

ODAS (Ocean Data Acquisition System) Metadata Format Version 1.1

(Draft)

ODAS metadata is the information about Ocean Data Acquisition Systems. ODAS Metadata Format Recommendation 1 (JCOMM-I) were developed by the Subgroup on Marine Climatology to describe the data from such ocean data acquisition systems as moored and drifting buoys, profile floats, offshore platform and so on. They focus on the descriptions of original features of observing data, especially the environmental features in data acquisition.

ODAS metadata format has two levels. Level 1 is the header records which describe the general information and acquisition conditions of dataset sources. Level 2 is the detailed descriptions of working conditions of various sensors. A sensor record will only exist when there is an actual sensor on the platform and it can be repeated for every sensor of a given type. ODAS metadata record structure sees Figure 1.

At the JCOMM DMCG-I meeting in 2002, the National Marine Data and Information Service (NMDIS) of China volunteered to undertake the construction of the ODAS Metadata Management Center. NMDIS perfected the ODAS Metadata Format Recommendation 1 to draft the ODAS Metadata Format Version 1.1. Latest location date and location of platforms were added in the header record (HR). The platform ID in ODAS was added in both header record and sensor records to link platform and its sensors. Code table was extended.

ODAS XML Schema has been developed and used by ODAS Metadata Management Center. They are compatible with the ODAS metadata format 1.1. Annex 1 is ODAS tables for ODAS metadata content, annex 2 is XML schema for ODAS metadata format 1.1.

