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Summary	This guideline defines the format of data and information produced from the collection of underwater noise monitoring data including acoustic recordings and environmental influences. If used correctly the data will be easily used and reused.
Keywords	Noise, ambient, sound, acoustic, hydrophone.

Change history		
Version	Date	Change
1.0	13/12/10	First draft of document
2.0	02/02/11	Second draft of document following review
3.0	24/08/11	Amendments to introduction and publication

1.1. Scope and data format for submission to DAC

This guideline covers the collection of underwater noise monitoring data which usually consists of acoustic time sampled data in a digitized format and other influential sensor data such as sea temperature, depth and wind speed. Most commonly, this data is collected from a hydrophone at a particular position and water depth and might be made up of a multiple hydrophone array. Other environmental sensors might be integrated if the measurement platform is a buoy or might be sampled using separate system if the measurement platform is a research vessel.

To submit this data to a Data Archive Centre or transfer to other organisations the raw data should be provided in the file type outputted from the instrument. Other tables should be provided in the .csv format.

1.2. Background to Data Guidelines

The Marine Environmental Data and Information Network (MEDIN) is working towards creating a framework of consistent standards covering the major types of data collection undertaken in the marine environment around the UK. The principle benefits of this suite of standards are:

- Allows contracting organisation to easily specify a format that data should be returned in that can be readily used and includes all relevant attributes
- Provides a consistent format for contractors to work to (rather than a different format for each contract)
- Data can be readily exported to Data Archiving Centres and other users
- Instills good practice amongst users

Each standard defines the data and information that must be stored with a particular data type to ensure it can be readily used and reused. As this type of information is specific for different data types, guidelines are developed for each type. This document describes one such format. Other standards can be accessed through

www.oceannet.org.

1.3 Using this data guideline

This guideline is split into sections that refer to information that can be collated at different levels as shown below:

Project - a collection of surveys that have been completed for a common purpose

Survey - a uniquely identifiable programme of data collection such as a research cruise, moored instrument deployment or survey event

Fixed Station – a target location used as the basis for replicate sample events and for repeat monitoring surveys

Sample Event – a sample specific event of data collection

Sampling Methodology (Data Production Tools) – Details of any method or instruments used to collect the data

Sample Data – the data

Information that is likely to be the same for all samples (e.g. ship used, datums used) is collated in the 'Survey Information' table. Information that is common to each station and sample is collected in the 'Sample Event' table respectively and the raw data is collected in the 'Sample Data' table. The project, survey and fixed station tables in this guideline are common to all MEDIN guidelines and may be used in part to derive a MEDIN discovery metadata record. Where the survey is part of a ship cruise then the cruise report may hold the required information.

The tables below outline the data fields, a description and where available a term list and/or format given at the end of each field which should be used to store the data. Each field is either mandatory, conditional or optional as indicated by M, C, or O respectively. Conditional means that the field must be completed if a value is known. In

the absence of an existing spreadsheet or database to hold the below information, it is recommended that the template available to download from the [MEDIN website](#) is used. Instructions are provided in the template.

In the event that historical data which does not have all the necessary mandatory fields is being configured into this guideline, then it is permissible to use the following entry terms:

Term	Description
unknown	The correct value is not known to and not computable by the creator of this information. However a correct value probably exists.
inapplicable	There is no appropriate value. To be used in cases where metadata elements cannot be set null due to schema constraints.

In some cases it may be necessary to extend this guideline for a specific purpose such as a specific exchange of data between applications or to fulfil the needs of a specific project. This is permissible however we advise that the broad structure and format is maintained and that where possible controlled vocabularies are used. As any extension to the structure and format may be useful for other organisations please inform MEDIN of further agreements.

1.4. Further information on the SeaDataNet, ICES and EPSG term lists

The available catalogues of term lists used for this MEDIN data guideline are provided primarily by SeaDataNet, the International Council for the Sea (ICES) and EPSG. If a term is not available in a recommended list then please contact MEDIN to arrange for the term to be added.

