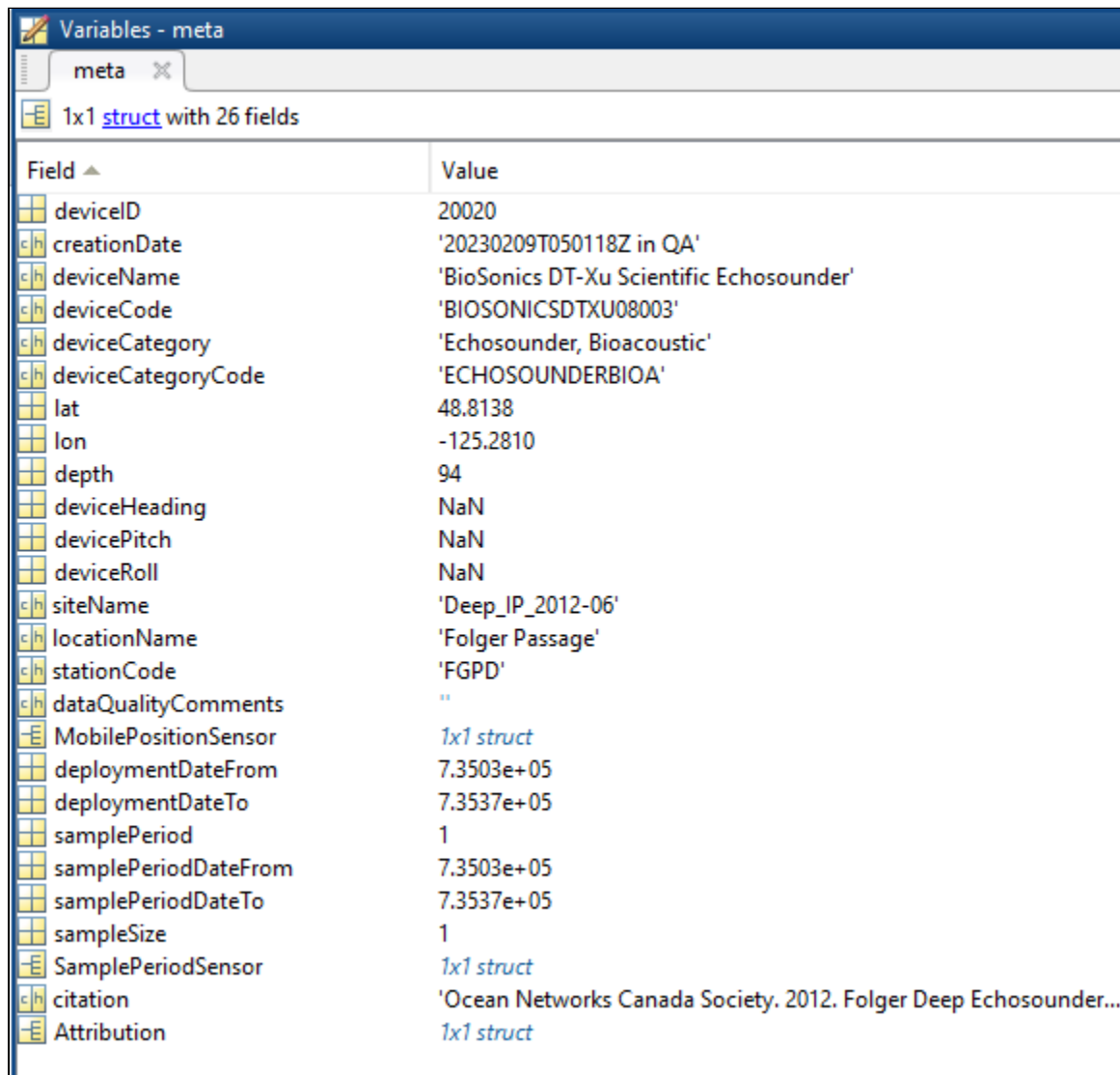


# MAT file Metadata structure - Complex

**Meta:** a structure array containing the following metadata fields:



The screenshot shows the MATLAB 'Variables' window with a tab for 'meta'. It displays a 1x1 struct with 26 fields. The fields are listed in a table with icons indicating their data types: numeric (yellow square), character (blue 'c' in a square), string (blue 'h' in a square), or struct (blue 'E' in a square).

