

GLOSSARY

Actions: Adobe Photoshop lets you automate tasks by grouping a series of commands into a single action. For example, you can create an action that applies a series of filters to reproduce a favorite effect or combine commands to prepare images for online publishing. Actions can be grouped into sets to help you better organize your actions. In the example above, you could create a set of actions, where each action applied to a different series of filters. You can use an action on a single file or on a batch (multiple files in the same folder). You use the Actions palette to record, play, edit, and delete actions. It also lets you save, load, and replace action sets. It is located under the Adobe Photoshop Windows drop-down menu (See “Show Actions”).

Active use o-rings: The o-rings to be used when the unit or device is submerged or subjected to greater than atmospheric pressure.

Adobe Action Package: A folder called “Video Methods” that contains the Action commands for all the components of the video protocol.

Adobe Photoshop: Computer program used as the image platform. Photoshop displays the image during the dotting process, and data analysis components.

Aiming rod: A stick ~1 cm in diameter that is attached to the video camera housing to enable the diver to accurately guide the camera 40 cm from the substrate.

AquaMap System: A SONAR-based survey and mapping system used for the mapping, and sample point location/re-location components. The system consists of three principle components, Diver Station, Baseline Station, PC software.

Baseline configuration: (physical setup) Use of AquaMap requires that the baseline stations be placed in a rectangular coordinate system. A line starting a Baseline Station #1 and extending through Baseline Station #2 defines the X-axis. Baseline Station #3 *must* be located within 180° clockwise of the X-axis. Ideally, it will be placed at ~ 90°.

(data): Baseline configuration may also refer to the data entered into the diver station to define the orientation from Baseline Station #1 to Baseline Station #2. The alignment will be used by the diver station to compute and display the bearing to a selected destination. The accuracy of the measurement *does not* affect the accuracy of surveying. It is therefore usually adequate to use a regular dive compass to shoot the orientation of the baseline.

Baseline station: A cylinder housing batteries, electrical circuitry, and SONAR transducer that is deployed near the corners of a rectangular survey site to serve as the reference points for the baseline survey.

Baseline Survey: When this command is selected in the diver station, SONAR signals are sent/received from all stations to “locate” their positions, from which all positions during the subsequent tracking will be referenced.

Batch: A group of up to 1,000 images located in a folder, ready to be “dotted”.

Brightness Adjust: This Adobe Photoshop feature manipulates the image light levels. A brightness adjustment has been pre-programmed to the F2 Function key through the action palette.

Camera tray: A metal plate containing electrical circuitry that attaches to the bottom of the video camera for inserting the camera into the housing.

Capture – Automatic: Feature of some capture cards that automatically selects and saves video image frames, usually based on a time interval.

Capture – Manual: Operator controlled process of selecting and saving video image frames.

Capture board: A computer card installed within the PC case that conducts the video image capture options. This protocol uses the SONY DVBK-2000/2000E capture board.

Capture library: The location in the computer where captured still images are stored.

ChopChop: Temporary name that is automatically given to Adobe Photoshop during the dotting process. It is canceled when the process is complete or when the program (Adobe Photoshop or “chopchop”) is closed. It will not affect or harm any other images or applications on your computer that utilize Adobe Photoshop.

Configure: To download the configuration file from your PC to the baseline and diver stations, e.g., “The next step is configuring the baseline stations.”

Configuration file: A computer file created by the user to defines the operational parameters and working environment during AquaMap use. This is a two-step process of creating/editing a configuration file, and downloading that file. All stations must be configured using the same configuration file.

Connector adapter: AquaMap device with black round wires with brass pins at one end for inserting into the baseline or diver station and a plug for connecting to the data exchange cable on the other end.

Contrast: This Adobe Photoshop feature manipulates the image light levels. A contrast adjustment has been pre-programmed to the F3 Function key through the action palette.

Convert: This utility program is used to transform data recorded in the diver station into a usable format, such as perimeter tracking outlines.