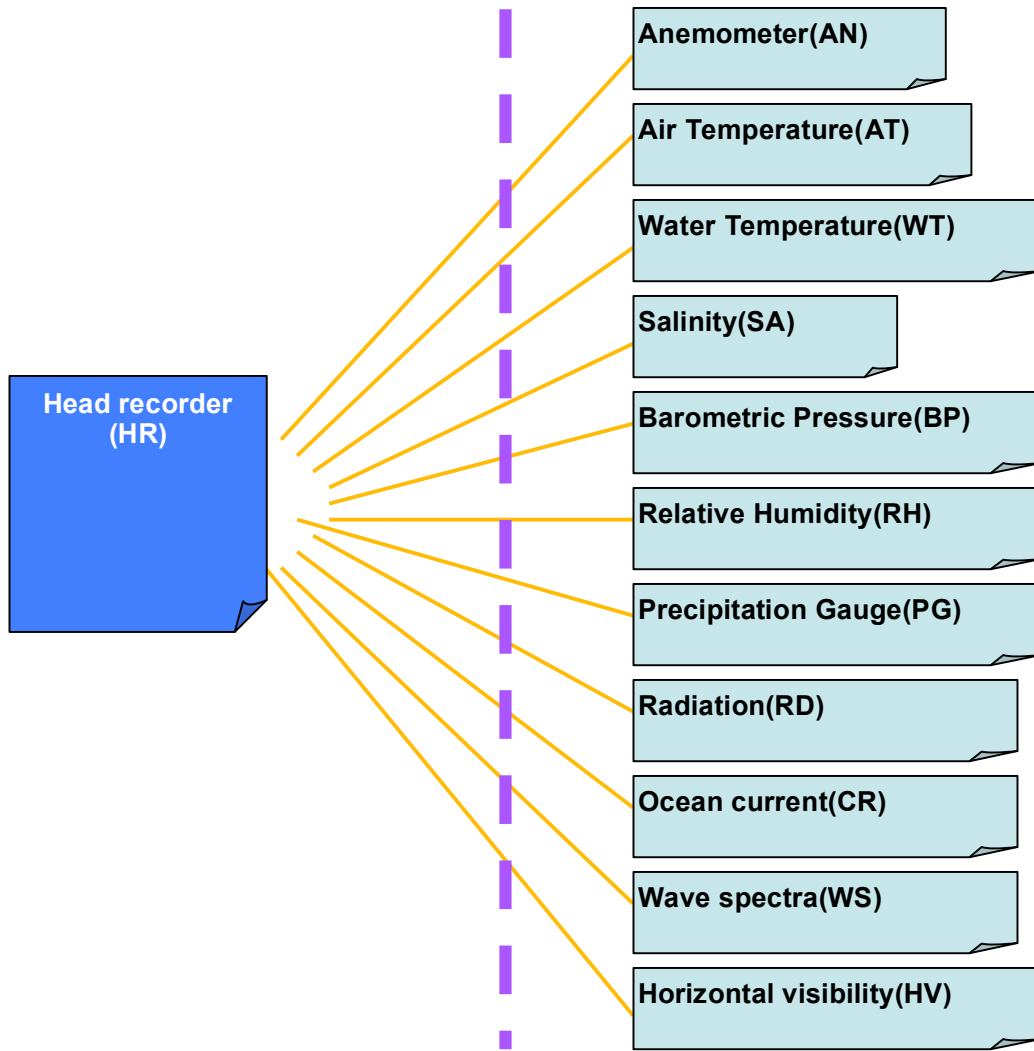


Figure 1. ODAS metadata record structure

Annex 1: ODAS metadata content

HEADER RECORD

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	ID		Platform ID in ODAS, keyword, can't repeat
2	mc		Metadata contributor, abbreviation name of organization or DAC that contribute metadata
3	ts		Type of station
		MB	Moored buoy
		DB	Drifting buoy
		ID	Ice drifter
		FP	Fixed platform (oil rig, etc.)
		IS	Island station
		AL	Automatic light station
		CM	Coastal marine automated station
		PF	Profiling floats (e.g. ARGO — a global array of profiling floats)
		UN	Unknown
OT	Other (specify in footnote # 1 Header record)		
4	WMO _n		WMO number — 5-digit identifier
5	stn		Unique call sign if available; otherwise, station name (C-MAN, platforms, etc.)
6	AIn		Additional identifier number; define in footnote # 2 (e.g. ARGOS = up to 7 digits, GOES no., others)
7	ind		Period of validity/beginning of historical record (initiation date, e.g. 1995-3-21) date of mooring, launching, or platform instrumentation (date the platform began collecting weather observations under its current ID and location). If the platform is moved or assigned a new ID then a new period of validity should be initiated.
8	oed		Operational end date of platform operations (e.g. 2000-1-27). This item is associated with the entry above which shows the beginning date and this item the ending date when a platform closed operations. If for example a moored buoy was placed in the Great Lakes each spring and withdrawn each winter the beginning date would not change unless the identifier, ownership, or location changed at some point. When one of these change, a new beginning date should be entered “ind” above and an operational end date entered in this field
9	ltd		Latest location date of platform.

10	cnty	see list	Country of ownership — International Organization for Standardization
11	ragy		Responsible agency/organization within a country responsible for the platform's operations, launch, and metadata [e.g. in the United States it could be the National Ocean Service (NOS) NOAA, National Data Buoy Center (NDBC) NOAA, Woods Hole Institute, etc.] List the full name of the organization or agency responsible.
12	ldmu		Last date metadata updated (e.g. 2000-5-27)
13	DA		Degree of automation
		1	Fully automated
		2	Always supplemented with manual input
		3	Occasionally supplemented with manual input
		4	Fully manual (no automation)
	5	Unknown	
14	Lat		Latitude — degrees, up to three decimal places if available (e.g. 50.985 N/S)
15	Lon		Longitude — degrees, up to three decimal places if available (e.g. 124.976 E/W)
16	lflat		Latest latitude, up to three decimal places, the value is from -90 to 90, southern latitude is negative value and northern latitude is positive value.
17	lflon		Latest longitude, up to three decimal places, the value is from -180 to 180, western longitude is negative value and eastern longitude is positive value.
18	WC		Watch circle — nearest whole metre (e.g. 346.5 = 347 m). The maximum distance a moored buoy can be located from its central position related to the length and type of mooring. Outside the watch circle and the moored buoy is likely adrift
19	lngth		Length — the length of the platform (if rectangular or boat shape hull). See code "diam" below if the platform is a discus. Metres to tenths (e.g. 26.9 m)
20	Brth		Breath — the breadth (width) of the platform (if rectangular or boat shaped hull). Metres to tenths (e.g. 12.6 m)
21	Diam		Diameter — platform dimension for discus type hulls. Diameter in metres to tenths (e.g. 6.0 m)
22	Hult		Hull type
		DS	Discus (cylinders)
		BS	Boat shaped hull
		RS	Rectangular shape
	SP	Spars	