The SeaDataNet list may be viewed at http://seadatanet.maris2.nl/v_bodc_vocab/welcome.aspx . By clicking on the list any term may be searched for by using the drop-down menus or all terms viewed by clicking search. The terms may be viewed in groups of 15 or may be downloaded into an excel file.

The ICES term lists are available at <http://www.ices.dk/datacentre/reco/> Select which list you require from the 'Reference Code List' drop-down box. The results are shown for the selected list and may be downloaded into MS Excel by selecting the inverted green arrow.

There are a number of ways of describing a spatial dataset. Common horizontal coordinate reference systems include WGS84 and British National Grid. Common vertical coordinate reference systems include Highest Astronomical Tide and Ordnance Datum Newlyn (ODN). It is important that which coordinate reference system used for a

data set is recorded so conversions can be carried out between reference systems. The EPSG database of coordinate reference systems (<http://www.epsg.org/Geodetic.html>) provides a dictionary of reference systems. In brief, to find a code click on the OGP Online Registry and if you know the title (eg WGS84) then type this in the 'Name' field and click search. The name, code and further information is displayed. If you are looking for a specific type of reference system such as 'vertical' then click in the 'Type' box, hover over coordinate reference system and click on vertical and then click the search button and all recorded vertical reference systems are shown. If you want to search for a reference system in a particular part of the world (e.g. Northern Ireland Grid) the you may do so by submitting a term to the 'Area' box or fill out the lat and longs then click search. The website also provides a database of the reference systems and web services to access the information.

1.5. Relationship between MEDIN data guidelines and MEDIN discovery metadata

The MEDIN discovery metadata format is aimed at allowing the non-informed user to discover data sets and it is likely that one 'discovery' data set record will contain a large range of data types that are in turn covered by a range of data guidelines. To enable individuals to reuse data of a specific nature (e.g. benthic invertebrate data) then related information must be collected (e.g. data owner, reference systems used etc). Some of the information which is collected at the Survey Level in a data guideline is also required to create a discovery metadata record. Who creates the MEDIN discovery record for a dataset is case specific and dependant on the organisation, and the relationship it has with a Data Archive Centre. However it is intended that the information collected at the 'Survey Information' level is reused for creating a MEDIN discovery metadata record. Further details are available on the MEDIN website which demonstrate clearly which fields in the MEDIN Data Guidelines can be reused for which elements in the MEDIN Discovery Metadata Standard.

1.6. Updates and Feedback

If you have any comments or feedback on this guidelines please contact enquiries@oceannet.org . Standards develop over time and it is likely that this standard will change in the future. We advise that you return to the [oceannet website](#) to identify new versions and that you sign up to the MEDIN Standards e-mail listing (e-mail mecha@bodc.ac.uk) and [Marine Data News](#) to be kept informed of developments.

2.1. Project Information.

If your collection of data forms part of a wider project or time series then the below details must be recorded. If the work is a small survey then the details below may not be required. A project is a collection of surveys that have been completed for a common purpose. For example: an environmental impact assessment composed of a number of separate surveys; scientific research composed of a number of different research cruises; a legislative monitoring programme which is conducted each year over several years. A project is usually funded by the same organisation(s) for its lifetime.

M, C, O indicate which fields are mandatory, conditional or optional.