Cross-Track Error: This label indicates your distance from a direct course between the previous and next selected points, e.g., an indication of <-xxx means that the course line is XXX meters/feet to the divers left; >-xxx means it is to the right. When the label reads -000-, the diver is on the most direct line between the two points.

DT-test: A program loaded in the diver station that contains the operational commands for the noise and range test.

Data exchange cables: The flat wires with a fitting that connect the PC serial port either the communication cable of the baseline station or diver station.

Delimiter: A character (i.e., ‘;’) that separates two data fields.

Destination: This term is used with the WinBatch script to define the user-selected location of the images after they have gone through the dotting process.

DiveTerm: This small program is used to perform several utility functions such as downloading configuration files to stations and downloading tape memory.

DiveTracker: This folder contains the programs Convert and Dive Tracker.

Diver station: This hand-held device computes and displays the SONAR tracking data. A keypad is activated by a magnetic pointer to operate the station.

Diver Status Screen: This screen is displayed on the diver station to provide dive-related data when using the SmartDive operating system.

Drop-down menu: These are located above the icon bar on a PC to access features within a program.

Dotted: An image that has gone through the dotting process and now has “dots” (i.e., hollow red squares) placed upon it.

Exposure: The video camera setting that controls the opening of the lens aperture. Auto-exposure is recommended.

File types:

***.bmp** (bitmap)

***.dbi** AquaMap files that are created after recording data has been run through “Convert.” A *.dbi file is loaded into the area program for mapping and plotting purposes.

***.dvh** The digital video file format used by the SONY Capture board when a still image is captured.

***.jpg** (jpeg: named for the Joint Photographic Experts Group, the committee that developed this image compression mechanism) JPEG is a useful format for compact storage and transmission of images, but there is some image degradation each time a JPEG file is recompressed, i.e., each time it is edited or otherwise manipulated and re-saved as a file.

***.par** AquaMap configuration files that are loaded into the baseline and diver stations.

***.rec** AquaMap files that are created after downloading the recorded fixes during perimeter tracking.

***.tif** (tagged image file format)

***.wbt** Files created by the WinBatch script in WinBatch Studio

***.wpt** AquaMap waypoint files that are loaded into the Edit Waypoint option of the Edit/Create Configuration file.

***.xls** Spreadsheet format for Microsoft Excel.

Fire wire: This wire connects the video tape player or video camera, to the capture board communicating digital information from the tape to the computer.

Flatten: This Adobe Photoshop process merges multiple layers into one. For our purposes, it is an action contained within the Adobe Action Package that melds the layer containing the random dots to the video image layer.

Focus – Auto: This video camera setting allows the camera to pick the dominant object or plane on which to focus.

Focus – Manual: This video camera setting requires the operator to pick the dominant object or plane on which to focus.

Focus – Momentary Auto-Focus: Toggle the focus switch to AF will set the manual focus at the subject distance.

Frequency: When using AquaMap, the frequency is expressed in Hertz and should generally be set to the frequency of interest minus 5000 Hz. For example, when doing a noise test, it should be set to the default 29000 Hz (34000-5000=29000).

Gain: This is used in AquaMap to control the amplification of SONAR signals. The four gain settings (0,1,2,3) each represent a doubling in sensitivity, similar to the volume control on a stereo.

Gender adapter: This device is fitted between the serial port of the PC and a cable connector; also known as “male/female connectors”.

General Navigation Screen: Template screen displayed on the diver station and used for navigating to a destination. It displays the distance, bearing and cross-track error to the next waypoint or destination.

Housing view port optic: The shaped glass contained in the view port for the video camera lens. The Stingray housing uses a “bayonet” mounted, Zoom-Macro system.

Macro: A series of commands written in Visual Basic Programming language contained within a Microsoft Excel Worksheet. A series of key commands activates this “program”.

Metadata: As used in this protocol, metadata refers to details about the data collection dive and may include depth, time, divers, dive conditions, etc.

Mobile station: Another name for the diver station.

Noise Test: This function of the AquaMap system that listens for and then plots (graphically and numerically) the ambient noise on a defined frequency.