		OD	ODAS 30 series
		NM	NOMAD
		TR	Torus
		CN	Conic
		OR	Omnidirectional wave-rider
		DR	Directional wave-rider
		UN	Unknown
		OT	Other (specify in footnote # 3 Header record)
23	Huln		Hull or platform number — enter as assigned (a combination of numeric and alpha characters if required)
24	Mtyp		Mooring type — mooring type if a moored buoy or drogue type if drifting buoy
		AC	All chain (shallow depths generally up to 90 m)
		ST	Semitaut (intermediated depths generally 60 to 600 m — generally nylon cable)
		FC	Float inverse catenary (deep ocean generally 600 to 6 000 m — generally nylon with glass floats)
		PC	Poly-nylon inverse catenary (deep ocean generally 1 200 to 6 000 m)
		DT	Drogue type
		HS	Holey sock drogue
		TS	Tristar
		WS	Window shade
		PA	Parachute
		NL	Non-Lagrangian sea anchor Use for either mooring or drogue as needed
		UN	Unknown
		OT	Other (specify in footnote # 4 Header record)
25	Cmsy		Satellite data-collection system — system used to transmit the observations
		GO	GOES DCP
		AR	ARGOS PTT
		GA	GOES primary ARGOS backup
		RF	RF
		UN	Unknown
		OT	Other (specify in footnote # 5 Header record)
26	Stt		Satellite transmission time — time slot assigned for observation transmission. Hours and minutes UTC (e.g. 1230) or for example, on the hour, on the half-hour, two orbits per day, etc.
27	Foo		Frequency of observations — hours and minutes (e.g. every hour = 1.0,

			every 6 hours = 6.0, or every half hour 0.5, etc., I = irregular)
28	dfmt		Data format — data format (<i>Manual on Codes</i> (WMO-No. 306)) the observations was transmitted or digitized (i.e. observational form). BUOY — FM 18-X SHIP — FM 13-X TESAC — FM 64-IX WAVEOB — FM 65-IX BUFR — FM 94-XI Other WMO codes added as needed NOTE: Use actual WMO code designator as the abbreviation (e.g. FM 18-X)
29	wdpth		Water depth (nearest whole metre)
30	plt		Payload type (e.g. DACT, VEEP, GSBP, ZENO, ODAS33, etc.) Details should be provided regarding each type of payload (payload description)
31	DI	AV NA	Digital image — a photograph or schematic of the platform and equipment Available in digital file Not available
32	WebA		Web address (URL) where additional information can be obtained

ANEMOMETER (AN)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	anmI		Anemometer instrument type
		P	Propeller/vane
		TC	Three cup
		FC	Four cup
		S	Sonic
		WT	WOTAN (wind observation through ambient noise)
		UN	Unknown
		OT	Other (define in footnote)
4	aMS		Anemometer — model (manufacturer/series no.)
5	anmL		Anemometer — location
		FM	Foremast
		AM	Aftmast
		CM	Centremast (mainmast)