Heading	M, C, O	Description	Recommended Term List or Format
Project name	M	The nationally/internationally accepted version of the project name.	Free text; e.g. North Hoyle Windfarm EIA Rapid Climate Change; Dogger Bank pSAC Monitoring Programme; EA Bathing Water Monitoring Programme 1989-2010
Project website	C	If a project website exists give the address. This should be the web address of the environmental surveys and not in the case of impact assessments the engineering development.	e.g. http://www.noc.soton.ac.uk/rapid/rapid.php
Project start date	M	The date that the project started which is from when the funding was in place to start. Use the 1 st of the month if the exact date is not known.	Date; yyyy-mm-dd; e.g. 2001-01-24; 1973-01-01
Project end date	C	The date that the project finished or is due to finish. Use the 1 st of the month if the exact date is not known.	Date; yyyy-mm-dd; e.g. 2007-01-24; 1976-01-01
Project code	M	Provide a code to uniquely identify the project and allow links to be made between the tables. To ensure uniqueness, it is recommended that the website of	Free text; e.g. http://www.dassh.ac.uk/ME102 ; http://www.bodc.ac.uk/RCC ;

		organisation responsible for the work is used followed by a unique code designated by the responsible organisation which should reflect the code used by the funding organisation where possible.	http://www.environment-agency.gov.uk/78949
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2.2. Survey Information (Data Activity).

The survey information is a uniquely identifiable programme of data collection such as a research cruise, moored instrument deployment or survey event. This information is likely to be the same for all sample events (e.g. stations) and subsamples in a given data set such as a cruise. Note that in the event that these are not common to all sample events then they should be specified for each one. These fields are common throughout all other MEDIN data guidelines and only need to be given once and referenced if your data set is composed of many data types and therefore conforms to a number of MEDIN Data Guidelines. Where data collection is undertaken on research vessels the data below can often be sourced in the Cruise Summary Report.

M, C, O indicate which fields are M - mandatory (must be filled in), C - conditional (must be filled in if exists in data resource, e.g. if a depth coordinate system was used the depth and), or O - optional respectively.

Heading	M, C, O	Description	Recommended Term List or Format
Survey name	M	Title of the survey	Free text; e.g. 2004 CCW Menai Strait benthic monitoring survey
Survey abstract	M	Brief description of the purpose of the survey and other types of measurements that were made for the survey.	Free Text e.g. Survey was the first in a series of 3 in 2010 whose specific aim beyond that stated in the project was to identify sites suitable for further monitoring. As such it geophysical techniques were using in combination with grabs and cores to assess seabed type.
Survey code	M	A unique code for the survey to allow links to be built between this and sample event data, (the cruise identifier code could be used). To ensure uniqueness, it is recommended that the website of organisation responsible for the work is used followed by a unique	Free text; e.g. http://www.noc.ac.uk/JCR3022 ; http://www.bennett.ac.uk/RIBJULY_03_01)

		code designated by the responsible organisation.	
Originator	M	The organization who has created the data set. If the organization is not in EDMO please contact enquiries@oceannet.org to add it. If a person who is not associated with any organization generated the data then please provide the name in the sample event table.	Term List; European Directory of Marine Organisations e.g. 28: Centre for Environment, Fisheries and Aquaculture Science, Lowestoft Laboratory 2588: ABP Marine Environmental Services Ltd
Owner	M	Organization that owns the data set. If the organization is not in EDMO please contact enquiries@oceannet.org to add it.	Term List; European Directory of Marine Organisations e.g. 78: Department of Environment Fisheries and Rural Affairs 53: BP Exploration and Production
Survey start date	M	The date and time that the survey started.	Date or DateTime; yyyy-mm-dd or yyyy-mm-dd hh:mm:ss e.g. 2009-01-24 12:33:00
Survey end date	C	The date and time that the survey ended. May be left null if the survey is ongoing.	Date or DateTime; yyyy-mm-dd or yyyy-mm-dd hh:mm:ss e.g. 2009-02-16 16:33:00
Spatial coordinate reference system*	M	Describes the system of spatial referencing. I.e. the datum used to provide details of latitude and longitude. (See section 1.4 on accessing term lists).	Term List; http://www.epsg.org/Geodetic.html e.g. WGS84 code: EPSG::7030; British National Grid (projected) code: EPSG::27700; ETRS89 / UTM zone 28N code: EPSG::25828; ETRS89 / UTM zone 29N code: EPSG::25829; ED50 code: EPSG::4230;

