p>
V2.026	Adds	Screen saver is not shown during long displays of array viewer.
20 Nov 2011		
V2.025	Adds	Export settings can be stored and recalled as required. Settings are stored in user-named files that can be in data folders.
8 Oct 2011		<p>A utility to archive whole SD cards, each in a new folder.</p> <p>A new data field for GMT time offset – users at sea can enter PC times, and enter the local difference from GMT.</p> <p>File listing includes an option to export text fields Lat, Long, GMToffset etc.</p>
V2.024	Fixed	Batch export of encounter-classified train details shows a spurious error message. Thanks to Monika Kosecka for this report.
V2.023	Adds	Train details now includes the actual number of clicks detected and the (previous) number in the train – that included some clicks that were not detected but were inferred by the fit of a an ICI trend curve. The number in the train gives a correct calculation of average ICI, where 'actual click's does not.
9 Sep 2011		Train details of species identified by an encounter classifier can now be exported.

V2.022 7 Sep 2011	Adds	Encounter classifications are now more fully supported. Species identified are shown on the Files – View page and operate as an alternative to the KERNO classifier species. Normally you should include all Q classes as these have been taken into account by the classifier.
	Changed	Ctrl X now zooms in on the center of the display sufficiently to distinguish each click shown on the screen. This speeds up train validation, and can be followed by Ctrl Z to go back to previous screens.
	Fixed	When moving through a file in high resolution (individual clicks) new data is now shown starting at the middle of the screen, instead of starting at the left hand edge. The mouse pointer can be positioned here too (see check box on view+ page).
	Fixed	The SD card reading process now accommodates some more difficult cards.
V2.021 10 Aug 2011	Fixed	Some raw data has been corrupted by an additional byte near the start, giving a too-short file with wild variation of temperature, and angle, and abnormal clicks, mostly of low frequency. Thanks to Olli Loisa for this report. Those files are read correctly by this version.
V2.020 7 Aug 2011	Added	First secondary classifier 'Hel1' - see document on 'Encounter classifiers'. Thanks to Hel Marine Station for hosting a workshop that visually validated all detections in 95 years of data, 2.9billion clicks, and established the criteria that constitute 'Hel1'.
	Fixed	The step-through-frequency bands utility left frequency band filters set instead of reverting to their previous values. Thanks to Jason Wood for this report.
V2.019 24 July 2011	Added	Angle of POD is now shown in high resolution displays as text, bottom right of display area.
	Fixed	Date/time formats are now 'R' friendly – zero time at midnight was previously '31/12/2010', but is now '31/12/2010 00:00'
	Fixed	PODs started with a pre-set delay had a gap time between two files if more than 1GB of data was obtained. The data were OK. Few users ever used this start delay, which has not been available for since 2010.
V2.018	Fixed	Envelope data were misread from V1 POD files in versions 2.016/7. <b>Files processed with these versions should be re-processed.</b>
V2.017 15 July 2011	Added	Larger font for screen-grab (Ctrl G) graphics.
	Fixed	Repetition of same report of pre-start clicks in upload routine.
V2.016 7 July 2011	Added	Full upload error reporting. If old data is read beyond a file end this is shown.
	Fixed	The CP1 parameter displayed when CP3 files show Qclass or SpClass is now flexible – the last parameter continues to be shown.
	Fixed	Spurious last click in file and various trivial items.
V2.015 24 June 2011	Added	Ctrl + Shift + Z returns to previous high resolution screen with a train in it.
	Fixed	Export of detection and environment data gave temperature sums instead of means. Thanks to Manolo Castellote for these.
v2.014 <sup>14</sup> June 2011	Added	Ctrl + Z returns to earlier high resolution data displays. Useful if you get into low resolution screens while editing.
	Fixed	All trains in a minute (passing current filters) and be marked in one step. Thanks to participants at the working party in Hel.
	Fixed	Error in marking (during visual editing) one click in 5000 caused 'record class' errors and 1-click trains.
v2.013	Added	Option to export sound pressure levels in Pascals corrected for the frequency response of the hydrophone.