		RY	Right yardarm
		LY	Left yardarm
		UN	Unknown
		OT	Other (define in footnote)
6	anDB		Anemometer — distance from the bow or front of platform (metres to tenths)
7	anDC		Anemometer — distance from centre line or from centre of discus (metres to tenths)
8	hwl		Anemometer — height above water line (metres to tenths). Value can be negative for WOTAN
9	ouAN		Anemometer — operational range and units of measurement (e.g. 0 to 60 m s ⁻¹ ; 000 to 360度)
10	sfWD		Sampling frequency (Hz) — wind direction (e.g. 1.28 Hz)
11	sfWS		Sampling frequency (Hz) — wind speed (e.g. 1.28 Hz)
12	apWD		Averaging period (minutes to tenths) — wind direction (e.g. 8.0 minutes)
13	apWS		Averaging period (minutes to tenths) — wind speed (e.g. 8.0 minutes)
14	amWS	S V	Averaging method — wind speed Scalar Vector
15	cmpT		Compass type/model no. — anemometer
16	apWG		Averaging period (seconds) — wind gust (e.g. 5 seconds)
17	amWG	S V	Averaging method — wind gust Scalar Vector
18	amScd		Calibration date — anemometer sensor no. Date sensor was last calibrated (e.g. 2000-7-23)
19	amID		Anemometer sensor installation date (e.g. 1995-2-28). If the direction sensor and speed sensor are separate instruments then use footnote # 1 in the anemometer data record to enter the dates for speed sensor and this position for direction sensor
20	amSD		Anemometer out of service dates (“amSD” is beginning date, “amED” is ending date, e.g. amSD =1996-1-23; amED=1996-2-12). If known these dates should be entered anytime either the direction, speed, or both is unavailable due to equipment outage (non-reporting or invalid reports)
21	(amED)		

AIR TEMPERATURE (AT)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID

2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	ats		Air temperature sensor — instrument type
		ER	Electrical resistance thermometer
		M	Mercury-in-glass thermometer
		MS	Screen shelter — mercury thermometer
		A	Alcohol-in-glass thermometer
		AS	Screen shelter — alcohol thermometer
		UN	Unknown
		OT	Other (specify in footnote # 1 in the air temperature data record)
4	atsMS		Air temperature sensor — model (manufacturer/series no.)
5	atsL		Air temperature sensor — location
		FM	Foremast
		AM	Aftmast
		CM	Centremast (mainmast)
		RY	Right yardarm
		LY	Left yardarm
		UN	Unknown
		OT	Other (specify in footnote # 2 in the air temperature data record)
6	atsDB		Air temperature sensor — distance (metres to tenths) from bow or front of platform NOTE: Leave this field blank if platform is a discus
7	atsC		Air temperature sensor — distance (metres to tenths) from centre line or centre of discus
8	atswl		Air temperature sensor — height (metres to tenths) above water line
9	ouAT		Air temperature sensor — operational range and units of measurement (e.g. — 40°C to+ 50°C)
10	sfAT		Sampling frequency (Hz) — air temperature sensor (e.g. 1.28 Hz)
11	apAT		Averaging period (minutes to tenths) — air temperature sensor (e.g. 8.0 minutes)
12	atScd		Calibration date — air temperature sensor no. Date sensor was last calibrated (e.g. 2000-7-23)
13	atID		Air temperature sensor installation date (e.g. 1995-2-28)
14	atSD		Air temperature sensor out of service dates (“atSD” is beginning date; “atED” is ending date; e.g. atSD=1996-1-23; atED=1996-2-12). If known
15	atED		these dates should be entered anytime the air temperature is unavailable due to equipment outage (non-reporting or invalid reports)

WATER TEMPERATURE (WT)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	wts		Water temperature sensor — instrument type
		HC	Hull contact sensor
		HT	"Through hull" sensor
		RT	Radiation thermometer
		ER	Electrical resistance thermometer
		TT	Trailing thermistor
		BU	Bucket thermometer
		CTD	CTD (conductivity-temperature-depth)
		STD	STD (salinity-temperature-depth)
		RM	Refractometer
		XC	XCTD (expendable CTD probe)
		NS	Nansen cast
		AL	ALACE (autonomous Lagrangian circulation explorer)
		XBT	Expendable bathythermograph
UN	Unknown		
OT	Other (specify in footnote # 1 in the water temperature data record)		
4	wtsMS		Water (sea) temperature sensor — model (manufacturer/series no.)
5	wtsL		Water temperature sensor — location (e.g. port bow, bottom of discus, etc.)
6	wtsDB		Water temperature sensor — distance (metres to tenths) from the bow or front of platform NOTE: Left blank for discus hulls and subsurface temperatures
7	wtsC		Water temperature sensor — distance (metres to tenths) from centre line or centre of discus
8	dws		Depth of water temperature sensor; tenths of metres (e.g. 10.3 m) below the water line
9	ouWT		Operational range and units of measurement — water temperature sensor (e.g. range —4°C to + 40°C)
10	sfWT		Sample frequency (Hz) — water temperature sensor (e.g. 1.28 Hz)
11	apWT		Averaging period (minutes to tenths) — water temperature sensor (e.g. 8.0 minutes)
12	wtScd		Calibration date — water temperature sensor no. Date sensor was last calibrated (e.g. 2000-7-23)