			UTM31N code: EPSG::23031
Position fix method and source*	M	Give the method and source of the position fix instrument.	Free Text; e.g. Differential GPS taken from the ships navigation equipment. 4 point satellite fix achieved
Horizontal positional accuracy*	M	How accurate the spatial positions are likely to be.	Number; units = meters e.g. 15
Depth coordinate reference system*	C	Give the reference to which the depth has been calculated e.g. Ordnance Datum Newlyn; Highest Astronomical Tide. Mandatory if seabed depths are given for each sample. See section 1.4 on accessing term lists.	Term List http://www.epsg.org/Geodetic.html e.g. Ordnance Datum Newlyn code: EPSG::5701 Malin Head height code: EPSG::5731
Vertical positional accuracy*	C	How accurate the vertical resolution is. Must be provided if seabed depths are given.	Number; units = meters e.g. 0.5
Platform type*	O	The platform type (e.g. Research Vessel) from which the sampling device was deployed.	Term list; SeadataNet Platform Classes (L061) e.g. 31: Research Vessel; 13: beach/intertidal zone structure; 48: mooring; 71: human
Ship name*	M	The name of the ship from which the sampling device was deployed. If your ship is not on the list please contact accessions@ices.dk	Term list SHIPC at http://www.ices.dk/datacentre/reco/ e.g. 74LG: Lough Foyle AA30: Unspecified Ship 74E9: Cefas Endeavour AA36: Unspecified Fishing Vessel AA33: Unspecified Self-Propelled Small Boat

Cruise report reference*	O	Cruise report or boat log reference if applicable.	Free text; in reference format. e.g. Litt, E.J. 2009. PHiXT 4. 30 July to 2 August 2009 <i>RV Prince Madog</i> POL Coastal Observatory Liverpool Bay Cruise Report. POL Coastal Observatory, Liverpool.
Project code	C	If the survey forms part of a wider project then state the code of the project given in the project table to allow links to be made between the tables.	Free text; e.g. RCC

*Fields marked are unlikely to be required for the collection of leisure and recreation data

2.3. Fixed (Target) Station Information.

You should only use this table if you are returning to the same fixed point/transect/area on several occasions to form a time series – ie. there is a target location for your sample event. When returning to a target station, the actual sample event may not be in exactly the same location each time due to ship movements or sampling strategy, however it is useful to record both the position which is intended to be sampled (fixed) and the actual sampling position (sample). Therefore, the information below must be included if a fixed point, transect or area is used as the basis for replicate sample events and for repeat monitoring surveys. Actual coordinates should be placed in the sample event table. A fixed station may be a point, transect, or an area. If the fixed station is a transect or an area then the secondary latitude and longitude fields must be completed.

Heading	M, C, O	Description	Recommended Term List or Format
Fixed station identifier	M	A unique identifier for the station.	Free text. e.g. Stanton_Bank_station_4 (point) EastChan_Innerdover_se04 Liverpool_Dublin_ferry_route1 (transect) Lagan_Estuary (area)
Primary latitude (decimal degrees)	M	The primary latitude of the fixed station given in decimal degrees. For a point this field is set to the point latitude; for a transect it is set to the latitude of the start of the transect; for an area it is set to the southern edge of the box. Units are positive North.	Decimal degrees; minimum of four and a maximum of five decimal places. e.g. 54.5837
Primary longitude (decimal degrees)	M	The primary longitude of the sample given in decimal degrees. For a point this field is set to the point longitude; for a transect it is set to the longitude of the start of the transect; for an area it is set to the western edge of the box. Units are positive east (West is negative, East is positive).	Decimal degrees; minimum of four and a maximum of five decimal places. e.g. -5.5837
Secondary	C	The secondary latitude of the fixed station given in	Decimal degrees; minimum of two and a