Field	Value
deviceId	20020
creationDate	'20230209T050118Z in QA'
deviceName	'BioSonics DT-Xu Scientific Echosounder'
deviceCode	'BIOSONICS DTXU08003'
deviceCategory	'Echosounder, Bioacoustic'
deviceCategoryCode	'ECHOSOUNDERBIOA'
lat	48.8138
lon	-125.2810
depth	94
deviceHeading	NaN
devicePitch	NaN
deviceRoll	NaN
siteName	'Deep_IP_2012-06'
locationName	'Folger Passage'
stationCode	'FGPD'
dataQualityComments	''
MobilePositionSensor	1x1 struct
deploymentDateFrom	7.3503e+05
deploymentDateTo	7.3537e+05
samplePeriod	1
samplePeriodDateFrom	7.3503e+05
samplePeriodDateTo	7.3537e+05
sampleSize	1
SamplePeriodSensor	1x1 struct
citation	'Ocean Networks Canada Society. 2012. Folger Deep Echosounder...'
Attribution	1x1 struct

- **deviceId**: A unique identifier to represent the instrument within the Ocean Networks Canada data management and archiving system.
- **creationDate**: Date and time (using ISO8601 format) that the data product was produced. This is a valuable indicator for comparing to other revisions of the same data product.
- **deviceName**: A name given to the instrument.
- **deviceCode**: A unique string for the instrument which is used to generate data product filenames.
- **deviceCategory**: Device category to list under data search ('Echosounder').
- **deviceCategoryCode**: Code representing the device category. Used for accessing webservices, as described here: [API / webservice documentation](#) (log in to see this link).
- **lat**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site latitude and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure..
- **lon**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site longitude and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure.
- **depth**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site depth and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure.
- **deviceHeading**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site heading and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure.
- **devicePitch**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site pitch and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure.
- **deviceRoll**: Fixed value obtained at time of deployment. Will be NaN if mobile or if both site roll and device offset are null. If mobile, sensor information will be available in mobilePositionSensor structure.
- **siteName**: Name corresponding to its latitude, longitude, depth position.
- **locationName**: The node of the Ocean Networks Canada observatory. Each location contains many sites.
- **stationCode**: Code representing the station or site. Used for accessing webservices, as described here: [API / webservice documentation](#) (log in to see this link).
- **dataQualityComments**: In some cases, there are particular quality-related issues that are mentioned here.

- MobilePositionSensor: A structure with information about sensors that provide additional scalar data on positioning and attitude (latitude, longitude, depth below sea surface, heading, pitch, yaw, etc).

meta.MobilePositionSensor	
Field	Value
name	1x1 cell
sensorID	NaN
deviceID	NaN
dateFrom	NaN
dateTo	NaN
typeName	1x1 cell
offset	NaN
units	1x1 cell
sensorTypeID	NaN
correctedSensorID	NaN