13	wtID		Water temperature sensor installation date (e.g. 1995-2-28)
14	wtSD		Water temperature sensor out of service dates (“wtSD” is beginning date; “wtED” is ending date, e.g. wtSD=1996-1-23; wtED=1996-2-12). If known these dates should be entered anytime the water temperature is unavailable due to equipment outage (non-reporting or invalid reports)
15	wtED		

SALINITY (SA)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	Sstp		Salinity – sensor type
		CTD	CTD (conductivity-temperature-depth)
		STD	STD (salinity-temperature-depth)
		RM	Refractometer
		XC	XCTD (expendable CTD probe)
		NS	Nansen cast
		AL	ALACE (autonomous Lagrangian circulation explorer)
		UN	Unknown
	OT	Other (specify in footnote # 1 in the salinity data record)	
4	Ssm		Salinity sensor (model/manufacturer/series no.)
5	SsL		Salinity sensor no. — location [NOTE: To be used only for those sensors attached to a platform]
6	SsDB		Salinity sensor no. — distance from bow or front of platform NOTE: To be used only when sensor is attached to a platform (same as location above)
7	SsC		Salinity sensor no. — distance from centre line or centre of discus
8	dss		Depth of salinity sensor no. — metres to tenths (e.g. 10.7 m) of salinity sensor below the water line (surface of the water)
9	ouSs		Salinity sensor — operational range and units of measurement (e.g. 25 to 45 parts per thousand. Salinity is calculated based on the measurement of chlorinity)
10	sfSs		Sample frequency — available only for automated digital sensors
11	apSs		Averaging period — available only for automated digital sensors
12	mSs		Method used to compute the salinity (e.g. chlorinity, electrical conductivity, refractive index, etc.)
13	SsScd		Calibration date — salinity sensor no. Date the sensor was last calibrated (e.g. 2000-2-17)

14	SsID		Salinity sensor installation date (e.g. 1995-2-28)
15	SsSD		Salinity sensor out of service dates (“SsSD” is beginning date; “SsED” is ending date, e.g. SsSD =1996-1-23; SsED=1996-2-12). If known these dates should be entered anytime the salinity is unavailable due to equipment outage (non-reporting or invalid reports)
16	SsED		

BAROMETRIC PRESSURE (BP)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	bps		Barometric pressure sensor — instrument type
4	bpsMS		Barometric pressure sensor — model (manufacturer/series no.)
5	bpsL		Barometric pressure sensor — location (e.g. centremast)
6	bpsDB		Barometric pressure sensor — distance (metres to tenths) from the bow or front of platform NOTE: Leave this field blank if platform is a discus
7	bpsC		Barometric pressure sensor — distance (metres to tenths) from centre line or centre of discus
8	bpswl		Barometric pressure sensor — height (metres to tenths) above water line
9	ouBP		Barometric pressure sensor — operational range and units of measurement (e.g. 900–1 100 hPa)
10	sfBP		Sampling frequency (Hz) — barometric pressure sensor (e.g. 1.28 Hz)
11	apBP		Averaging period (minutes to tenths) — barometric pressure sensor (e.g. 8.0 minutes)
12	bpScd		Calibration date — barometric pressure sensor no. Latest date of calibration (e.g. 2000-2-17)
13	bpsID		Barometric pressure sensor installation date (e.g. 1995-2-28)
14	bpsSD		Barometric pressure sensor out of service dates (“bpsSD” is beginning date; “bpsED” is ending date, e.g. bpsSD =1996-1-23; bpsED=1996-2-12). If known these dates should be entered anytime the barometric pressure is unavailable due to equipment outage (non-reporting or invalid reports)
15	bpsED		

RELATIVE HUMIDITY (RH)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	hs		Relative humidity (wet bulb/dew point) sensor — instrument type