latitude (decimal degrees)		decimal degrees. For a point this field is not required; for a transect it is set to the latitude of the end of the transect; for an area it is set to the northern edge of the box. Units are positive North.	maximum of five decimal places. e.g. 55.7393
Secondary longitude (decimal degrees)	C	The secondary longitude of the sample given in decimal degrees. For a point this field is not required; for a transect it is set to the longitude of the end of the transect; for an area it is set to the eastern edge of the box. Units are positive east (West is negative, East is positive).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. -3.7394
Original co ordinates and coordinate transformation technique	C	If coordinates were transformed from a different reference system into decimal degrees then the original coordinate and original coordinate reference system should be given, the method used to transform stated and any differences in the relative (significant figures) of the original transformation explained.	Free text; e.g. SX498476, Coordinates were transformed from British National Grid using in house software 'BODC_transform'. The number of significant figures was reduced to 4 decimal degrees in line with the accuracy of the coordinate and transformation technique.
Position fix method and source	M	Give the method and source of the position fix instrument.	Free Text; e.g. Differential GPS taken from the ships navigation equipment. 4 point satellite fix achieved)
Description of fixed station spatial form	M	Describe if the fixed station is a point, transect (curve) or an area (surface).	Term list; <u>SeadataNet Geospatial Feature Type (L021)</u> : 004: Point 003: Curve 005: Surface

2.4. Sample Event (Deployment Details). This table holds information on the location, time and local conditions of each ambient noise recording. Instruments for underwater ambient noise monitoring may be deployed for short durations directly from a surface vessel or may be deployed for extended durations using moored buoys.

Heading	M, C, O	Description	Recommended Term List or Format
Survey code	M	Give the survey code to allow links to be built between this table and survey data table.	Free text; (e.g. JCR3022)
Sample Event identifier	M	A unique identifier for the sample event under consideration. This must provide a clear link to the data file.	Free text; e.g. NPL007 e.g. EC5202
Fixed station identifier	C	If you are returning to the same fixed point/transect/area on several occasions to form a time series – ie. there is a target location for your sample event, then put the identifier specified in the fixed station table in here.	Free text; e.g. Stanton Bank site 4 PS74926
Method identifier	M	Provide the identifier for the methods used as stated in the Sampling Method (Data Production Tool) table. If multiple methods were used separate codes using a comma.	Free text; e.g. TIMES4376 02465, 02896
Position description	M	Description of the local area to include factors which could influence the ambient noise measurements	Free text; e.g. Measurements performed in the vicinity of a busy shipping lane; or Measurements performed near a surf zone.
Survey vessel name	M	The name of the vessel if used as the measurement platform	Term list SHIPC at http://www.ices.dk/datacentre/reco/ (e.g. 74LG Lough Foyle)
Hydrophone deployment type	M	Give details of the type of deployment	Free text; e.g. Hydrophone was deployed from a drifting survey vessel; e.g. Hydrophone was deployed from a moored monitoring buoy
Data	M	The date and time of data sampling start point.	yyyy-mm-dd or yyyy-mm-dd hh:mm:ss

sampling start date and time			(e.g. 2009-01-24 13:33:00)
Latitude of data sampling start position in original recorded format	M	The latitude of the data sampling start position given in whichever format was used to record at the time of sampling. Units are positive north. Datum must be specified (preferably WGS 84).	e.g. 50°47'24"
Longitude of data sampling start position in original recorded format	M	The longitude of the data sampling start position given in whichever format was used to record at the time of sampling. Units are positive east. Datum must be specified (preferably WGS 84).	e.g. -4°21'53"
Latitude of data sampling start (decimal degrees)	M	The latitude of the data sampling start position given in decimal degrees. Units are positive north. Datum must be specified (preferably WGS 84).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. 54.5837
Longitude of data sampling start (decimal degrees)	M	The longitude of the data sampling start position given in decimal degrees. Units are positive east. Datum must be specified (preferably WGS 84).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. -3.476
Data sampling stop date and time	M	The date and time of data sampling stop point.	yyyy-mm-dd or yyyy-mm-dd hh:mm:ss (e.g. 2009-01-24 13:33:00)
Latitude of data sampling stop position in original recorded format	M	The latitude of the data sampling stop position given in whichever format was used to record at the time of sampling. Units are positive north. Datum must be specified (preferably WGS 84).	e.g. 50°47'24"
Longitude of data sampling	M	The longitude of the data sampling stop position given in whichever format was used to record at the	e.g. -4°21'53"