- name: A cell array of sensor names for mobile position sensors. If not a mobile device, this will be an empty cell string.
- sensorID: An array of unique identifiers of sensors that provide position data for mobile devices - this data may be used in this data product.
- deviceID: An array of unique identifiers of devices that provide position data for mobile devices - this data may be used in this data product.
- dateFrom: An array of datenums denoting the range of applicability of each mobile position sensor - this data may be used in this data product.
- dateTo: An array of datenums denoting the range of applicability of each mobile position sensor - this data may be used in this data product.
- typeName: A cell array of sensor names for mobile position sensors. If not a mobile device, this will be an empty cell string. One of: Latitude, Longitude, Depth, COMPASS\_SENSOR, Pitch, Roll.
- offset: An array of offsets between the mobile position sensors' values and the position of the device (for instance, if cabled profiler has a depth sensor that is 1.2 m above the device, the offset will be -1.2m).
- sensorTypeID: An array of unique identifiers for the sensor type.
- correctedSensorID: An array of unique identifiers of sensors that provide corrected mobile positioning data. This is generally used for profiling deployments where the latency is corrected for: CTD casts primarily.
- deploymentDateFrom: The date of the deployment on which the data was acquired.
- deploymentDateTo: The date of the end of the deployment on which the data was acquired (will be NaN if still deployed).
- samplingPeriod: Sample period / data rating of the device in seconds, this is the sample period that controls the polling or reporting rate of the device (some parsed scalar sensors may report faster, some devices report in bursts) (may be omitted for some data products).
- samplingPeriodDateFrom: matlab datenum of the start of the corresponding sample period (may be omitted for some data products).
- samplingPeriodDateTo: matlab datenum of the end of the corresponding sample period (may be omitted for some data products).
- sampleSize: the number of readings per sample period, normally 1, except for instruments that report in bursts. Will be zero for intermittent devices (may be omitted for some data products).
- SamplePeriodSensor: A structure array with an entry for each scalar sensor on the device (even though this metadata is for complex data products that don't use scalar sensors).

meta.SamplePeriodSensor									
Fields	sp	dateFrom	dateTo	sampleSize	deviceID	sensorID	isDeviceLevel	sensorName	
1	1	7.3695e+05	7.3727e+05	1	20001	8214	1	'Sound Speed'	
2	1	7.3695e+05	7.3727e+05	1	20001	8215	1	'Magnetic Com...	
3	1	7.3695e+05	7.3727e+05	1	20001	8216	1	'Pitch'	
4	1	7.3695e+05	7.3727e+05	1	20001	8219	1	'Pressure'	
5	1	7.3695e+05	7.3727e+05	1	20001	8217	1	'Roll'	
6	1	7.3695e+05	7.3727e+05	1	20001	8218	1	'Temperature'	
7									

- sp: sample period in seconds (array), unless sensorid is NaN then this is the device sample period
- dateFrom: array of date from / start date (inclusive) for each sample period in MATLAB datenum format.
- dateTo: array of date to / end date (exclusive) for each sample period in MATLAB datenum format.
- sampleSize: the number of readings per sample period (array). Normally 1, except for instruments that report in bursts. Will be zero for intermittent devices.
- deviceID: array of unique identifiers of devices (should all be the same).
- sensorID: array of unique identifiers of sensors on this device.
- isDeviceLevel: flag (logical) that indicates, when true or 1, if the corresponding sample period/size is from the device-level information (i.e. applies to all sensors and the device driver's poll rate).
- sensorName: the name of the sensor for which the sample period/size applies (much more user friendly than a sensorID).
- citation: a char array containing the DOI citation text as it appears on the [Dataset Landing Page](#). The citation text is formatted as follows: <Author (s) in alphabetical order>. <Publication Year>. <Title, consisting of Location Name (from searchTreeNodeName or siteName in ONC database) Deployed <Deployment Date (siteDeploymentDate in ONC database)>. <Repository>. <Persistent Identifier, which is either a DOI URL or the queryPID (search\_dtlid in ONC database)>. Accessed Date <query creation date (search.datecreated in ONC database)>

- Attribution: A structure array with information on any contributors, ordered by importance and date. If an organization has more than one role it will be collated. If there are gaps in the date ranges, they are filled in with the default Ocean Networks Canada citation. If the "Attribution Required?" field is set to "No" on the [Network Console](#) then the citation will not appear. Here are the fields:

meta.Attribution	
Field ▲	Value
acknowledgement	'Ocean Networks Canada Data Archive, <a href="http://www.oceannetworks.ca">http://www.oceannetworks.ca</a> , University of Victoria, Canada'
startDate	[]
endDate	[]
organizationName	'Ocean Networks Canada'
organizationRole	'Owner'
roleComment	''

- acknowledgement: the acknowledgement text, usually formatted as "<organizationName> (<organizationRole>)", except for when there are no attributions and the default is used (as shown above).
- startDate: datenum format
- endDate: datenum format
- organizationName
- organizationRole: comma separated list of roles
- roleComment: primarily for internal use, usually used to reference relevant parts of the data agreement (may not appear)