Precision Navigation Screen: Template screen displayed on the diver station and used to fine-tune the diver’s position and measure the quality of the position fix. It displays the X/Y

position, typical position error, baseline signal indicator, position queue status and time since last fix.

Queue: This is the file of position coordinates that are used to resolve the quality of a position fix (RMS error). It can be set to contain the last two or the last ten coordinates.

RMS Error (root mean squared): This typical position error reflects the average distance between each position in the queue and the average position of all position fixes. A large error indicates that positions are widely scattered, and thus there is little data confidence. A small error shows that the positions in the queue are closely tracking each other, thus the data confidence is high.

Randomplot: This is the name of the Microsoft Excel worksheet that contains the macro responsible for creating the random points.

Range Test: This is a test of the AquaMap system's ability to hear a discrete SONAR signal over measured distances.

Readme file: This computer file is created in a word processing application in order to enter metadata.

Record: This command is used in the Precision Navigation Screen to save the position fixes to the diver station memory. To clear the memory, the position fixes must be downloaded to a PC &/or deleted.

Red flip filter: This red plastic lens can be manually rotated into position in front of the video camera lens, inside the camera housing.

Script: This is a sequence of steps written in windows interface language and used by the Win-Batch program to run the dotting process. Similar to macro.

Show Actions: This command can be selected in an Adobe Photoshop drop-down menu to display the Action Palette.

Shutter speed: This video camera setting affects the video image exposure. It can be set by the operator (manual) or automatically by the camera.

SmartDive: A program that operates within the diver station used for tracking.

Standby: When this command issued in the precision navigation screen, none of the position fixes are being saved in the diver station memory.

Storage o-rings: These are used in devices while they are not being submerged or under greater than atmospheric pressure.

SONAR transducer cable: A ~6 foot cable with a SONAR transducer on one end and a connector to the diver station on the other. It is attached to the diver station, and calculates the position of the diver (with the diver station) relative to the baseline stations. A float is attached to the hook at the transducer end to keep the transducer floating above the diver.

SONY DV Application (APP): This is the application that works the SONY capture board to create the image libraries, saves the image types, etc.

Source: The WinBatch script uses this term to identify the location of the un-dotted images just prior to the dotting process.

Threshold: This feature is set in the Advanced Configuration File of the AquaMap system after conducting the noise and range tests.

Time code: This is a string of data “written/recorded” on the digital video tape that reflects the time, (hours, minutes, and seconds) since the tape started.

Toggle: A rapid motion to activate a switch on the video camera housing that involves moving the switch, then releasing the switch to its normal (neutral) position.

Transducer: This is the end of the baseline station or SONAR cable from which the pulse is released and received.

Un-dotted: Images without dots are usually located in the source directory prior to the dotting process.

Unsharpen Mask: This filter is used in Adobe Photoshop to improve the focus of an image (sharpen the edges) by increasing the contrast between adjacent pixels. An unsharpen mask adjustment has been pre-programmed to the F4 Function key through the action palette

Video slate: This device used to record data relevant and just prior to the recording of a transect. We have found the magnetic type work very well for this purpose.

Waypoint coordinates: These are pairs of numbers that correspond to the X/Y points used by the AquaMap™ system to locate a position in reference to the baseline stations. They are entered into the diver station as a file, or manually entered into the configuration file.

White balance: This video camera setting attempts to normalize the color of light reaching the lens after striking a surface. Due to the light absorption qualities of water (and since this protocol does not include the use of lights), the white balance should be left on automatic.

WinBatch: This is the program from which the dotting process script is run; it instructs Adobe Photoshop and Microsoft Excel to perform the necessary functions to carry out the dotting process.

WinBatch – Studio: This is the application within WinBatch from which the user can launch the WinBatch Script.

Working directory: This directory is automatically created by WinBatch during the dotting process for the manipulation of the un-dotted image into the dotted image. It is also deleted automatically, so there will be no evidence of it on your computer system.

Zoom-Macro Diopter: This lens, usually encased in rubber, is fitted onto the camera lens, allowing the video housing system to operate from wide angle to zoom.