stop position in original recorded format		time of sampling. Units are positive east. Datum must be specified (preferably WGS 84).	
Latitude of data sampling stop (decimal degrees)	M	The latitude of the data sampling stop position given in decimal degrees. Units are positive north. Datum must be specified (preferably WGS 84).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. 54.5837
Longitude of data sampling stop (decimal degrees)	M	The longitude of the data sampling stop position given in decimal degrees. Units are positive east. Datum must be specified (preferably WGS 84).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. -3.476
Time zone	M	Give the time zone in which the date and time of the sample collection is made (preferably Coordinated Universal Time (UTC))	Free Text; e.g. UTC
Water column depth	M	The water column depth	Number; units = metres; e.g. 25 m
Hydrophone depth	M	Depth of hydrophone during ambient noise measurement performed, or height off seabed for a bottom mounted device	Free text; number; units = metres; e.g. depth 15 m; or height off seabed 10 m
Seabed type	O	Seabed type to be logged	Free text; e.g. gravelly sand
Tidal flow	O	Provide information on tidal flow in the area	Free text; e.g. Tidal flows up to 3 knots in the area

2.5. Sample Methods, Instruments and Data Acquisition Information (Data Production Tools).

In many cases the information in this table is consistent for a whole survey in which case it should only have to be completed once. Where necessary the information in this table should be completed for each parameter under consideration. Information in this table may also be used to complete fields in the discovery metadata. The field 'Method Identifier' provides the link between this table and the sample event table. The instrument details should be provided for each instrument sensor and a clear relationship made to the sample data file headings to allow a data manager to determine which channels (or headings) within the files refer to which sensor.

Heading	M, C, O	Description	Recommended Term List or Format
Method Identifier	M	A unique code for the methods to allow links to be built between this and sample event data.	Free text; e.g. TIMES4376
Hydrophone mounting point	M	State if hydrophone is surface suspended or bottom mounted	Free text; e.g. Hydrophone is surface suspended; e.g. Hydrophone is bottom mounted
Hydrophone mounting	M	Give details of hydrophone mounting arrangement either from surface or seabed, including any anti-heave mechanism	Free text; e.g. Measurement hydrophone was mounted on weighted rope from the survey vessel using an a floating anti-heave mechanism; e.g. Measurement hydrophone was floated from an anchor on the seabed using a subsurface float
Hydrophone details	M	Hydrophone description, manufacturer and model, serial number. Include — frequency bandwidth, calibrated sensitivity at nominal frequency, calibration date.	Free text; e.g. Reson TC4032, serial number 319008, with 1 Hz to 80 kHz bandwidth and nominal sensitivity of 170 dB re 1V/micrPascal.....at 250 Hz, last calibrated 01/03/09
Hydrophone filter/pre-amplifier	M	Pre-amplifier and filter unit description, manufacturer and model, serial number.	Free text; e.g. Reson input module, model no. EC6073, with serial no. 221001 used with TC4032 internal pre-amplifier; e.g. Reson VP1000 pre-amplifier, model no. EC6061, with serial no. 222003
DAQ system	M	Data acquisition system details and software used	Free text; e.g. A National Instruments