4	hsMS		Relative humidity (wet bulb/dew point) sensor — model (manufacturer/series no.)
5	hsL		Relative humidity (wet bulb/dew point) sensor — location (left yardarm mast)
6	hsDB		Relative humidity sensor — distance (metres to tenths) from the bow or front of platform NOTE: Leave this field blank if platform is a discus
7	hsC		Relative humidity sensor — distance (metres to tenths) from centre line or centre of discus
8	hswl		Relative humidity sensor — height (metres to tenths) above water line
9	ouhs		Relative humidity (wet bulb/dew point) sensor — operational range and units of measurement (e.g. range 0–100 per cent)
10	sfhs		Sampling frequency (Hz) — relative humidity (wet bulb/dew point) sensor (e.g. 1 Hz)
11	aphs		Averaging period (minutes) — relative humidity (wet bulb/dew point) sensor (e.g. 1 min.)
12	hsScd		Calibration date — relative humidity (wet bulb/dew point) sensor no. Latest date the sensor was calibrated (e.g. 2000-2-17)
13	hsID		Relative humidity (wet bulb/dew point) sensor installation date (e.g. 1995-2-28)
14	hsSD		Relative humidity (wet bulb/dew point) sensor out of service dates (“hsSD” is beginning date; “hsED” is ending date, e.g. hsSD =1996-1-23; hsED=1996-2-12). If known, these dates should be entered anytime the relative humidity (wet bulb/dew point) is unavailable due to equipment outage (non-reporting or invalid reports)
15	hsED		

PRECIPITATION (PG)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	pg		Precipitation gauge — instrument type (e. g. weighing bucket, tipping bucket, etc.)
4	pgMS		Precipitation gauge — model (manufacturer/series no.)
5	pgL		Precipitation gauge — location
6	pgDB		Precipitation gauge — distance (metres to tenths) from the bow or front of platform
7	pgC		Precipitation gauge — distance (metres to tenths) from centre line or off centre of a discus

8	pgwl		Precipitation gauge — height (metres to tenths) above water line
9	oupg		Precipitation gauge — operational range and units of measurement (e.g. 0 to 25 cm per hour)
10	sfPG		Sampling frequency — precipitation gauge (e.g. continuous)
11	apPG		Averaging period — precipitation gauge (e.g. 6 hours; then reset)
12	pgScd		Calibration date — precipitation gauge no. Latest date sensor/gauge was calibrated (e.g. 2000-2-17)
13	pgID		Precipitation gauge installation date (e.g. 1995-2-28)
14	pgSD		Precipitation gauge out of service dates (“pgSD” is beginning date; “pgED” is ending date, e.g. pgSD=1996-1-23, pgED=1996-2=12). If known, these dates should be entered anytime the precipitation measurement is unavailable due to equipment outage (non-reporting or invalid reports)
15	pgED		

RADIATION (RD)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	srs		Solar radiation sensor — instrument type
4	rMS		Radiation sensor — model (manufacturer/series no.)
5	rsL		Radiation sensor — location (e.g. foremast)
6	rsDB		Radiation sensor — distance (metres to tenths) from the bow or front of platform NOTE: Leave this field blank if platform is a discus
7	rsC		Radiation sensor — distance (metres to tenths) from centre line or centre of discus
8	srwl		Solar radiation sensor — height (metres to tenths) above water line
9	ours		Radiation sensor — operational range and units of measurement (e.g. 0.07–1.65 cal cm ⁻² min ⁻¹)
10	sfSR		Sampling frequency (Hz) — solar radiation sensor (e.g. 1 Hz)
	apSR		Averaging period (minutes to tenths) — solar radiation sensor (e.g. 8.0 minutes)
	srScd		Calibration date — solar radiation sensor no. Latest date the sensor was calibrated (e.g. 2000-2-17)
11	rsID		Radiation sensor installation date (e.g. 1995-2-28)
12	rsSD		Radiation sensor out of service dates (“rsSD” is beginning date; “rsED” is ending date, e.g. rsSD=1996-1-23; rsED=1996-2-12). If known, these dates should be entered anytime the radiation measurement is unavailable
13	rsED		

