

Glossary of Terms

Ocean Sonics has created this Glossary of Terms for your reference.

Acoustic Bandwidth – The range of frequencies represented in data set.

Acoustic Recorder – A device/system that is capable of recording acoustic (sound) data.

ADC – Analog to Digital Converter.

Analog Hydrophone – A traditional hydrophone which converts pressure (sound) in water into a voltage signal. An analog to digital converter (ADC) is required to convert the signal into usable data. A data logger is also required if the data must be stored for later use.

Autonomous Mode – A hydrophone running stand-alone, typically logging data with no established connection. A mode of operation where a device is left to run on its own. It must be configured to its desired settings prior to deployment.

Autonomous Recorder (AKA: fixed autonomous acoustic recording device) – are defined as any electronic recording system that acquires and stores acoustic data internally (i.e., without a cable or radio link to transmit data to a receiving station), is deployed semi-permanently underwater (via a mooring, buoy, or attached to the sea floor), and must be retrieved to access the data.

Broadband – Broadband is used to mean a broad range of frequencies returnable.

Click Detector – A click detector is an algorithm run on data to detect and count the presence of cetacean clicks (porpoise, dolphins, whales). In Lucy we can use the event counter “measure events” to report the percentage of time a signal is present. This may be used as a click detector.

Continuous Acoustic Recorder – A device/system which can record acoustic data continuously for a period of time, without stopping or missing data, until its storage space runs out.

DAC – Digital to Analog Converter. A device which takes a digital value and outputs a voltage which is proportional to the input value.

Data Logger – A device/system capable of logging/storing data (ex. Autonomous Recorder)

dB – The decibel (abbreviated dB) is the unit used to measure the intensity of a sound.

DHCP – The Dynamic Host Configuration Protocol (DHCP) server automatically assigns IP addresses to connected network devices.

Digital Hydrophone – A hydrophone which converts pressure (sound) in water to a computer usable digital signal

Digital Recorder – A device/system which records data in a digital (computer readable) format, such as audio files or spreadsheets.

Duty Cycle – A duty cycle is the percent of time that an entity spends in an active state as a fraction of the total time under consideration.

Epoch Mode – An epoch is an event, such as a signal, which creates a trigger. This trigger has an action, such as data logging, logging spectrum or waveform data, or recording/transmitting messages. This mode allows users to reduce the amount of stored data by logging only data relevant to the study.

Frequency – The rate at which something occurs or is repeated over a particular period of time or in a given sample.

FFT– Fast Fourier Transform, and is a method used to convert waveform data (time domain) to frequency data (spectrum)

Gain – In electronics, gain is a measure of the ability of a circuit (often an amplifier) to increase the power or amplitude of a signal from the input to the output, by adding energy to the signal converted from some power supply.

Hydrophone – An electrical instrument for detecting or monitoring sound under water. Hydrophones are essentially devices that are configured to pick up underwater sound and convert it into audio signals that can be translated into measurable data.

Hydrophone Transducer – An electroacoustic device containing an element for converting electrical energy into acoustical energy and vice versa

Hydrophone Transducer Element – The component in a transducer that actually converts the electrical energy into acoustical energy and vice versa.

Hydrophone Array – Multiple hydrophones can be arranged in an array in order to determine the direction of a signal.

Marco – Ocean Sonics software application used to find icListen HF hydrophone devices on a network and configure their network settings. This is done by sending broadcast messages to the partner application Polo running inside the hydrophone.

PPS – A pulse per second (PPS) is an electrical signal that has a width of less than one second and a sharply rising or abruptly falling edge that accurately repeats once per second.

Real-Time – The actual time during which a process or event occurs.

Sample Rate – The sampling rate, sample rate, or sampling frequency () defines the number of samples per unit of time (usually seconds) taken from a continuous signal to make a discrete signal.

SCP or SFTP protocols – Secure Copy Protocol, and Secure File Transfer Protocol are both protocols for adding/removing (transferring) files over a network.

Sensitivity – The degree of response of a receiver or instrument to an incoming signal or to a change in the incoming signal.

Smart Hydrophone – A compact, hand-held, all in one instrument that listens for sounds in the ocean. Not only can this instrument be linked to a cable or radio to transmit data to a waiting operator, but it can internally process the data and send it before actually having to retrieve the instrument.

Spectral Analysis – One of the most widely used methods for data analysis in geophysics, oceanography, engineering, etc., method is used with time series.

Spectral Data – The most complete and precise means of describing a sound, by specifying the amount of each wavelength that the sample reflects.

Tethered Mode – A hydrophone connected directly to power (via cable) and typically a computer. A mode of operation where a cable connection is made to an instrument. This allows active powering and control of the device.

VDC – is a three letter abbreviation for volts of direct current.

Waterfall Display – A display showing waveform data snapshots. This graph shows the amplitude of the signal.

Waveform – A waveform is the shape and form of a signal such as a wave moving in a physical medium or an abstract representation.