2 June 2011		Export text file names now include the species group 'Dol' and the parameter 'DPM' etc. Thanks to Kate Brookes for this.
	Fixed	Click detail column headings are now uniform across the 3 possible routes for exporting these (right-click on the screen, export click details, export train details). Export options giving all DPM etc as 1. Ouch! Thanks to Kate Brookes for this.
v2.012	Added	Train details can now be exported to the Results page. Export of annotations is not optional.
28 May 2011		'Hints' are shown immediately on the menu bar for most components. Pop-up hints have been removed.
	Fixed	The Settings page is now simpler. Export: some options of export from CP3 files gave inconsistent values for the number of raw clicks from which it had been derived (period ends were offset by one minute). Overflow error fixed - thanks to Brian Polagye.
v2.011	Fixed	Exporting 'detections and environment' had implausible values for %TimeLost (due to truncation when minutes reach the limit). Thanks to Cormac Booth for this report. The number of clicks in a minute of a CP1 file reported from (old) CP3 files made with v1 train detection have been corrected.
20 May 2011		
v2.010	Adds	<b>Time selections</b> can now be used in batch exports so that any period can be selectively exported from any number of files.
17 May 2011		<b>Arrays:</b> a fine scale autocorrelation has been added. This uses 10 second time bins.
	Changes	<i>Export formats:</i> file numbers have been replaced by file names to simplify handling. Extra data columns showing 'Mins ON' and 'Number of all clicks' have been added to some export options where they may be useful. Automated error reporting by email has been removed – this change speeds up the program a little.
	Fixed	Exporting measures over a single time period ('all'), failed to produce data if an endpoint preceded the file end. The selection of species to display in the grid array viewer now works across all species selection options.
V2.009	Adds	<b>Encounter export.</b> This is a very useful analysis tool for distinguishing species. It exports data from encounters identified in CP3 files and from the corresponding periods of the CP1 file.
30 Apr 2011		<b>Marks.</b> Trains can now be 'marked' and can then be treated as a species class so that data, encounters etc., can be exported from this subset of trains, or they can be excluded from analysis. Marks can be compared between copies of the same file from different analysts.
	Fixed	<b>Train editing</b> now allows trains to be moved to 'trash' or to a lower Q class. Joining CP3 files failed on newer files due to changes to the name format, or created a 1 minute offset for some files. Thanks to Jason Wood for this report.
v2.008	Fixed	Data reading from the SD card was incomplete if it included the second DATA2.CHE file. <i>Do not use earlier v2.n to read SD cards.</i>
Mar 27		Thanks to Martin Jabbusch, Stephen Pikesley and Matt Witt for this report. The number of clicks in the CP1 file is recorded in the CP3 file for each minute. Version 2.n was misreporting this (compressed) value for CP3 files created with earlier versions. Thanks to Jason Wood for this report.

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v2.007	Adds	Filters for minutes with sediment noise or boat sonars
	Fixed	Further error affecting some files processed with v2.006, causing a reduction in detection rates. <i>Do not use v2.006 to process files.</i> Thanks again to Stephen Pikesley for this report.
v2.006	Fixed	Serious error if files are processed using the 'make v1 PODs the same as v0' option. Thanks to Stephen Pikesley for this report.
v2.005	Fixed	Changes to screen colours in windows XP
v2.004	Adds	Analysis now shows the number of clicks in the CP1 file for CP3 files processed with version 2 software.
28 Feb 2011		File edits now allow all species changes and the notes show the old and new species and the class of train.
	Fixed	Graphs of duration were not showing duration.
v2.003	Adds	WUTrisk added to export train details.
	Fixed	Values of 65535 clicks in the CP1 file were given for all truncated minutes in the exported train details from CP3 files even when the actual limit was lower.
v2.002	Fixed	Error in the length of the display scroll bar when a file duration is shorter than the screen time width, Range check error (rare) seen during processing of a file, False zero values for logging duration of unmapped files (displayed with the metadata), Column heading error in some export modes (list files) when no user codes file (CPODcodes.txt) is found.
v2.001	Fixed	Integer overflow when zooming in to very large sections of data using the highlighting method.

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