details		on DAQ system	PC6100 was used with LabView DAQ software.
DAQ dynamic range setting	M	Dynamic range setting used on DAQ system	Number; units = mV or V; e.g. 10 V
Pre-amplifier/system gain settings	M	Gain of measurement system, including settings on pre-amplifier	Number; units = dB; e.g. 6 dB gain
Frequency filter settings	M	Pass-band frequencies set on filter for low pass/high-pass/band-pass	Number; units = Hz or kHz; e.g. HP = 10 Hz; e.g. LP = 500 kHz
Data format	M	Uncompressed recording data format used for storage	Free text; e.g. wav file
Data scaling factor	M	State any scaling factor (provided as a multiplier) associated with the data format - particularly important for wave files	Free text; e.g. the wav file has a scaling factor of 0.619
Sample rate	M	DAQ sample rate used for recording	Number; units = samples per second; e.g. 262,000 S/s or 262 kS/s
Bit resolution	M	DAQ bit resolution used for recording	Number; units = bits; e.g. 16 bits
Sample interval	M	Give sample timing interval	Free text; e.g. 30 second noise sample taken every hour
Channel identification	M	State which hydrophone is used on each channel	Free text; e.g. Hydrophone serial no. 319008 on Channel 1

2.6. Sample Data Noise measurement data typically consists of acoustic recordings in a digital file format. It is recommended that the raw data files from the noise data acquisition instrument are supplied as well as any additional files to which calibration corrections may have been applied. It is recommended that these ambient noise recordings are stored as uncompressed WAV files which can be read universally. WAV file allows extensions for header information which can contain, timing and scaling information. These data should be provided in the recommended form with header information sufficiently explained, along with all necessary, identification, scaling and calibration information. The units for the content of the data file should also be provided.

The following ancillary information must be included along with each ambient noise recording and cross-referenced using the sample event code and position identifier. If the ancillary data is obtained from a moored instrument then the 'MEDIN data guideline for the recording of moored instrument data' should be followed where necessary. If the ancillary data is obtained from a surface vessel then the 'MEDIN data guideline for the recording of oceanographic vertical profile data', should be followed where necessary. All ancillary data should be time-stamped to allow cross-referencing with ambient noise measurement data.

Heading	M, C, O	Description	Recommended Term List or Format
Sample Event identifier	M	A unique identifier for the sample under consideration to allow links to be made to the sample event and the noise data file	Free text; e.g. NPL007 e.g. EC5202
Water temperature	O	The water temperature stated as a function of depth during ambient noise measurements	Number; units = degrees celcius and metres; e.g. 11 °C at 30 m
Salinity	O	The water salinity stated as a function of depth during ambient noise measurements	Number; units = parts per thousand and metres; e.g. 30 ‰ at 30 m
Air temperature	O	The air temperature during ambient noise measurements	Number; units = degrees celcius; e.g. 18 °C
Rainfall and other precipitation	M	Weather conditions during ambient noise measurements - state if raining, snowing	Free text; e.g. Heavy rain during measurements
Wind speed	M	Wind speed during ambient noise measurements stated at height above sea-level measured	Number; units = knots and metres; e.g. 5 knots at 20 m

Sea-state	O	Sea-state during ambient noise measurements	Number; scale = Beaufort force; e.g. force 2-3
Tidal range	O	Tidal range at the location and during the period of the ambient noise measurements	Free Text; e.g. maximum tidal range of 3 m during monitoring period
Self-generated platform noise	M	Log of any self-generated platform noise	Free text; e.g. Survey vessel generator running
Local shipping activity	M	Local shipping activity during ambient noise measurements obtained from visual observations or AIS	Free text; e.g. Cargo ship passed by at approximately 2 nautical miles, at 14:10:00
Other noise sources in the area	M	Other potential noise sources should be logged with as much detail as is possible for type of monitoring which might influence the ambient noise measurements	Free text; e.g. Seismic survey taking places 30 km north of monitoring position; or lighting striking sea-surface at 14:10:00; or aircraft flying over head at 14:10:00