			due to equipment outage (non-reporting or invalid reports)
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OCEAN CURRENTS (CR)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	OC	C M E	Ocean current speed reported Calculated Measured Estimated
4	TSmoc		Type sensor measuring ocean currents (type/model/manufacture)
5	dmOC		Depth of measurement (in metres, e.g. 10 m) of the ocean current
6	ouOC		Ocean currents — operational range and units of measurement (range, e.g. — 10 m s ⁻¹ to +10 m s ⁻¹)
7	sfOC		Sampling frequency (Hz) — ocean currents (e.g. 0.667 Hz)
8	apOC		Averaging period (minutes to tenths) — ocean currents (e.g. 20.0 minutes)
9	ocScd		Calibration date — ocean current sensor (e.g. 2000-2-17)
10	ocID		Ocean current sensor installation date (e.g. 1995-2-28)
11	ocSD		Ocean current sensor out of service dates (“ocSD” is beginning date; “ocED” is ending date, e.g. ocSD=1996-1-23; ocED=1996-2-12). If known, these dates should be entered anytime the ocean current measurement is unavailable due to equipment outage (non-reporting or invalid reports)
12	ocED		

WAVE SPECTRA (WS)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	wasp		Wave spectra — type of surface elevation sensor (from which wave spectra is derived)
4	Digf		Digital filter used — wave spectra
5	Nblks		Number of blocks used for averaging — wave spectra 4 Npts Number of points in each block
6	Npts		Number of points in each block — wave spectra
7	spAT		Spectral analysis technique (e.g. FFT, MEM, etc.)
8	sfWAS		Sampling frequency — wave spectra (e.g. 2.56 Hz)
9	apWAS		Averaging period — length of record for averaging period — wave spectra (e.g. 20 minutes)

HORIZONTAL VISIBILITY (HV)

<i>sequence number</i>	<i>Field abbreviation</i>	<i>Input codes</i>	<i>Description of fields</i>
1	Sno		Sensor ID
2	ID		ODAS ID of the Platform that sensor was on board, connective with HR.
3	hvm	MAN ATM	Horizontal visibility Manual Automated
4	hvit		Instrument type (automated sensor) — model/manufacturer/series no.
5	hvl		Location — horizontal visibility sensor no.
6	hvDB		Horizontal visibility sensor — distance (metres to tenths) from the bow or front of platform NOTE: Leave this field blank if platform is a discus
7	hvC		Horizontal visibility sensor — distance (metres to tenths) from centre line or centre of discus
8	hvwI		Horizontal visibility sensor — height (metres to tenths) above water line
9	hvou		Horizontal visibility sensor — operational range and units of measurement (e.g. 0000 to 9 999 m or < 0.1 km –10 km)
10	hvsf		Sampling frequency — horizontal visibility sensor no.
11	hvap		Averaging period — horizontal visibility sensor no.
12	hvScd		Calibration date — horizontal visibility sensor no. Latest date sensor was calibrated (e.g. 2000-2-17)
13	hvID		Horizontal visibility sensor installation date (e.g. 1995-2-28)
14	hvSD		Horizontal visibility sensor out of service dates (“hvSD” is beginning date; “hvED” ending date, e.g. hvSD=1996-1-23; hvED=1996-2-12). If known, these dates should be entered anytime the visibility measurement is unavailable due to equipment outage (non-reporting or invalid reports)
15	hvED		

Annex 2: XML Schema for ODAS metadata

1. XML Schema for Header record

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<?xml version="1.0" encoding="utf-8" ?>
<xs:schema id="ODASMetadata_1.1" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="ODASDataSet">
    <xs:complexType>
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2. XML Schema for Sensor records

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      <xs:enumeration value="STD" />
      <xs:enumeration value="RM" />
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    <xs:element name="bpsC" type="xs:string" />
    <xs:element name="Bpswl" type="xs:string" />
    <xs:element name="ouBP" type="xs:string" />
    <xs:element name="SfBP" type="xs:string" />
    <xs:element name="ApBP" type="xs:string" />
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